# E-Chain Systems®

igus.com ... E-Chains® and E-Chain Systems® ... 2016 ... Plastics for longer life®

fast...

**Improve technology and reduce costs**
For years the igus® motto has been “Plastics for longer life®”. By this we mean the production of innovative plastic products which reduce maintenance work, achieve technical improvements, at the same time as reducing costs and increasing service life, everything shipped from stock.

**Available from stock.**
**Shipped from stock in 24 hours!**

**No minimum order value!**
**No surchages!**
You can find our prices online at www.igus.com

**Guarantee**
System warranty for all igus components.
With a warranty certificate!

**8 to 8 service**
Monday till Friday 8:00 am to 8:00 pm and

**Hotline**
Phone 800-521-2747
Fax 401-438-7270

**Online shop www.igus.com**
Product finder, configurator, online catalogs, CAD models and much more. Order around-the-clock!

**Do you have any questions?**
For questions and more information call us or use our online productfinder at www.igus.com

Legal Information:
The information in this catalog, and the data in the Design section in particular, is based on our current knowledge of the products described. No legally binding assurance in respect of characteristics or suitability for a specific intended application can be derived from it. igus® is unable to assume liability of any damages, loss or injury resulting from application of the products. We recommend that you always check the suitability of the products for a specific intended application in a practical-oriented test (please consult igus®). For reasons relating to ongoing technical developments, we reserve the right to implement technical modifications and improvement of the products at any time. Subject to printing errors.

The terms “igus”, “ReadyChain”, “Chainflex”, “E-Chain”, “Energy Chain”, “Energy Chain System”, “E-Chain System” “TwisterChain”, “igubal”, “iglide”, “DryLin”, “Polysorb” and “Plastics for longer life” are legally protected trademarks for igus® GmbH/Cologne in the Federal Republic of Germany and, where applicable, in some foreign countries.

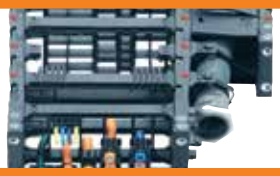
**Design and calculation information, Applications, Diagrams**
Designing with igus®, igus® ReadyChain®, igus® Installation services
1

**Low-priced Easy to fill E-Chains®**
E-Z Chain, System E1, SnapChain
2

**Zip-open, easy to fill E-Chains® and E-Tubes**
Zipper-design E-Chains® and E-Tubes
3

**General Purpose E-Chains® and E-Tubes, snap-open, micro, mini and medium sizes**
E2 Micro, E2 Mini, E2/000 Medium, Classic E2 Medium
4

**Dirt- and chip protection, fully enclosed, snap-open E-Tubes**
E2 E-Tubes, Series R100, Series R and Series RX
5



**Standard E4 modular system, E-Chains® and E-Tubes for nearly all applications**
Series E4-1, E4/Light, E4-1 Light, Classic E4/4 and E4/00
6

**Cleanroom E-Chains® and E-Tubes, low noise, low vibration**
System E3, T3, E6 and E6-1
7

**Multi axis E-Chains® for Robots or 3-D movements Triflex® R, E-Z Triflex®, Triflex®, TwisterChain®, TwisterBand**
8

**Guide Troughs & Long Travel Solutions**
Aluminum SuperTrough, Steel guide trough, Support Tray, Guidefast, Guidelite, E4/4HD, P4, Rol E-Chains®, AUTO-GLIDE, Guidelok horizontal, Basic Flizz®, Micro Flizz®, PPDS, modular projects,
**Special Solutions** - Guidelok slimline F, LiftBand, E-Spool
9

**Strain relief clamps, tiewrap plates, clips, strain relief separators**
Chainfix Strain Relief
10

**Cable protection for static applications**
PMA
11

**General Index**
**Worldwide locations**
12

igus® headquarters in Cologne - development, production and marketing from a single location

| Shipping | Fill weight | Acceleration | Cycles | Noise | Rotation | Temperature | Ordering | Bend Radius |
|---|---|---|---|---|---|---|---|---|
| 24 hours | 67 lbs/ft | 2,572 ft/s² | 1.8 billion | 33 dB(A) | 7000 degrees | 1,562° °F | 10 seconds | 3.8 x od |

# the-chain
# Supplying energy made easy. For any industry.

For any application and any type of motion, in any industry: igus® **the-chain** greatly simplifies supplying energy and media! More than 100,000 products from stock help finding the right solution for your specific needs. From individual components from stock to complete, ready-to-install ReadyChain® energy supply systems within days - igus® **the-chain** follows your production.

**the-chain** initiative combines a constantly growing range of new energy supply solutions for any motion with simplified product selection.

Millions of different energy supply system versions are available world-wide, a number that is growing daily. But many of you only need a few, or possibly only one of these. We are therefore pursuing the objective of reducing product selection complexity to a previously unknown level. **the-chain** means configuring and ordering within minutes, shipment within hours, and reliability for many years. We are constantly upgrading our product range - with the intent of supplying any customer with the best energy supply system solution on the basis of our E-Chain® construction kit within hours - fully matching the customer needs, as individual components or a complete system, even locally installed.

**Available from stock.**
**Shipped from stock in 24 hours!**

**No minimum order! No surcharges!**
You can find our prices online at:
**www.igus.com**

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System warranty for all igus components.
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Shop online at: **www.igus.com**
Product finder, configurator, online catalogs, CAD models and much more.
Order around-the-clock!

## Plastics for longer life® -

**Increase the service-life of your machines with E-Chains® from igus®**

Reducing maintenance work, while cutting costs and extending the service-life, everything delivered from stock immediately - this is the core idea and the objective behind all igus® products. This catalog contains more than 100,000 products available from stock or at short delivery times, and starting at a “lot size of one”. We look forward to your call or email.

**Orders can be placed until 8:00 pm local time.**
**Phone: 800-521-2747**
**Emergency-Service around the clock.**
**100,000 products from stock.**
**No minimum order, no surcharges.**

**igus® is certified in accordance with DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of E-Chains® with cables and harnessing, as well as plastic plain bearings.**

igus® inc.
PO Box 14349
East Providence, RI 02914
401-438-2200
1-800-521-2747
www.igus.com
e-mail: sales@igus.com

**ISO 9001:2008 Certified**

# E-Chains® are lifelines to automated systems

E-Chains® are the umbilical cord of modern machines. igus® has been developing, producing and testing polymer E-Chains® since 1971. Our expert knowledge is being refined continuously with the help of our customers, and is then incorporated into our product line.

**Universal applications for igus® E-Chains®**

- Multitude of possibilities in terms of movement and length
- Carry sensitive bus, data cables and fibre optics cables and energy sources such as electricity, gas, air and liquids
- Accommodate very high dynamic loads and stringent service life requirements
- Handle very different environments and climatic zones
- Space-saving installation
- High levels of acceleration can be achieved
- Simple assembly of modular system on site and rapid retrofitting of cables possible

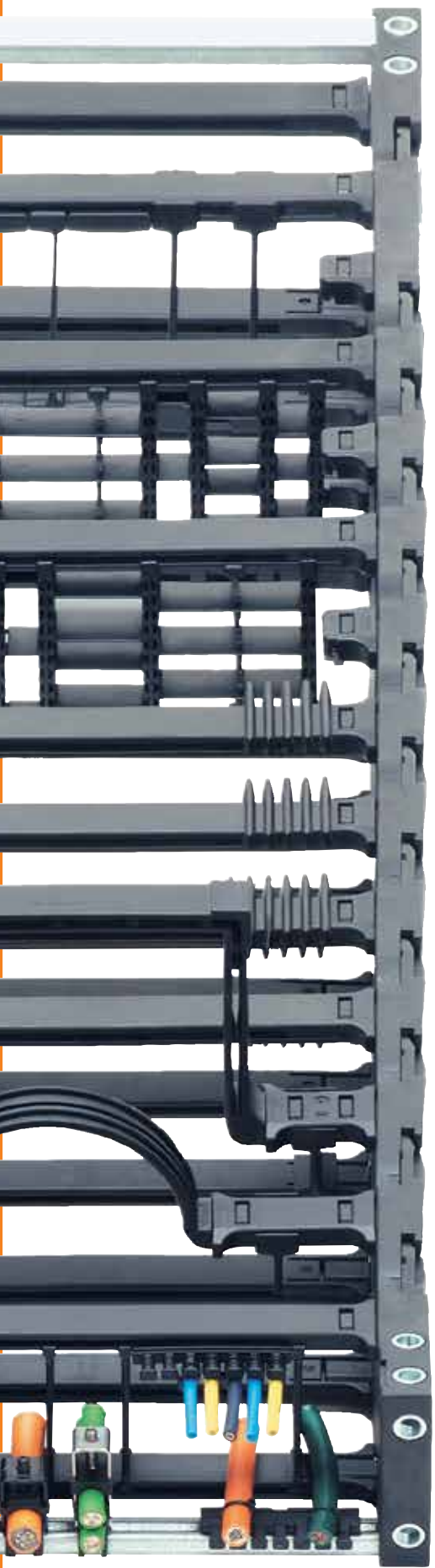
**Save time and money when purchasing and utilizing E-Chains®!**

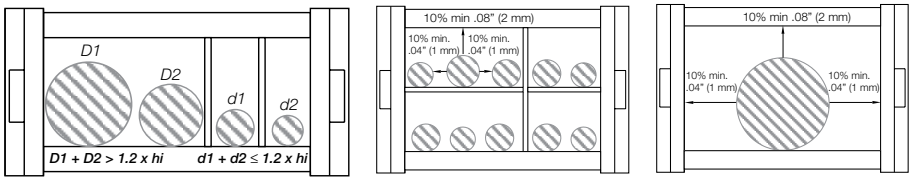
To achieve this, our focus is as follows:

- Innovative products that can be assembled quickly
- Rapid delivery time – saves you storage costs
- Large range of products – find the right solution immediately
- System quotes, including made-to-measure production and “turnkey” assembly
- Rapid system design and support with an ever-growing close-knit network of local sales engineers in Germany and worldwide

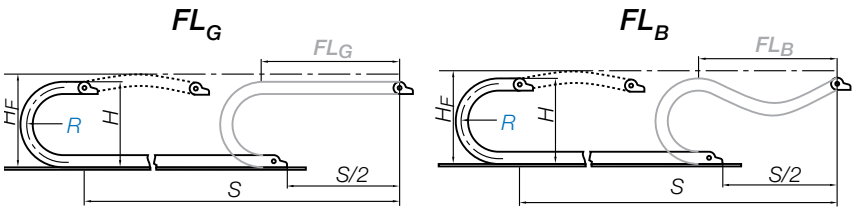
**The award-winning igus® E-Chain Systems® are certified and tested**

**Assembled, just as your design requires**

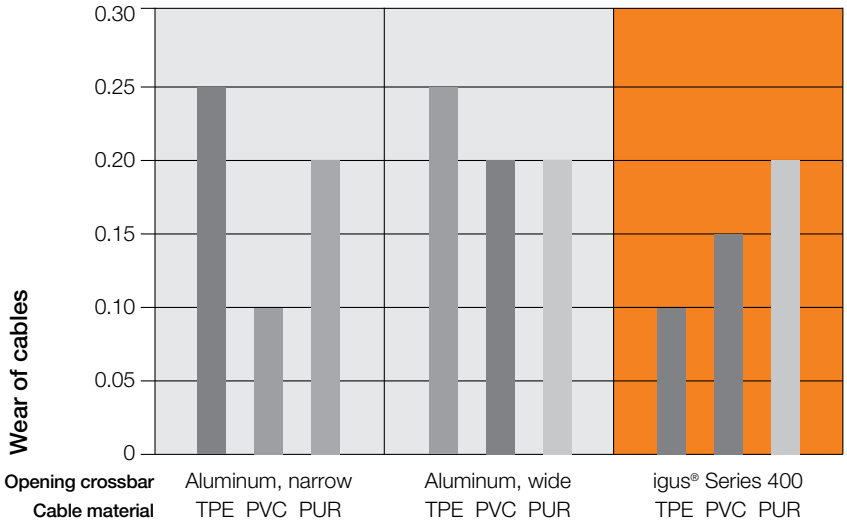




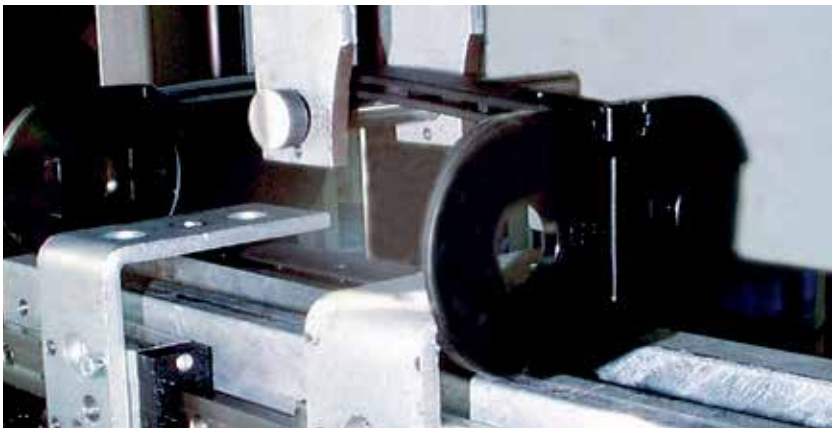

**igus® interior separation systems significantly lengthen the life cycle of cables and enable neat separation of E-Chains®.**
**Filling standards are described ➤ Design, Chapter 1**




**Large unsupported lengths with igus® E-Chains®.**
**Notes, calculations and load diagrams are provided ➤ Design, Chapter 1**




**Optimum service life for cables**
**Reduce cable wear with igus® plastic separators**



**Proven toughness – strength tests during fabrication in the igus® laboratory**

# Chainflex® lasts. Or your money back.

Customers' production processes must remain trouble-free, which includes reliable operation by related energy supply systems, including cables too. igus® was the first company to develop complete E-Chain Systems®. Chainflex® cables and E-Chains® are offered together from a single source with a system guarantee depending on the application involved – our "Chain, Cable, Guarantee" Design principles are based on our knowledge of cables and exhaustive testing used to prevent machine downtimes at plants all over the world since 1989.

**7 rules for making a good cable**

1. **Strain-relieving Core**
   Clear space is created in the center of a cable depending on the number of conductors and cross sections. The center should be filled with a genuine center core (not dummy cores of waste materials) to protect the stranded structure above and prevent the conductors from falling into the center.

2. **Conductor Structure**
   The copper stranding in Chainflex® is chosen in accordance with tested and proven designs. igus®' test results indicate that a medium to fine strand diameter is preferable. Most typical flexing cable designs will employ an extra-fine conductor strand, and have a tendency to kink when subjected to high-duty cycles. As a result of long-term testing, igus® uses a combination of single-wire diameter, pitch length and pitch direction to achieve the best flex life performance in even the most demanding applications.

3. **Core Insulation**
   Insulation materials must be adhesion-resistant to one another within the cable. The insulation must also support the stranded individual wires of the conductor. Only the highest-quality, high-pressure-extruded PVC or TPE materials should be used.

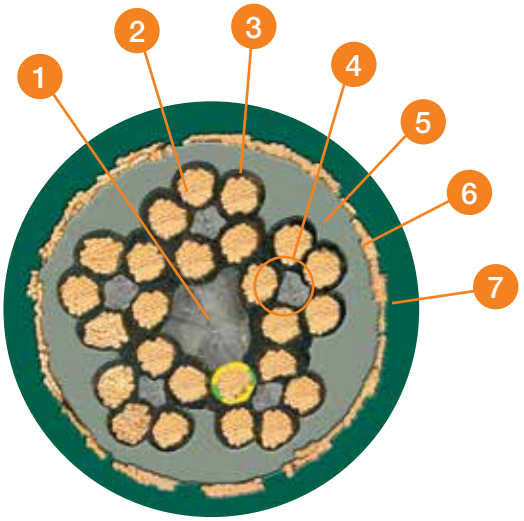
4. **Cable Core**
Individual conductors are bundled in groups. These bundles are cabled together in a single layer around the core. This design enables the pulling and compressing forces of the bending motion to balance and cancels torsional forces. Special attention is given to pitch length and pitch direction. Cables that are not bundled are not suitable for long-travel applications.

5. **Inner Jacket**
A gusset-filling extruded inner jacket should be used instead of inexpensive fleece wrap or filler to ensure that the structure is efficiently guided in longitudinal direction. The inner jacket will also maintain the integrity of the cable core and provide a continuous base for the shield.

6. **Shield Design**
A high-quality braided shield protects cables from external interference and shields any interference before it is transmitted to the outside environment. An optimized braid angle prevents the shield strands from breaking over the linear axis and increases torsional stability. The shield has an optical coverage of approximately 90%, providing maximum shield effectiveness.

7. **Outer Jacket**
The outer jacket material must be UV-resistant, abrasion-resistant and resistant to oils and chemicals, as well as cost-effective. However, it must not adhere to anything and be flexible while providing support. It should also be extruded under pressure (gusset-filled).

Conventional
"chain suitable" cable




igus® Chainflex® – special cable

# ReadyChain® - ready made E-Chain Systems®

## Eliminate storage costs for cables, E-Chains® and plugs

Our short and guaranteed delivery periods enable you to dispense entirely with a storage of ultra-flexible cables, E-Chains® and accessories.

## Shorten turnaround times by half

Thanks to sophisticated logistics, igus® is able to supply complete systems within 10 days of order to almost any part of the world.

## Flexible response to order fluctuations

With ReadyChains® you remain prepared for all phases of an economic cycle. Fluctuations in your capacity utilization are absorbed by our product logistics.

## Reduce the number of subcontractors and related orders by 75%

One order, one invoice, one delivery, one partner. You no longer need to procure countless individual components from a host of subcontractors; we know how to acquire the right parts quickly and economically.

## Minimize your machine downtimes

External purchases of numerous individual components not only make your systems more susceptible to malfunction but also make trouble-shooting more difficult. ReadyChains® provide you with standardized systems. Every system is tested at out facility prior to delivery. igus® is certified in accordance with DIN EN ISO 9001:2008 and ISO/TS 16949:2009 in the field of E-Chains® with cables and harnessing, as well as plastic plain bearings.
**www.igus.com/readychain**

**“Basic” ReadyChain®**
**Simple, harnessed E-Chain Systems® including installed cables without plug connections, labeled and furnished according to your specifications.**

**Shipped in 3 days**

**“Standard” ReadyChain®**
**Simple, harnessed E-Chain Systems® including installed cables with all plug connections, labeled and furnished with projections according to your specifications.**

**Shipped in 3-5 days**

**“Premium” ReadyChain®**
**A harnessed E-Chain System® including installed cables with all plugs, connectors, and components, labeled and furnished according to your specifications.**

**Shipped in 10 days**

# Quality from the igus® laboratory: Tested and proven every day.

**igus® test laboratory**

When it comes to E-Chains, cables, polymer slide bearings and linear systems, applications involving high cycle counts, speeds and accelerations or demanding environmental conditions require proven systems providing durable and reliable operation. igus® regularly conducts tests at its own laboratory under realistic conditions. Every year, we conduct more than 2,000 tests on E-Chains® and cables, and over 5,000 tests on plain bearings. These tests focus on push/pull forces, friction values, wear rates, drive forces and abrasion under all possible conditions at diverse speeds. Influential factors like soiling, weathering, cold and impact are examined. Tests are also performed on electric cables, hydraulic and pneumatic hoses of all kinds. Our laboratory is at your disposal. Should we happen to lack a ready solution for your special problems, we will gladly conduct tests according to your requirements.

igus® ESD-tests in the production line

Electronic checking/archiving for every E-Chain® production run

Cables are also testedfor torsion properties

Noise level test inside an igus® acoustic cell

igus® dynamic bending test

Long term wear test of P4 profile RoI E-Chains®

Push Pull force speeds up to 32.8 ft/s , accelerations up to 656 ft/s$^2$ are tested

Long travel test field: 410 ft. travel length, speed 984 ft/min

All products are tested and available from a single source.
Examples of test certificates and quality seals for igus® products

# How to use the catalog

Chapter color - every E-Chain® Series has a distinct chapter color permitting faster browsing

Product illustration with features of the selected E-Chain®

Description of the E-Chain®, design structure and detailed product information

Assembly tips for opening and closing as well as removing lids if applicable

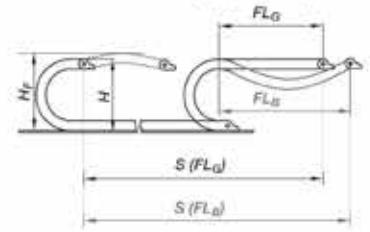
Advantages and recommendations regarding this igus® product

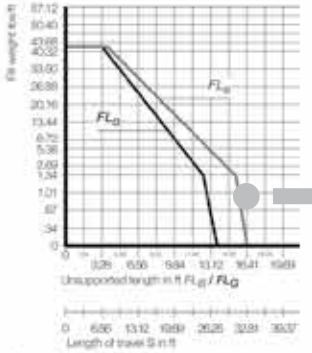
# Energy Chain system® E4-1
# Series E4-56/H4-56/R4-56
# Installation Dimensions

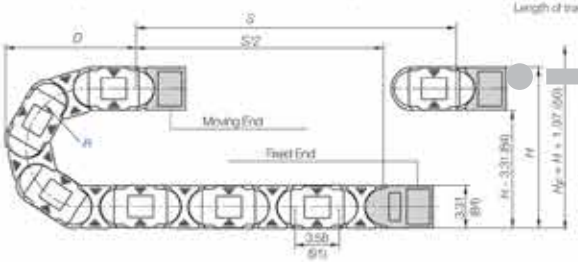
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1, main catalog




**Pitch per link:** = 3.58" (91 mm)
**Links per ft (m):** = 3.35 (11)
**For center mount applications:**
**Chain length** = $^{S}/_{2} + K$

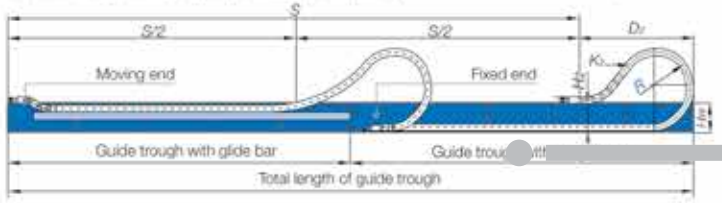
The required clearance height: $H_r = H + 1.96$ in. (50 mm) (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Hr as | 13.94 (354) | 15.12 (384) | 17.09 (434) | 19.06 (484) | 22.20 (564) | 22.99 (584) | 26.93 (684) | 30.87 (784) | 34.80 (884) | 38.74 (984) | 42.68 (1084) |
| D | 10.55 (268) | 11.14 (283) | 12.13 (308) | 13.11 (333) | 14.69 (373) | 15.06 (383) | 17.05 (433) | 19.02 (483) | 20.98 (533) | 22.95 (583) | 24.92 (633) |
| K | 24.02 (610) | 25.79 (655) | 28.94 (735) | 32.09 (815) | 37.01 (940) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 62.99 (1600) | 69.09 (1755) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)**

**For center mount applications:**
**Chain length:** = $^{S}/_{2} + K_L$




| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HL | 13.94 (354) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| DL | 10.55 (268) | 17.72 (450) | 22.83 (580) | 27.95 (710) | 35.43 (900) | 38.58 (980) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 66.93 (1700) | 72.83 (1850) |
| KL | 24.02 (610) | 32.24 (819) | 42.99 (1092) | 53.16 (1274) | 60.91 (1547) | 64.49 (1638) | 76.82 (2002) | 89.57 (2275) | 100.31 (2548) | 114.54 (2912) | 126.96 (3276) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 9C UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1, main catalog**

**Short Travels - Unsupported**

Unsupported Energy Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to further details.

**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength Energy Chain® radius in final position
K = • R + safety buffer
$H_r$ = Required clearance height
$H_{IN}$ = Trough inner height
$H_T$ = *Mounting height
$D_L$ = Overlength - long travels, gliding
$K_L$ = *Add-on
*If the mounting bracket location is set lower

**Long Travels - Gliding**

If the unsupported length is exceeded, the Energy Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1, main catalog**

E4-56
H4-56
R4-56

2.20

PDF: www.igus.com/e-chain-pdfs
Spec /CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/F...HS

6.44

Series
Quickly find the requested Series

Opening design of the selected e-chain® and inner height

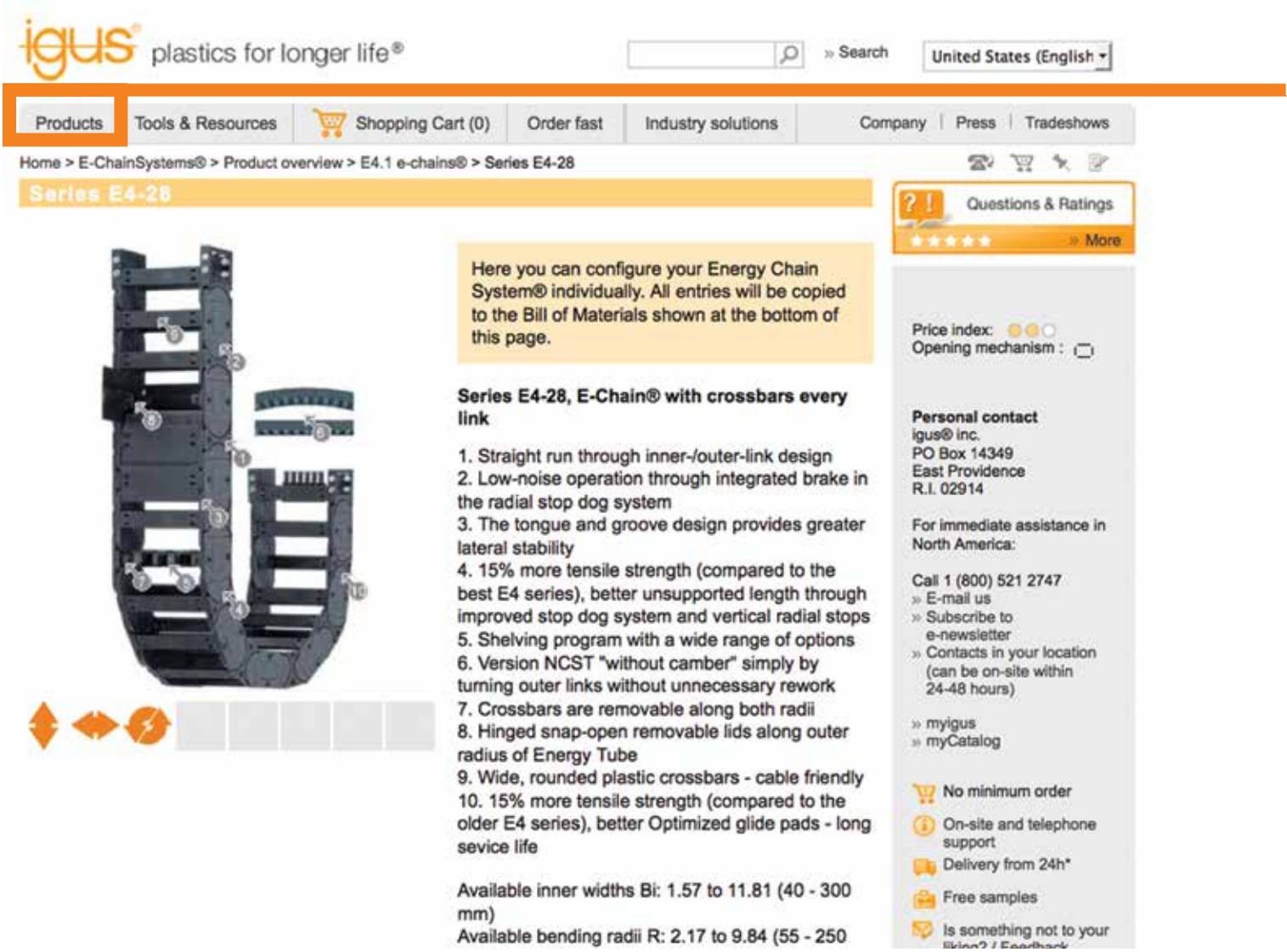
Unsupported length - diagram for the selected E-Chain®

Calculation aid - important details for configuring and calculating E-Chain® length as well as installation space

Available bending radii R
H = Nominal clearance height,
D = Over length E-Chain® radius in final position,
K = Add-on for bending radius

Calculation aid - important details for configuring and calculating E-Chain® length as well as installation space for long travels with lowered mounting height

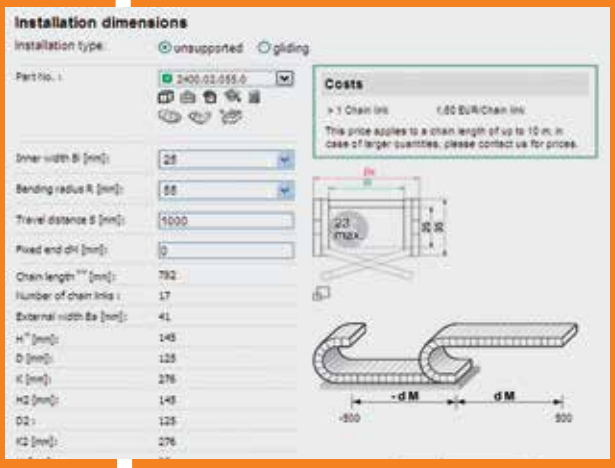
# QuickLink - igus®
# E-Chains® on the Internet!




**Go online and make use of all advantages at** www.igus.com or every product in this catalog, there is a special QuickLink or direct online pointer to further useful details, data and facts. These include:

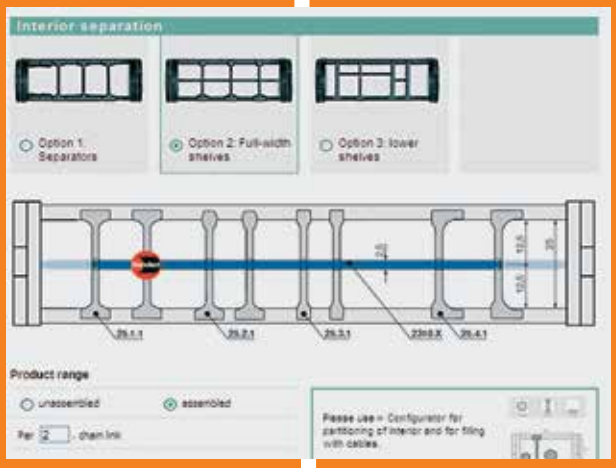
- Application videos and pictures
- Assembly instructions
- 3D-CAD files
- DXF data
- Comparisons and selection aids
- Online configuration tools
- Online wizard for calculations of service life
- PDF-data and other formats for download
- Personal support
- Catalog, CD and sample ordering forms

**“Search” -**
**E-Chain® product selector**
Find the right E-Chain® quickly and easily by entering known application data and other parameters.



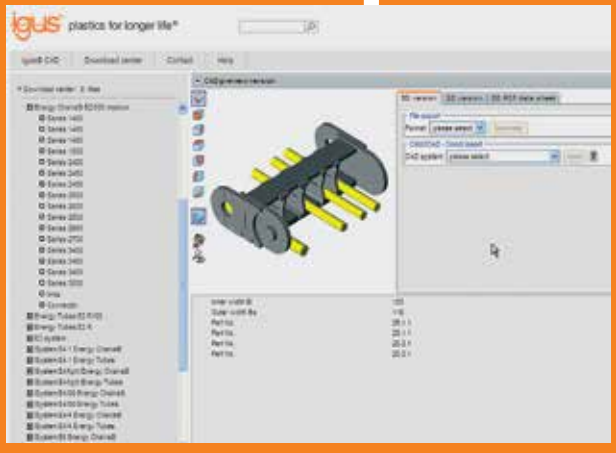

**“Calculate chain length”**
**E-Chain® length calculation.**
Calculate the E-Chain® length and see all installation heights

**“Configure” E-Chain® interior separator configuration**
Quickly and easily determine interior separation for the selected E-Chain® using Drag & Drop. The configuration can be transfered automatically to your part list.

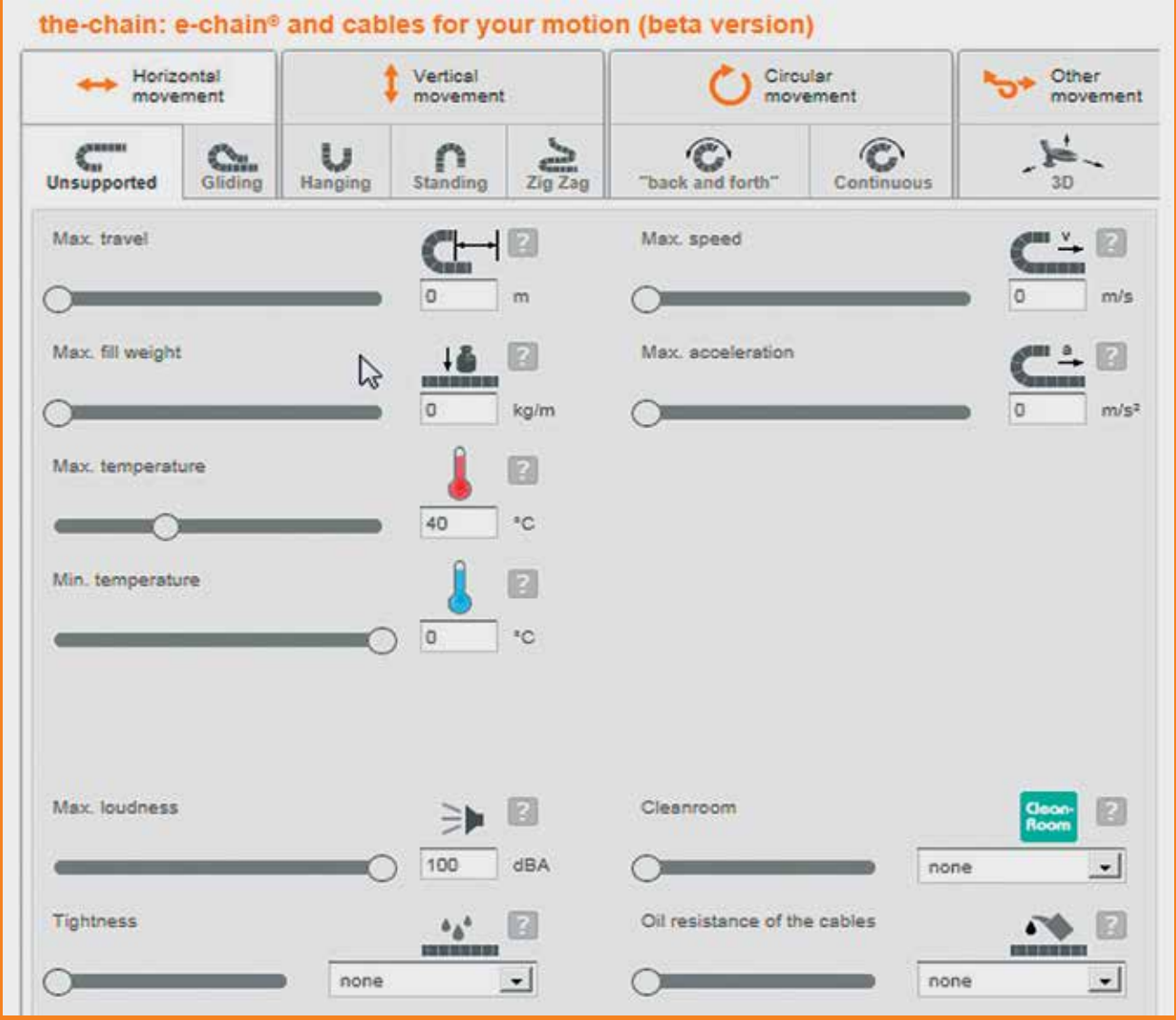



**“Generate 3D file”**
**E-Chain® CAD library**
Download and save CAD data free of charge without having to register. Data on all products are updated and extended on a regular basis - nearly 30 3-D and 2-D formats are available

**Take a tour www.igus-CAD.com**



# igus® the-chain®
# Quickly and easily find the matching energy supply system

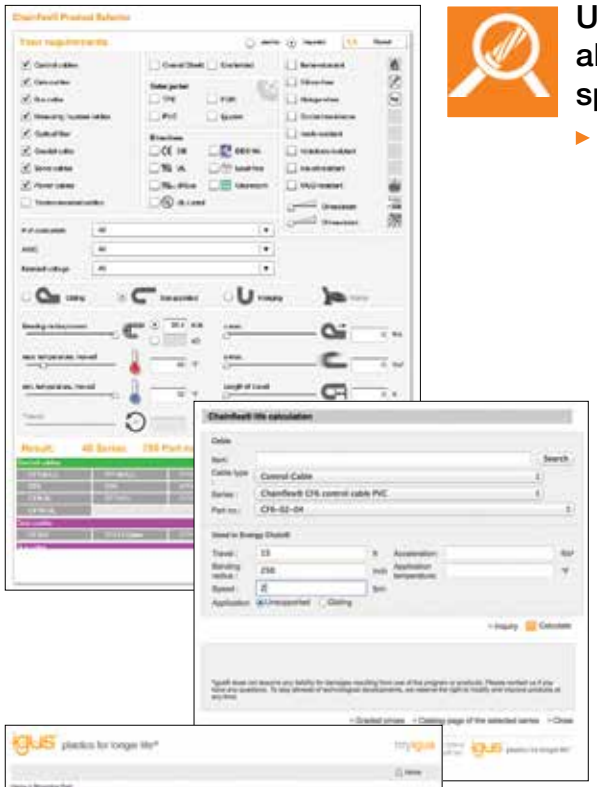



**the-chain®: E-Chains® and cables for my motion - one website for any installation type**
**www.igus.com/the-chain®** quickly and easily finds the right E-Chain® and cables for various motions. Simply select between horizontal, vertical, circular and undefined motions. Enter the required application parameters with a few clicks and immediately obtain an overview of matching E-Chains® and cables.

- Quickly find the right E-Chains® and cables
- Combined product selection aid for E-Chains® and cables
- Very simple and fast selection by motion type
- Direct access to the online catalog

## Online-tool: www.igus.com/the-chain®

# igus® Chainflex® online selection and configuration - www.igus.com/chainflexfinder



Use the product finder to find all relevant Chainflex® cables specifically for your application.
▸ igus.com/chainflexfinder

Calculate the service life of Chainflex® cable with the QuickLife service life predictor.

▸ igus.com/cf-lifetime

Chainflex® online shop: Select and order highly flexible cables for energy supply systems directly online.

▸ www.igus.com

## Custom cable with the Chainflex® Design

**Create the required cable for your E-Chain® with the Chainflex® custom cable ... from 2,500 ft ... delivered in 6 to 8 weeks!**

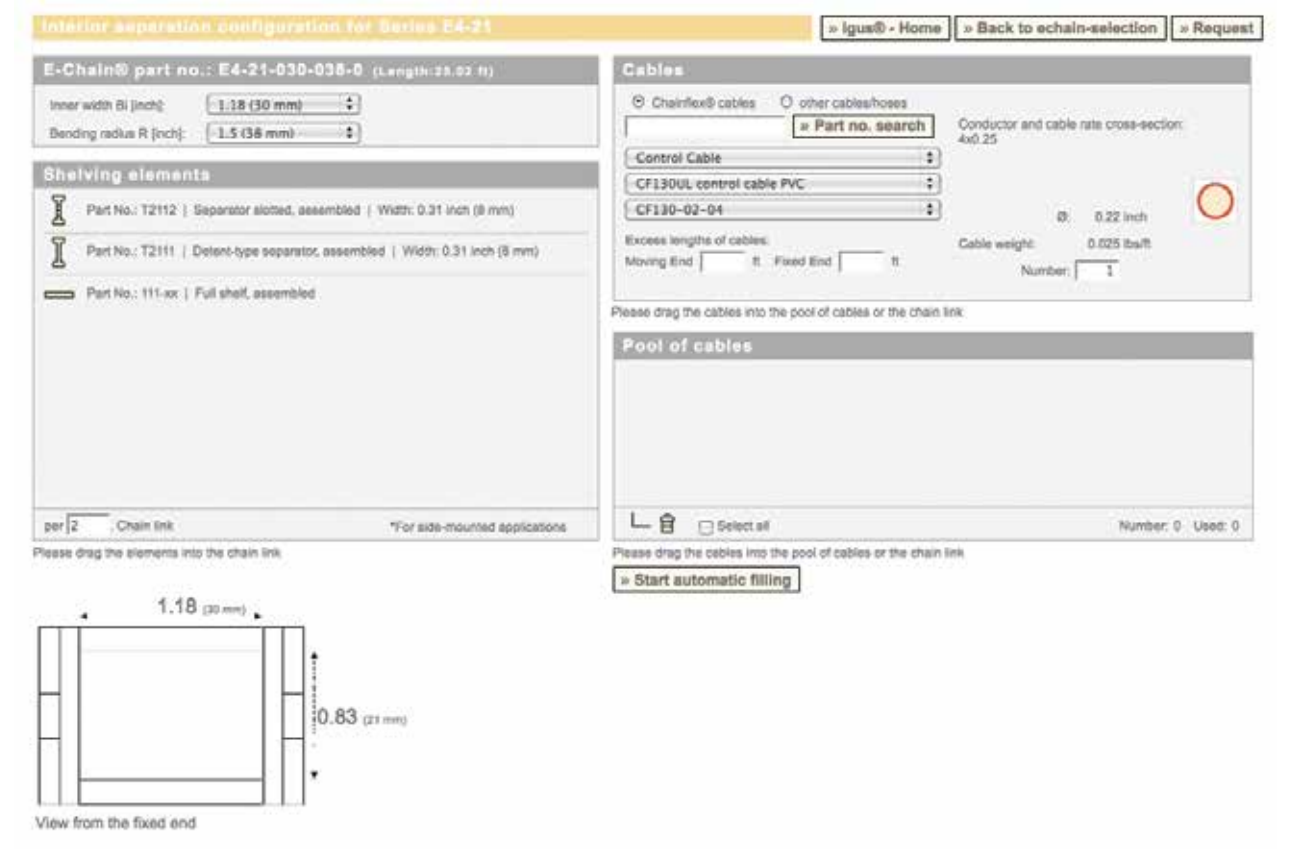
igus® can now produce and deliver an almost endless variety of individual special cables for customers within short lead times and in tested igus® quality. igus® combines the tested Chainflex® quality with the individual requirements for customers in our 18,840 sq. ft. igus® test lab.

With igus® custom cables you can specify

- the cable type
- the structure
- the shield
- the jacket material
- the color
- and the individual printing.

**We will be glad to visit you for a personal discussion and advise you about your customized application.**

# igus® online configurator for interior separation- www.igus.com/quickchain100



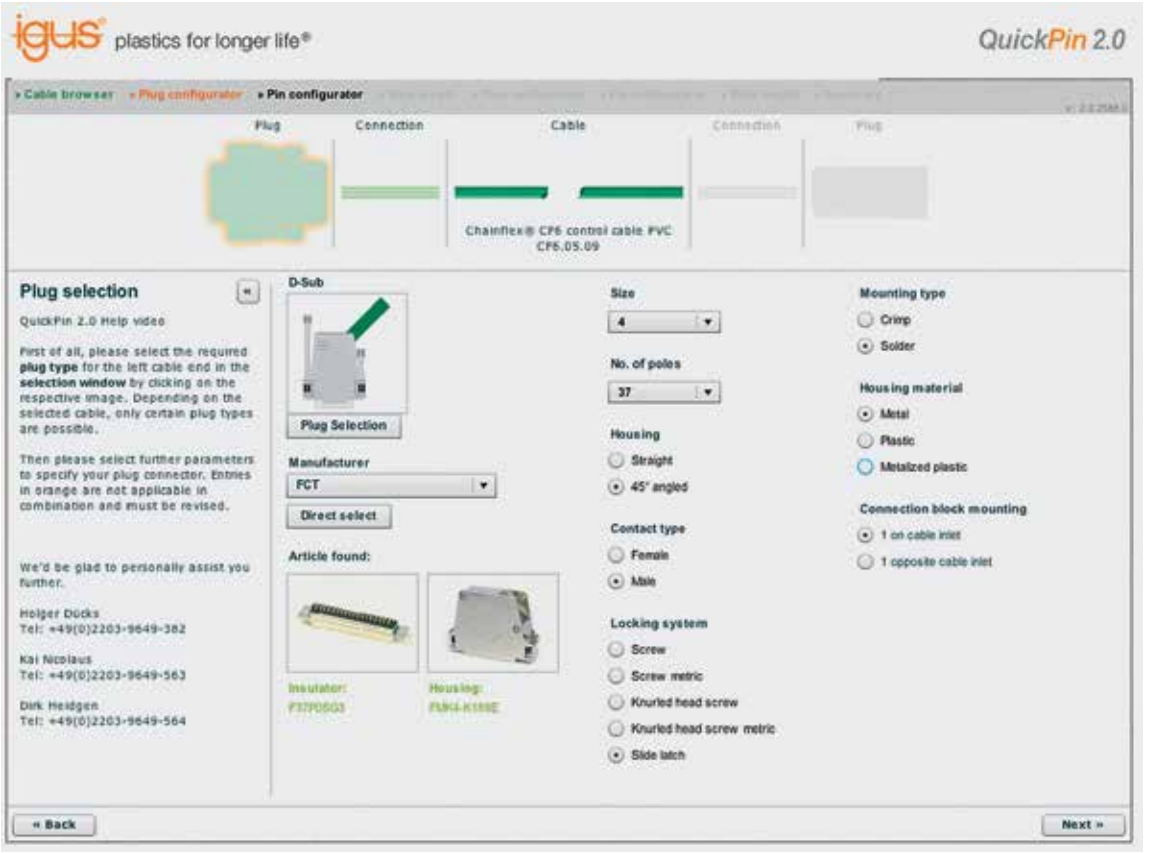

**Change the E-Chain® width directly in the configurator - Cable overview for better handling**

**igus® online configurator for interior separation!**
**Quickly and accurate for the right E- Chain® and Chainflex® cable combination**
With the interior shelving configurator you design the complete filling of an E-Chain® easily and quickly and generate a 3D-CAD-file with one click.

- Interior shelving configuration now with logical check of minimum bending radius
- No manual calculation and crosscheck of the Chainflex® cable diameter and E-Chain® cross section necessary
- Now with cable overview for better handling
- Changing of the E-Chain® width - now possible also in the inner shelving configurator
- Download E-Chain® partlist with interior shelving and cables in Excel format

## www.igus.com/quickchain100

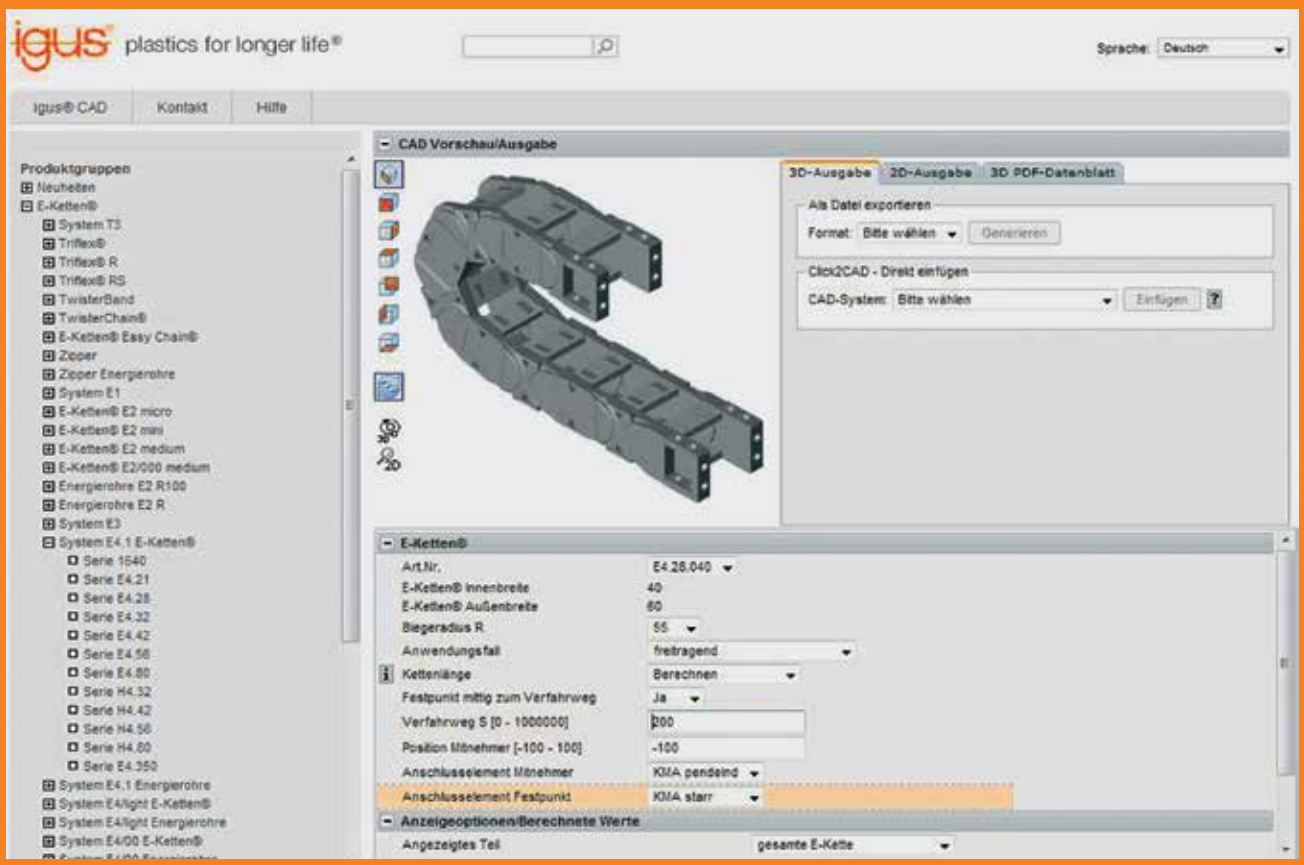
# Quick & Easy - QuickPin 2.0 - Pin-Out Configurator - www.igus.com/quickpin




**QuickPin 2.0 - connector-cable configurator** In only 3 minutes you choose out of more than 1,000 Chainflex® cables and 3,000 connector components, configure cables online.

- Quick and easy configuration and ordering of Chainflex® cables and connectors. Per mouse click and drag & drop
- Circular plug-in connector, squared plug-in connectors, sensor connector M8/M12, D-Sub and free cable ending possible
- Just a click to transfer the configurated cable to the shopping basket and inquire, order or memorize for a later order
- Online pricing, including copper charge
- Harnessing from one source -100 % tested
- No installation required
- Many languages available
- Individual connector specification or components by manufacturers part numbers available

# CAD online/offline...
# The 3D-CAD system is now also available offline




**Now available: QuickCAD offline version**

## NEW

### QuickCAD offline version

For all situations with limited internet access QuickCad is now also available as an offline version.

- Generation of 3D CAD models in 32 file formats
- CAD direct insertion driver for faster data transfer to various CAD systems (e.g.AutoCad, Inventor, Solidworks, CATIA, etc.)
- Quick and easy creation of 2D derivatives
- Integrated 2D and 3D CAD viewer
- Generation of 3D PDF datasheets
- 2D and 3D CAD files can be directly integrated in PDF files
- Available in 16 languages

To download the QuickCAD 2.1 program visit: **www.igus.com/downloads**

- Of course, as before, all CAD data are available to you without registration at: **www.igus-cad.com** for quick downloading

# igus® applications.

# Many interesting applications using igus® E-Chain Systems® can be found on the following pages

**Malaysian ship unloading crane**
One of the longest igus® travels with 1,448 ft for two ship unloaders in Malaysia with igus® Series 5050R. The integrated rollers reduce shearing and tractive loads by more than 75%.

The information in this catalog and the data in the “Design” section in particular, is based on our current knowledge of the products described. No legally binding assurance in respect of characteristics or suitability for a specific intended application can be derived from it. igus® is unable to assume liability of any nature for suitability of the products for a specific intended application in a practically-oriented test. Please consult igus®. For reasons relating to ongoing technical developments, we reserve the right to implement technical modifications and improvement of the products at any time. All catalog dimensions and values apply only to standard material igumid G.
Subject to printing errors. The terms “igus”, “ReadyChain”, “Chainflex”, “E-Chain”, “E-Chain System”, “E-Chain”, “Triflex”, “Twisterchain”, “igubal”, “iglide”, “DryLin”, “xiros”, “manus” and “plastics for longer life” are legally protected trademarks for igus® Inc. and, where applicable, in some foreign countries.

# Practical examples: installation methods

The world-wide largest plastic E-Chain® (as of 05/2013), the igus® E4-1 Series E4-350. Equipped with rollers, it travels energy-efficiently. In this case for a slurry vacuum application.
492 ft. travel,
67 lbs/ft  filling weight

Series E4-1 with side-mounted clip band as a guide for a suction hose. Partially with unsupported lower run

Standing application of an E2/000 E-Chain® with opening crossbars for gentle guidance of large hoses

Several igus® E-Chains® for various requirements on this torch cutting machine

A host of standing igus® E2/000 E-Chains® reliably supply this machining center

igus® E4 E-Tubes - unsupported, standing, or nested - supply this CNC machine. Fill weight up to 16 lbs/ft and v = 164 ft/s

The igus® E4 E-Chain® additionally guides an igus® E2/000 E-Chain® filled with cables

# Practical examples: installation methods

Data gloves with E-Z Chain® Series E03 - Protect the sensors which makes it easier to take off an put on the gloves. Inner height of .20” (5 mm)

Two fully harnessed E2/000 E-Chains® with high fill weight, side mounted

Unsupported application with harnessed E-Chain System® E4

E2/000 - high stability in this elevator with an height of 740 ft

Series R68 works in an apple-sorting-machine: humidity and dirt

Standing application with System E4 and fixed mounting brackets

Drive simulator. High fill weights (40 lbs/ft) with E4 System

# Applications: long strokes

**Solutions with igus® E-Chain Systems®**
igus® E-Chain Systems® guide and protect moving cables and hoses on automated equipment. They can be used in a wide variety of applications; some examples following. More exciting examples

The worldwide longest E-Chain travel of 2,018 ft with igus® Rol e-chains® and Chainflex® cables in a power plant

System E6, side mounted, in high-speed camera positioning system - high speeds and less vibrations

Long travel length with the super-aluminum-trough in a cold store

igus® steel guide trough used in a shelf conveyor application, Series 350 and Chainflex® cables

igus® steel guide trough used in a long travel robotics application

E-Chain® Series 4040RHD RoI e-chain® in an igus® super-aluminum-trough = up to 75% less driving power

Travel up to 640 ft with the igus® System E4, safe guided in an igus® steel trough

# Applications: machine tools

Portal milling machine with fully closed E4 E-Tube
with special material igumid HT. 1,562°F hot chips - no problem

Series E4-42 in a machine tool, completely assembled with igus® Chainflex® cables

ReadyChain® with combined motions on tooling machines. Turnkey delivered with special parts for your machines

E2/000 dirt resistant E-Chain®, which saves installation space - used here on a machine tool for workpieces

Machine tool gantry with various E4 E-Chains® - fast movements and high cycle counts

E4 E-Chain® was used here in curved sections with a 148 ft travel distance

Short travel lengths and high accelerations with Series E2 mini

# Applications: cranes & offshore

OpenHydro tidal turbine generates electric power through the inflow and outflow of water at low and high tide. Series 4040 protects the installed Chainflex® cables during the lifting and lowering movements of the turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approx. 66 feet in a vertical direction above and under water with the robust E-Chain® guided in a steel trough. The vertical travel is transformed into a horizontal stroke by turning through 90 degrees.

Seawater resistant super-aluminum-trough in a RTG-crane.  Long travel with the E4/4 system

Stable guidance without oscillation. Long travel with 105 ft, crane operating speed 262 ft/min.

E4 as ZigZag version in a crane. The E4-Series guarantee very high availabily of the facility

E4 with extension link at a ship loader for coal unloading. Travel 345 ft, speed 787 ft/min, load 36 lbs/ft.

Installation of an E4-1 E-Chain®
Series 800 in an igus® steel guide trough

E-Chain® at the mast of the shelf conveyor rolls from one aluminum guide trough to the opposite one

# Applications: high speed & smooth running

Long travel and side mounted installation with the vibration-free and low noise Series E6-29 in this camera application

System E6 in a pick and place robot. Handles injection molded CD covers in a split second

E6 accelerates the work sequences in the case of this application for wafer handling -
a = 13.2 ft/s², v = 19.7 ft/s

igus® Series E3-15 side mounted in a flat-bed scanner

igus® System E6 - High acceleration (8 g)

Nested E-Chains® reduce vibrations and improve milling accuracy Series E6-62

Low-noise low vibrations with E6.
Designed to withstand high dynamic loads

# Applications: circular & 3D-movements

E-Z Triflex® E-Chains® for multidimensional movements on a production line

E4 “RBR”- application in a telescope - cold temperatures and snow

Laser measuring telescope with Triflex® R. Rotary motion in both directions ≤ 310° possible at high speeds ≤ 66 ft/s

3-axis robot for loading and unloading functions with Series R48 and 3D E-Chain® Triflex® R (TRE)

Circular movement with Series E4/4 - safe energy supply on cranes

Triflex® R in a magnesium die-casting industry (heat, dirt, oil, metal chips, dust, etc.)

E2 mini, Series B15 - The motor spindle has a swivelling range of approx. 210°

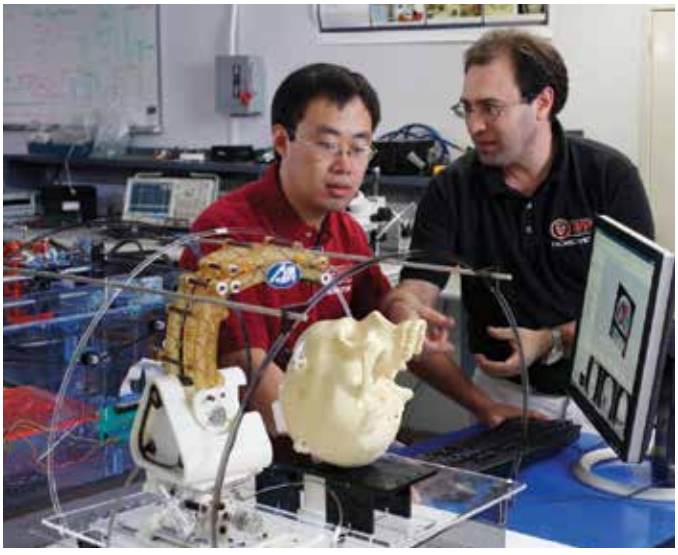
**The yes Program is designed to foster the mechanical design ideas of students and to educate them on the merits and benefits of plastic components. Through yes, igus® donates its products to students, competitions and engineeering programs across the United States, Canada and Mexico.**

### Through the yes Program, igus®:

- offers free product donations to students, engineers and professors for use in various design competitions, school projects and engineering curriculums;
- supports the visions of various robotics competitions by donating products, technical support and other resources;
- revitalizes students' interest in engineering; and
- helps make the design ideas of students and engineers a reality.

### yes Facts

- The **yes** Program is open to students of all ages and grade levels
- The **yes** Program sponsors competitions such as *FIRST*® Robotics, BEST™ Robotics, Botball and Rube Goldberg.
- The **yes** Program offers lecture engagements presented by bearings and cable carrier experts at schools and universities.



**Hao Su, PhD candidate, and Professor Gregory Fischer from the Worcester Polytechnic Institute used iglide® plastic bushings and a DryLin® linear guide system for their MRI-guided needle placement robot, which will improve the way prostate cancer is detected and treated.**

**Students competing in the RASC-AL Exploration Robo-Ops competition, which took place at NASA's Rock Yard at the Johnson Space Center, used iglide® PRT slewing ring bearings in the turret of the robot's arm.**

**Interested in becoming part of the yes Program?**

**Contact yes@igus.com**

# E-Z Chain

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E-Z Chain - easy to fit - simply press cables in by hand!

### E-Z Chain, split crossbar along the **outer** radius

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| E03 | .20 (5) | ø .12 | .20-.39 (5-10) | .31 (8) | .34-.54 (8.7-13.7) | .39-1.10 (10-28) | .39 (10) |
| E04 | .28 (7) | ø .18 | .28 (7) | .39 (10) | .51 (13) | .59-1.89 (15-48) | .66 (16.7) |
| E045 | .37 (9.4) | ø .22 | .63 (16) | .49 (12.5) | .91 (23) | .71-1.50 (18-38) | .51 (13) |
| E06 | .42 (10.7) | ø .26 | .39-.63 (10-16) | .59 (15) | .65-.86 (16.5-22.5) | .71-1.50 (18-38) | .79 (20) |
| E065 | .44 (11.3) | ø .28 | .63-1.42 (16-36) | .59 (15) | (24.8-49.3) | .71-1.50 (18-38) | .59 (15) |
| E08 | .57 (14.5) | ø .39 | .39-1.97 (10-50) | .76 (19.3) | .72-2.29 (18.2-58.2) | 1.10-1.89 (28-48) | .79 (20) |
| E14 | .96 (24.3) | ø.51 | .59-1.57 (15-50) | .98 (25) | 1.06-2.44 (27-62) | 1.10-4.92 (28-125) | 1.20 (30.5) |
| E200 | .96 (24.3) | ø .79 | 2.24 (57) | 1.38 (35) | 2.93 (74.4) | 2.17-7.87 (55-200) | 1.81 (46) |
| E200-2 | 1.26 (32) | ø .71 | 1.46-1.97 (37-50) | 1.38 (35) | 3.72-4.74 (94.4-120.4) | 2.17-7.87 (55-200) | 1.81 (46) |
| E16 | 1.44 (36.5) | ø .98 | .91-3.94 (23-100) | 1.54 (39) | 1.48-4.54 (37.5-115.3) | 2.36-4.92 (60-125) | 1.20 (30.5) |
| E26 | 1.44 (36.5) | ø 1.10 | 2.95 (75) | 1.97 (50) | 3.62 (92) | 2.48-9.84 (63-250) | 2.20 (56) |
| E26-2 | 1.46 (37.1) | ø .79 | 1.89 (48) | 1.97 (50) | 4.6 (117) | 2.48-9.84 (63-250) | 2.20 (56) |
| E26-3 | 1.46 (37.1) | ø .79 | 1.85 (47) | 1.97 (50) | 6.57 (167) | 2.48-9.84 (63-250) | 2.20 (56) |
| E300 | 1.91 (48.5) | ø 1.38 | 2.95 (75) | 2.52 (64) | 3.74 (95) | 2.95-11.81 (75-300) | 2.64 (67) |
| E300-2 | 1.91 (48.5) | ø .71 | 1.89 (48) | 2.52 (64) | 4.72 (120) | 2.95-11.81 (75-300) | 2.64 (67) |
| E300-3 | 1.91 (48.5) | ø .71 | 1.81 (46) | 2.52 (64) | 6.69 (170) | 2.95-11.81 (75-300) | 2.64 (67) |

### E-Z Chain, split crossbar along the **inner** radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Z045 | .37 (9.4) | ø .22 | .63 (16) | .49 (12.5) | .91 (23) | .71-1.50 (18-38) | .51 (13) |
| Z06 | .41 (10.5) | ø .26 | .39-.63 (10-16) | .59 (15) | .65-.86 (16.5-22.5) | .71-1.50 (18-38) | .79 (20) |
| Z065 | .44 (11.3) | ø .28 | 1.06 (27) | .59 (15) | 1.55 (39.3) | .71-1.50 (18-38) | .59 (15) |
| Z08 | .58 (14.7) | ø .39 | .39-1.97 (10-50) | .76 (19.3) | .72-2.29 (18.2-58.2) | 1.10-1.89 (28-48) | .79 (20) |
| Z14 | .75 (19) | ø .51 | .59-1.97 (15-50) | .98 (25) | 1.06-2.44 (27-62) | 1.10-4.92 (28-125) | 1.20 (30.5) |
| Z200 | .96 (24.3) | ø .79 | 2.24 (57) | 1.38 (35) | 2.93 (74.4) | 2.17-7.87 (55-200) | 1.81 (46) |
| Z200-2 | .96 (24.3) | ø .71 | 1.46-1.97 (37-50) | 1.38 (35) | 3.72-4.74 (94.4-120.4) | 2.17-7.87 (55-200) | 1.81 (46) |
| Z16 | 1.26 (32) | ø .98 | .91-3.94 (23-100) | 1.54 (39) | 1.48-4.54 (37.5-115.3) | 1.57-4.92 (40-125) | 1.20 (30.5) |
| Z26 | 1.44 (36.5) | ø 1.10 | 2.95 (75) | 1.97 (50) | 3.62 (92) | 2.48-9.84 (63-250) | 2.20 (56) |
| Z26-2 | 1.46 (37.1) | ø .79 | 1.89 (48) | 1.97 (50) | 4.6 (117) | 2.48-9.84 (63-250) | 2.20 (56) |
| Z26-3 | 1.46 (37.1) | ø .79 | 1.85 (47) | 1.97 (50) | 6.57 (167) | 2.48-9.84 (63-250) | 2.20 (56) |
| Z300 | 1.91 (48.5) | ø 1.38 | 2.95 (75) | 2.52 (64) | 3.74 (95) | 2.95-11.81 (75-300) | 2.64 (67) |
| Z300-2 | 1.91 (48.5) | ø .71 | 1.89 (48) | 2.52 (64) | 4.72 (120) | 2.95-11.81 (75-300) | 2.64 (67) |
| Z300-3 | 1.91 (48.5) | ø .71 | 1.81 (46) | 2.52 (64) | 6.69 (170) | 2.95-11.81 (75-300) | 2.64 (67) |

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Interior separation possibilities... Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom IPA | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .154 (0.23) | 1.31 (0.40) | – | | – | – | – | ○ | ■ | ● | ■ | ◐○○ | 2.7 |
| .188 (0.28) | 1.80 (0.55) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.11 |
| .168 (0.25) | 1.31 (0.40) | – | | – | – | – | ▲ | ■ | ● | ■ | ◐○○ | 2.15 |
| .302 (0.45) | 1.80 (0.55) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.21 |
| .302 (0.45) | 1.97 (0.60) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.25 |
| .504 (0.75) | 3.28 (1.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.31 |
| .336 (0.5) | 2.13 (0.65) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.35 |
| 1.34 (2.0) | 5.74 (1.75) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.39 |
| 1.34 (2.0) | 5.74 (1.75) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.39 |
| .504 (0.75) | 3.28 (1.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.45 |
| 2.69 (4.0) | 7.87 (2.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 2.69 (4.0) | 7.87 (2.00) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 2.69 (4.0) | 7.87 (2.00) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 5.38 (8.0) | 7.38 (2.25) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.55 |
| 5.38 (8.0) | 7.38 (2.25) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.55 |
| 5.38 (8.0) | 7.38 (2.25) | – | | ● | – | ● | ▲ | ■ | ● | ● | ◐○○ | 2.55 |
| .168 (0.25) | 1.31 (0.40) | – | | – | – | – | ▲ | ■ | ● | ■ | ◐○○ | 2.15 |
| .302 (0.45) | 1.80 (0.55) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.21 |
| .302 (0.45) | 1.97 (0.60) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.25 |
| .504 (0.75) | 3.28 (1.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.31 |
| .336 (0.5) | 2.13 (0.65) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.35 |
| 1.34 (2.0) | 5.74 (1.75) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.39 |
| 1.34 (2.0) | 5.74 (1.75) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.39 |
| .504 (0.75) | 3.28 (1.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.45 |
| 2.69 (4.0) | 7.87 (2.00) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 2.69 (4.0) | 7.87 (2.00) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 2.69 (4.0) | 7.87 (2.00) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.49 |
| 5.38 (8.0) | 7.38 (2.25) | – | | – | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.55 |
| 5.38 (8.0) | 7.38 (2.25) | – | | ● | – | – | ▲ | ■ | ● | ● | ◐○○ | 2.55 |
| 5.38 (8.0) | 7.38 (2.25) | – | | ● | – | ● | ▲ | ■ | ● | ● | ◐○○ | 2.55 |

# System E-1, SnapChain, Zipper Chain

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## System E1 - Cost-effective, one-piece strip design for simple applications

### E-Chains®, zip-open along the outer radius

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **E1-10** | **.39 (10)** | ø .35 | .51 (13) | .61 (15.5) | .72-2.29 (16.5) | .71 (18) | .79 (20) |
| **E1-17** | **.67 (17)** | ø .59 | .83-1.73 (21-44) | .98 (25) | 1.02-1.93 (26-49) | 1.10 (28) | 1.00 (25.5) |
| **E1-18** | **.71 (18)** | ø .63 | .59 (15) | 1.02 (26) | .79 (20) | 1.10 (28) | .99 (25.25) |
| **E1-20** | **.79 (20)** | ø .71 | .59 (15) | 1.06 (27) | .87 (22) | 1.10 (28) | .98 (25) |

## SnapChain - Fit cable assemblies quickly in bunches

### E-Chains®, Loops to be opened along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TE14-50** | **Loop Length:** 50 mm | | – | – | – | 1.10-4.92 (28-125) | 1.20 (30.5) |
| **TE26-120** | **Loop Length:** 120 mm | | – | – | – | 2.48-7.87 (63-200) | 2.20 (56) |

### E-Tubes, Loops to be opened along the inner radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **TZ14-50** | **Loop Length:** 50 mm | | – | – | – | 1.10-4.92 (28-125) | 1.20 (30.5) |
| **TZ26-120** | **Loop Length:** 120 mm | | – | – | – | 2.48-7.87 (63-200) | 2.20 (56) |

## Zipper Chain - Zipper fastening E-Chains® and E-Tubes!

### E-Chains®, zip-open along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **047** | **.35 (9)** | ø .28 | .39-.63 (10-16) | .49 (12.5) | .63-.87 (16-22) | .71-1.50 (18-38) | .51 (13) |
| **07** | **.41 (10.3)** | ø .31 | .24-2.52 (6-64) | .59 (15) | .49-2.80 (12.5-71) | .71-1.50 (18-38) | .79 (20) |
| **09** | **.59 (15)** | ø .51 | .39-1.97 (10-50) | .76 (19.3) | .72-2.29 (18.2-58.2) | 1.10-1.89 (28-48) | .79 (20) |
| **15** | **.67 (17)** | ø .59 | .59-3.94 (15-100) | .94 (24) | 1.02-4.45 (26-113) | 1.50-7.09 (38-180) | 1.20 (30.5) |
| **17** | **1.26 (32)** | ø 1.10 | .59-3.94 (15-100) | 1.54 (39) | 1.02-4.45 (26-113) | 2.48-4.92 (63-125) | 1.20 (30.5) |

### E-Tubes, zip-open along the inner radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **R07** | **.41 (10.3)** | ø .31 | .39-1.97 (10-50) | .59 (15) | .65-2.24 (16.5-57) | 1.50-1.89 (38-48) | .79 (20) |
| **R09** | **.59 (15)** | ø .49 | .39-1.97 (10-50) | .76 (19.3) | .72-2.29 (18.2-58.2) | 1.89-3.94 (48-100) | .79 (20) |
| **R15** | **.67 (17)** | ø .59 | .98-3.15 (25-80) | .94 (24) | 1.42-3.70 (36-94) | 2.48-7.09 (63-180) | 1.20 (30.5) |
| **R17** | **1.26 (32)** | ø 1.10 | .59-2.48 (15-63) | 1.54 (39) | 1.02-2.99 (26-76) | 2.48-4.92 (63-125) | 1.20 (30.5) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| upon request | – | – | | – | – | – | ○ | ● | ▲ | ● | | 2.69 |
| upon request | – | – | | – | – | – | ○ | ● | ▲ | ● | | 2.70 |
| upon request | – | – | | – | – | – | ○ | ● | ▲ | ● | | 2.71 |
| upon request | – | – | | – | – | – | ○ | ● | ▲ | ● | | 2.72 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| – | – | – | | – | – | – | – | – | ▲ | ■ | | 2.77 |
| – | – | – | | – | – | – | – | – | ▲ | ■ | | 2.78 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| – | – | – | | – | – | – | – | – | ▲ | ■ | | 2.77 |
| – | – | – | | – | – | – | – | – | ▲ | ■ | | 2.78 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| .168 (0.25) | 1.31 (0.40) | – | | – | – | – | ▲ | ● | ▲ | ■ | | 3.7 |
| .27 (0.4) | 1.80 (0.55) | – | | – | – | – | ▲[2] ■ | ● | ▲ | ■ | | 3.11 |
| .504 (0.75) | 3.28 (1.00) | – | | ● | ● | – | ▲[2] ■ | ● | ▲ | ■ | | 3.19 |
| 1.01 (1.5) | 3.94 (1.20) | – | | ● | ● | – | ▲ | ■ | ▲ | ■ | | 3.27 |
| .67 (1.0) | 3.28 (1.00) | – | | ● | ● | – | ▲ | ● | ▲ | ■ | | 3.39 |
| | | | | | | | | | | | | |
| .27 (0.4) | 1.80 (0.55) | – | | – | – | – | ▲ | ● | ▲ | ■ | | 3.15 |
| .504 (0.75) | 3.28 (1.00) | – | | – | – | – | ▲ | ● | ▲ | ■ | | 3.23 |
| 1.10 (1.5) | .81 (1.2) | – | | ● | ● | – | ▲ | ● | ▲ | ■ | | 3.33 |
| 1.01 (1.5) | .81 (1.2) | – | | ● | ● | – | ▲ | ● | ▲ | ■ | | 3.45 |

# E2 Micro, E2 Mini

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E2 Micro - smallest inner heights and bending radii

### E-Chains®, non snap-open

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 03 | .20 (5) | ø .14 | .20-.39 (5-10) | .31 (8) | .34-.54 (8.7-13.7) | .39-1.10 (10-28) | .39 (10) |
| 04 | .28 (7) | ø .20 | .28-1.18 (7-30) | .39 (10) | .47-1.38 (12-35) | .59-1.89 (15-48) | .66 (16.7) |
| 05 | .39 (10) | ø .31 | .24-2.52 (6-64) | .47 (12) | .39-2.68 (10-68) | .71-1.50 (18-38) | .51 (13) |
| 045 | .41 (10.3) | ø .31 | .24-2.52 (6-64) | .49 (12.5) | .47-2.76 (12-70) | .71-1.50 (18-38) | .79 (20) |
| 06 | .41 (10.5) | ø .31 | .24-2.52 (6-64) | .59 (15) | .49-2.80 (12.5-71) | .71-1.50 (18-38) | .79 (20) |
| E2C-10 | (10.6) | ø .31 | .24-1.97(6-50) | .59(15) | .53-2.26 (13.4-57.4) | .71-1.50 (18-38) | .79 (20) |
| E2C-15 | (14.9) | ø .49 | .39-1.97(10-50) | .76 (19.3) | .70-2.28 (17.8-57.8) | 1.10-2.95 (28-75) | .79 (20) |
| 08 | .59 (15) | ø .47 | .39-1.97 (10-50) | .76 (19.3) | .72-2.29 (18.2-58.2) | 1.10-1.89 (28-48) | .79 (20) |

### E-Chains®, snap-open along the inner radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E2i-10 | (10.6) | ø .31 | .24-1.97(6-50) | .59(15) | .53-2.26 (13.4-57.4) | .71-1.50 (18-38) | .79 (20) |
| E2i-15 | (14.9) | ø .49 | .39-1.97(10-50) | .76 (19.3) | .70-2.28 (17.8-57.8) | 1.10-2.95 (28-75) | .79 (20) |
| | | | | | | | |
| | | | | | | | |

### E-Chains®, snap-open along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E2-10 | (10.6) | ø .31 | .24-1.97(6-50) | .59(15) | .53-2.26 (13.4-57.4) | .71-1.50 (18-38) | .79 (20) |
| B07 | .41 (10.3) | ø .31 | .63-1.57 (16-40) | .59 (15) | .89-1.85 (22.5-47) | .71-1.50 (18-38) | .79 (20) |
| B09 | .56 (14.3) | ø .49 | .63-1.57 (16-40) | .76 (19.3) | .95-1.90 (24.2-48.2) | 1.10-1.89 (28-48) | .79 (20) |
| E2-15 | (14.9) | ø .49 | .39-1.97(10-50) | .76 (19.3) | .70-2.28 (17.8-57.8) | 1.10-2.95 (28-75) | .79 (20) |

## E2 Mini - small and medium sizes

### E-Chains®, non snap-open

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 10 | .71 (18) | ø .63 | .59-3.94 (15-100) | .91 (23) | 1.02-4.45 (26-113) | 1.10-7.09 (28-180) | 1.20 (30.5) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

### E-Chains®, snap-open along the inner radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14 | .79 (20) | ø .63 | .59-1.97 (15-50) | .98 (25) | 1.02-2.40 (26-61) | 1.10-4.92 (28-125) | 1.20 (30.5) |
| B15i | .67 (17) | ø .55 | .59-3.94 (15-100) | .91 (23) | 1.02-4.45 (26-113) | 1.50-7.09 (38-180) | 1.20 (30.5) |
| B17i | 1.26 (32) | ø 1.10 | 1.50 (38) | 1.54 (39) | 1.40-1.91 (35.5-48.5) | 1.89-4.92 (48-125) | 1.20 (30.5) |
| | | | | | | | |

### E-Chains®, snap-open along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| B15 | .67 (17) | ø .55 | .59-3.94 (15-100) | .91 (23) | 1.02-4.45 (26-113) | 1.50-7.09 (38-180) | 1.20 (30.5) |
| B17 | 1.26 (32) | ø 1.10 | .59-3.94 (15-100) | 1.54 (39) | 1.00-1.40 (25.5-113) | 1.89-4.92 (48-125) | 1.20 (30.5) |
| | | | | | | | |
| | | | | | | | |

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Interior separation possibilities... Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| .16 (0.24) | 1.31 (0.40) | – | | – | – | – | ▲ | ○ | ▲ | ■ | ●●● | 4.7 |
| .25 (0.375) | 1.64 (0.50) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.11 |
| .25 (0.375) | 1.64 (0.50) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.15 |
| .17 (0.25) | 1.64 (0.50) | – | | – | – | – | ▲ | ○ | ▲ | ■ | ●●● | 4.19 |
| .32 (0.48) | 1.97 (0.60) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.23 |
| .47 (0.70) | 2.46 (0.75) | – | | ▲ | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.27 |
| .84 (1.25) | 4.27 (1.30) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.41 |
| .50 (0.74) | 3.28 (1.00) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.47 |
| | | | | | | | | | | | | |
| .47 (0.70) | 2.46 (0.75) | – | | ▲ | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.27 |
| .84 (1.25) | 4.27 (1.30) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.41 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| .47 (0.70) | 2.46 (0.75) | – | | ▲ | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.27 |
| .27 (0.40) | 1.80 (0.55) | – | | – | – | – | ○ | ● | ▲ | ■ | ●●● | 4.33 |
| .47 (0.70) | 3.28 (1.00) | – | | ● | ● | – | ○ | ● | ▲ | ■ | ●●● | 4.37 |
| .84 (1.25) | 4.27 (1.30) | – | | – | – | – | ▲ | ○ | ▲ | ● | ●●● | 4.41 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 1.01 (1.50) | 4.26 (1.30) | – | | – | – | – | ▲ | ● | ▲ | ● | ●●● | 4.57 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| .34 (0.50) | 2.13 (0.65) | – | | ● | ● | – | ▲ | ■ | ▲ | ● | ●●● | 4.63 |
| 1.01 (1.50) | 4.26 (1.30) | – | | ● | ● | – | ▲ | ● | ▲ | ● | ●●● | 4.67 |
| .67 (1.00) | 3.28 (1.00) | – | | ● | ● | – | ▲ | ○ | ▲ | ● | ●●● | 4.73 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 1.01 (1.50) | 4.26 (1.30) | – | | ● | ● | – | ▲ | ● | ▲ | ● | ●●● | 4.55 |
| .67 (1.00) | 3.28 (1.00) | – | | ● | ● | – | ▲ | ○ | ▲ | ● | ●●● | 4.61 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# E2/000, E2 Medium Classic

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E2/000 - General purpose E-Chain® for a wide range of applications

### E-Chains®, snap-open along the inner radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 1400 | .83 (21) | ø .71 | .59-4.92 (15-125) | 1.10 (28) | 1.12-5.45 (28.5-138.5) | 1.38-7.09 (35-180) | 1.31 (33.3) |
| 2400 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 2600 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-7.63 (66-194) | 2.48-.984 (63-250) | 2.20 (56) |
| 3400 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 2.95-11.81 (75-300) | 2.64 (67) |

### E-Chains®, snap-open along the outer radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 1500 | .83 (21) | ø .71 | .59-4.92 (15-125) | 1.10 (28) | 1.12-5.45 (28.5-138.5) | 1.38-7.09 (35-180) | 1.31 (33.3) |
| 2500 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 2700 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 2.48-.984 (63-250) | 2.20 (56) |
| 3500 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 2.95-11.81 (75-300) | 2.64 (67) |
| 255 | .94 (24) | ø .87 | 1.50-4.06 (38-103) | 1.38 (35) | 2.13-4.69 (54-119) | 2.16-9.84 (55-250) | 1.09 (27.8) |

### Half E-Tubes, snap-open along the inner radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 1450 | .83 (21) | ø .71 | .59-4.92 (15-125) | 1.10 (28) | 1.12-5.45 (28.5-138.5) | 2.95-7.09 (75-180) | 1.31 (33.3) |
| 2450 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.95-9.84 (75-250) | 1.81 (46) |
| 2650 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 3.94-.984 (100-250) | 2.20 (56) |
| 3450 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 4.92-11.81 (125-300) | 2.64 (67) |

### E-Tubes, snap-open along the inner radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 1480 | .83 (21) | ø .71 | .59-4.92 (15-125) | 1.10 (28) | 1.12-5.45 (28.5-138.5) | 1.38-7.09 (35-180) | 1.31 (33.3) |
| 2480 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 2680 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 2.48-.984 (63-250) | 2.20 (56) |
| 3480 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 4.92-11.81 (125-300) | 2.64 (67) |

## E2 Medium Classic - general purpose E-Chain®

### E-Chains®, E2 Medium, closed design

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 200 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 26 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 2.48-9.84 (63-250) | 2.20 (56) |

### E-Chains®, E2 Medium, snap-open along the inner radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 240 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 27i | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 2.48-.984 (63-250) | 2.20 (56) |
| 340 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 2.95-11.81 (75-300) | 2.64 (67) |

### E-Chains®, E2 Medium, snap-open along the outer radius

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 250 | .98 (25) | ø .91 | .98-4.92 (25-125) | 1.38 (35) | 1.61-5.55 (41-141) | 2.16-9.84 (55-250) | 1.81 (46) |
| 27 | 1.38 (35) | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.62 (66-219) | 2.48-.984 (63-250) | 2.20 (56) |
| 350 | 1.77 (45) | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 2.95-11.81 (75-300) | 2.64 (67) |

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Interior separation possibilities... Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom IPA | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.34 (2) | 5.74 (1.75) | 246 (75) | | ● | ● | – | ▲ | ■ | ▲ | ● | ●●● | 4.85 |
| 3.36 (5) | 7.38 (2.25) | 328 (100) | | ● | ● | ● | ▲ | ■ | ▲ | ● | ●●● | 4.103 |
| 5.37 (8) | 9.02 (2.75) | 3.94 (120) | | ● | ● | ● | ▲ | ● | ▲ | ● | ●●● | 4.123 |
| 8.74(13) | 9.84 (3.00) | 492 (150) | | ● | ● | ● | ▲ | ● | ▲ | ● | ●●● | 4.143 |
| 1.34 (2) | 5.74 (1.75) | 246 (75) | | ● | ● | – | ▲2)■ | ■ | ▲ | ● | ●●● | 4.85 |
| 3.36 (5) | 7.38 (2.25) | 328 (100) | | ● | ● | ● | ▲2)■ | ■ | ▲ | ● | ●●● | 4.103 |
| 5.37 (8) | 9.02 (2.75) | 3.94 (120) | | ● | ● | ● | ▲2)■ | ● | ▲ | ● | ●●● | 4.123 |
| 8.74(13) | 9.84 (3.00) | 492 (150) | | ● | ● | ● | ▲ | ● | ▲ | ● | ●●● | 4.143 |
| 1.34 (2) | 5.91 (1.80) | 328 (100) | | ● | ● | ● | ▲ | ● | ▲ | ■ | ●●● | 4.163 |
| 1.34 (2) | 5.74 (1.75) | 246 (75) | | ● | ● | – | ● | ■ | ▲ | ● | ●●● | 4.95 |
| 3.36 (5) | 7.38 (2.25) | 328 (100) | | ● | ● | ▲ | ● | ■ | ▲ | ● | ●●● | 4.113 |
| 5.37 (8) | 9.02 (2.75) | 3.94 (120) | | ● | ● | ● | ● | ● | ▲ | ● | ●●● | 4.133 |
| 8.74(13) | 9.84 (3.00) | 492 (150) | | ● | ● | ● | ▲ | ● | ▲ | ● | ●●● | 4.153 |
| 1.34 (2) | 5.74 (1.75) | 246 (75) | | ● | ● | – | ▲ | ■ | ▲ | ○ | ●●● | 4.95 |
| 3.36 (5) | 7.38 (2.25) | 328 (100) | | ● | ● | ▲ | ▲ | ■ | ▲ | ○ | ●●● | 4.113 |
| 5.37 (8) | 9.02 (2.75) | 3.94 (120) | | ● | ● | ● | ▲ | ● | ▲ | ○ | ●●● | 4.133 |
| 8.74(13) | 9.84 (3.00) | 492 (150) | | ● | ● | ● | ▲ | ● | ▲ | ○ | ●●● | 4.153 |
| 2.69 (4.0) | 6.56 (2.00) | 328 (100) | | ● | ● | ● | – | – | – | – | ●●● | 4.177 |
| 5.38 (8.0) | 7.22 (2.20) | 394 (120) | | ● | ● | ● | – | – | – | – | ●●● | 4.187 |
| | | | | | | | | | | | | |
| 2.69 (4.0) | 6.56 (2.00) | 328 (100) | | ● | ● | ● | – | – | – | – | ●●● | 4.177 |
| 5.38 (8.0) | 7.22 (2.20) | 394 (120) | | ● | ● | ● | – | – | – | – | ●●● | 4.187 |
| 6.72 (10.0) | 8.20 (2.50) | 492 (150) | | ● | ● | ● | – | – | – | – | ●●● | 4.197 |
| 2.69 (4.0) | 6.56 (2.00) | 328 (100) | | ● | ● | ● | – | – | – | – | ●●● | 4.177 |
| 5.38 (8.0) | 7.22 (2.20) | 394 (120) | | ● | ● | ● | – | – | – | – | ●●● | 4.187 |
| 6.72 (10) | 8.20 (2.50) | 492 (150) | | ● | ● | ● | – | – | – | – | ●●● | 4.197 |

1) Conditionally suitable in inner radii
2) ESD-option available from stock. Shipped from stock in 24 hours.

# E2-Tubes

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E2 R100 - Protection against dirt and debris, cost-effective

### E2 R100, Hinged, snap-open on both sides of the inner radius

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **R117** | **.83 (21)** | ø .67 | .79-3.94 (20-100) | 1.10 (28) | 1.26-4.41 (32-112) | 2.48-7.09 (63-180) | 1.20 (30.5) |
| **R157** | **1.57 (40)** | ø 1.46 | 1.57-7.87 (40-200) | 1.97 (50) | 2.20-8.50 (56-216) | 3.94-9.84 (100-250) | 1.81 (46) |
| **R167** | **1.97 (50)** | ø 1.81 | 1.97-9.84 (50-250) | 2.52 (64) | 2.67-10.55 (68-268) | 3.94-11.81 (100-300) | 2.31 (58.8) |

### E2 R100, Hinged, snap-open on both sides of the inner radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **R118** | **.83 (21)** | ø .67 | .79-3.94 (20-100) | 1.10 (28) | 1.26-4.41 (32-112) | 2.48-7.09 (63-180) | 1.20 (30.5) |
| **R158** | **1.57 (40)** | ø 1.46 | 1.57-7.87 (40-200) | 1.97 (50) | 2.20-8.50 (56-216) | 3.94-9.84 (100-250) | 1.81 (46) |
| **R168** | **1.97 (50)** | ø 1.81 | 1.97-9.84 (50-250) | 2.52 (64) | 2.67-10.55 (68-268) | 3.94-11.81 (100-300) | 2.31 (58.8) |

## E2 R - Chip protection at higher speeds and smooth running

### E2 R, Removable lids along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **R48** | **.98 (25)** | ø .87 | .98-5.12 (25-130) | 1.42 (36) | 1.42-5.55 (36-141) | 2.36-9.84 (60-250) | 1.19 (30.3) |
| **R58** | **1.38 (35)** | ø 1.26 | 1.97-7.87 (50-200) | 1.97 (50) | 2.60-8.50 (66-216) | 2.95-9.84 (75-250) | 1.31 (33.3) |
| **R68** | **1.77 (45)** | ø 1.65 | 1.97-9.84 (50-250) | 2.52 (64) | 2.68-10.55 (68-268) | 3.94-11.81 (100-300) | 1.42 (36) |

## RX - Extremely chip repellent E-Tubes

### System RX, Openable along the outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **RX32** | **1.65 (42)** | ø 1.46 | 3.15 (80) | 2.20 (56) | 3.87 (98.4) | 3.15-5.91 (80-150) | 1.26 (32) |
| **RX40** | **2.05 (52)** | ø 1.89 | 3.94 (100) | 2.76 (70) | 4.84 (123) | 3.94-11.81 (100-300) | 1.57 (40) |
| **RX48** | **2.44 (62)** | ø 2.20 | 4.72 (120) | 3.31 (84) | 5.81 (147.5) | 4.72-5.91 (120-150) | 1.89 (48) |
| **RX56** | **2.87 (73)** | ø 2.56 | 5.51 (140) | 3.86 (98) | 6.78 (172.2) | 5.51 (140) | 2.20 (56) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .154 (0.23) | 1.31 (0.40) | – | | – | – | – | ○ | ■ | ● | ■ | | 5.7 |
| .188 (0.28) | 1.80 (0.55) | – | | – | – | – | ▲ | ■ | ● | ● | | 5.13 |
| .168 (0.25) | 1.31 (0.40) | – | | – | – | – | ▲ | ■ | ● | ■ | | 5.21 |
| 1.01 (1.5) | 3.93 (1.20) | – | | ● | – | – | ▲ | ○ | – | ○ | | 5.7 |
| 5.38 (8.0) | 7.38 (2.25) | – | | ● | ▲ | – | ▲ | ○ | – | ○ | | 5.13 |
| 6.72 (10.0) | 8.20 (2.50) | – | | ● | ▲ | – | ▲ | ○ | – | ○ | | 5.21 |
| .67 (1.0) | 4.92 (1.50) | – | | ● | ▲ | – | ▲ | ○ | – | ● | | 5.27 |
| 5.38 (8.0) | 7.55 (2.30) | – | | ● | ● | ● | ▲ | ○ | – | ● | | 5.35 |
| 6.72 (10.0) | 8.20 (2.50) | – | | ● | ● | ● | ▲ | ○ | – | ● | | 5.43 |
| 2.69 (4) | 5.58 (1.7) | – | | – | – | – | ▲ | ○ | – | ● | | 5.57 |
| 4.03 (6) | 5.91 (1.8) | – | | – | – | – | ▲ | ○ | – | ● | | 5.61 |
| 6.05 (9) | 7.25 (2.1) | – | | ● | ● | – | ▲ | ○ | – | ● | | 5.65 |
| 7.39 (11) | 7.54 (2.3) | – | | ● | ● | – | ▲ | ○ | – | ● | | 5.69 |

# System E4-1

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E4-1 - ONE E-Chain® series for almost all applications

### E4-1 E-Chains®, crossbars every link - robust version

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| E4-21 | .83 (21) | ø .71 | 1.18-4.72 (30-120) | 1.10 (28) | 1.73-5.27 (44-134) | 1.50-7.87 (38-200) | 1.20 (30.5) |
| E4-28 | 1.10 (28) | ø .98 | 1.57-11.81 (40-300) | 1.65 (42) | 2.36-12.60 (60-320) | 2.16-9.84 (55-250) | 1.81 (46) |
| E4-32 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| E4-42 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 2.99-16.77 (76-426) | 2.95-13.78 (75-350) | 2.64 (67) |
| E4-56 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.31-24.96 (84-634) | 5.31-19.69 (135-500) | 3.58 (91) |
| E4-80 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 5.91-39.37 (150-1000) | 4.37 (111) |
| E4-112 | 4.41 (112) | ø 3.94 | 1.97-23.62 (50-600) | 5.51 (140) | 3.31-24.96 (84-634) | 7.87-23.62 (200-600) | 5.63 (143) |
| 600 | 4.25 (108) | ø 3.92 | 7.87-23.62 (200-600) | 5.51 (140) | 9.92-25.67 (252-652) | 7.87-39.37 (200-1000) | 5.63 (143) |
| 800 | 7.87 (200) | ø 7.44 | 7.87-23.62 (200-600) | 9.29 (236) | 10.23-25.98 (260-660) | 12.80-39.37 (325-1000) | 9.84 (250) |
| 840 | 8.03 (204) | ø 7.24 | 3.94-22.17 (100-563) | 9.29 (236) | 6.30-24.53 (160-623) | 12.79-39.37 (325-1000) | 9.84 (250) |
| E4-350 | 13.78 (350) | ø 12.40 | 15.75-31.50 (400-800) | 17.72 (450) | 21.26 37.01 (540-940) | 19.69-39.37 (500-1000) | 18.50 (470) |

### H4-1 E-Chains®, crossbars every 2nd link - standard version

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| H4-32 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| H4-42 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 2.99-16.77 (76-426) | 2.95-13.78 (75-350) | 2.64 (67) |
| H4-56 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.31-24.96 (84-634) | 5.31-19.69 (135-500) | 3.58 (91) |
| H4-80 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 5.91-39.37 (150-1000) | 4.37 (111) |
| H4-112 | 4.41 (112) | ø 3.94 | 1.97-23.62 (50-600) | 5.51 (140) | 3.31-24.96 (84-634) | 7.87-23.62 (200-600) | 5.63 (143) |
| 601 | 4.25 (108) | ø 3.82 | 7.87-23.62 (200-600) | 5.51 (140) | 9.92-25.67 (252-652) | 7.87-39.37 (200-1000) | 5.63 (143) |

### R4-1 E-Tubes, Fully enclosed - protection against chips, dust and dirt

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| R4-28 | 1.10 (28) | ø .98 | 1.97-11.81 (50-300) | 1.65 (42) | 2.76-12.60 (70-320) | 2.95-9.84 (75-250) | 1.81 (46) |
| R4-32 | 1.26 (32) | ø 1.10 | 1.97-11.81 (50-300) | 2.13 (54) | 2.87-16.65 (73-323) | 4.92-11.81 (125-300) | 2.20 (56) |
| R4-42 | 1.65 (42) | ø 1.50 | 1.97-11.81 (50-300) | 2.52 (64) | 2.99-16.77 (76-326) | 4.92-13.78 (125-350) | 2.64 (67) |
| R4-56 | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 4.29-19.57 (109-497) | 5.91-19.69 (150-500) | 3.58 (91) |
| R4-80 | 3.15 (80) | ø 2.91 | 7.87-15.75 (200-400) | 4.25 (108) | 9.84-15.75 (250-450) | 7.87-39.37 (200-1000) | 4.37 (111) |
| R4-112 | 4.25 (108) | ø 3.94 | 7.87-19.69 (200-500) | 5.51 (140) | 9.92-21.73 (252-552) | 9.84-39.37 (250-1000) | 5.63 (143) |
| R608 | 4.25 (108) | ø 3.92 | 7.87-15.75 (200-400) | 5.51 (140) | 9.92-17.80 (252-452) | 9.84-39.37 (250-1000) | 5.63 (143) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.69 (4) | 8.20 (2.5) | 394 (120) | | ● | ● | – | ▲2)■ | ▲■ | ▲ | ▲■ | ●●● | 6.9 |
| 6.72 (10) | 8.20 (2.5) | 656 (200) | | ● | ● | ● | ▲2)■ | ▲ | ▲ | ▲■ | ●●● | 6.15 |
| 10.08 (15.0) | 10.83 (3.3) | 656 (200) | | ● | – | ● | ▲2)■ | ▲■ | ▲ | ▲■ | ●●● | 6.25 |
| 24.86 (37.0) | 13.12 (4.0) | 984 (300) | | ● | – | ● | ▲2)■ | ▲ | ▲ | ▲■ | ●●● | 6.37 |
| 42.00 (62.5) | 16.41 (5.0) | 1312 (400) | | ● | – | ● | ▲2)■ | ▲ | ▲ | ▲■ | ●●● | 6.49 |
| 53.76 (80.0) | 20.34 (6.2) | 1312 (400) | | ● | – | ● | ▲2)■ | ▲ | ▲ | ▲■ | ●●● | 6.61 |
| 33.60 (50.0) | 14.76 (4.5) | 1312 (400) | | ● | – | ● | ▲■ | ▲ | ▲ | ▲■ | ●●● | 6.73 |
| 43.68 (65.0) | 22.97 (7.00) | 1476 (450) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.83 |
| 60.48 (90.0) | 26.25 (8.0) | 1,476 (450) | | ● | – | ● | ▲ | ○ | ▲ | ■ | ●●● | 6.91 |
| 60.48 (90.0) | 26.25 (8.0) | 1,476 (450) | | ● | – | – | ▲ | ○ | ▲ | ■ | ●●● | 6.97 |
| 403.18 (600) | 20.34 (6.2) | – | | ● | – | ● | ▲ | – | ▲ | – | ●●● | 6.105 |
| | | | | | | | | | | | | |
| 10.08 (15.0) | 10.83 (3.3) | 656 (200) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.25 |
| 24.86 (37.0) | 13.12 (4.0) | 984 (300) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.37 |
| 42.00 (62.5) | 16.41 (5.0) | 1,312 (400) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.49 |
| 53.76 (80.0) | 20.34 (6.2) | 1,312 (400) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.61 |
| 57.12 (85.0) | 21.33 (6.5) | 1,476 (450) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.73 |
| 43.68 (65.0) | 22.97 (7.00) | 1476 (450) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.83 |
| | | | | | | | | | | | | |
| 6.72 (10.0) | 8.20 (2.5) | 656 (200) | | ● | ● | ● | ▲■ | * | – | ▲■ | ●●● | 6.15 |
| 10.08 (15.0) | 10.83 (3.3) | 656 (200) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.25 |
| 24.86 (37.0) | 13.12 (4.0) | 984 (300) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.37 |
| 42.00 (62.5) | 16.41 (5.0) | 1,312 (400) | | ● | – | ● | ▲■ | * | – | ▲■ | ●●● | 6.49 |
| 53.76 (80.0) | 20.34 (6.2) | 1,312 (400) | | ● | – | ● | ▲■ | ○ | – | ▲■ | ●●● | 6.61 |
| 57.12 (85.0) | 21.33 (6.5) | 1,476 (450) | | ● | – | ● | ▲■ | ▲ | ▲ | ▲■ | ●●● | 6.73 |
| 43.68 (65.0) | 22.97 (7.00) | 1476 (450) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.83 |

# System E4/Light, E4-1 Light

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E4/Light - Light stable and cost-effective

### E-Chains®, crossbars every 2nd link - standard version

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 14040 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 2.99-24.65 (76-626) | 5.31-19.69 (135-500) | 3.58 (91) |
| 14240 | 2.44 (62) | ø 2.20 | 1.97-15.75 (50-400) | 3.31 (84) | 2.99-16.77 (76-426) | 5.31-19.69 (135-500) | 3.58 (91) |
| 14550 | 2.76 (70) | ø 2.44 | 1.97-23.62 (50-600) | 3.86 (98) | 3.03-24.68 (77-627) | 5.91-23.62 (150-600) | 3.58 (91) |
| 15050 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.15-24.80 (80-630) | 5.91-23.62 (150-600) | 3.58 (91) |
| 15250 | 3.39 (86) | ø 2.95 | 1.97-15.75 (50-400) | 4.25 (108) | 3.15-16.93 (80-430) | 5.91-23.62 (150-600) | 3.58 (91) |
| 1640 | 4.41 (112) | ø 3.94 | 1.97-23.62 (50-600) | 5.51 (140) | 3.31-24.96 (84-634) | 7.87-23.62 (200-600) | 5.63 (143) |

### E-Chains®, crossbars every link - robust version

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 14140 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 2.99-24.65 (76-626) | 5.31-19.69 (135-500) | 3.58 (91) |
| 14340 | 2.44 (62) | ø 2.20 | 1.97-15.75 (50-400) | 3.31 (84) | 2.99-16.77 (76-426) | 5.31-19.69 (135-500) | 3.58 (91) |
| 14650 | 2.76 (70) | ø 2.44 | 1.97-23.62 (50-600) | 3.86 (98) | 3.03-24.68 (77-627) | 5.91-23.62 (150-600) | 3.58 (91) |
| 15150 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.15-24.80 (80-630) | 5.91-23.62 (150-600) | 3.58 (91) |
| 15350 | 3.39 (86) | ø 2.95 | 1.97-15.75 (50-400) | 4.25 (108) | 3.15-16.93 (80-430) | 5.91-23.62 (150-600) | 3.58 (91) |

### E-Tubes, Fully enclosed - protection against chips, dust and dirt

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| R18840 | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 3.98-19.25 (101-489) | 5.91-19.69 (150-500) | 3.58 (91) |
| R19050 | 2.76 (70) | ø 2.44 | 2.95-18.19 (75-462) | 3.86 (98) | 4.02-19.25 (102-489) | 7.87-23.62 (200-600) | 3.58 (91) |
| R19850 | 3.15 (80) | ø 2.91 | 2.95-18.19 (75-462) | 4.25 (108) | 4.13-19.41 (105-493) | 7.87-23.62 (200-600) | 3.58 (91) |
| R1608 | 4.41 (112) | ø 3.94 | 7.87-15.75 (200-400) | 5.51 (140) | 9.21-17.09 (234-434) | 9.84-24.96 (250-600) | 5.63 (143) |

## E4-1 Light - High dynamics, light and cost-effective

### E-Chains®, crossbars are swivelable on both sides, openable on the inner and outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| E4-38L | 1.50 (38) | ø 1.34 | 1.97-9.84 (50-250) | 2.13 (54) | 2.60-10.63 (66-270) | 2.48-11.81 (63-300) | 2.20 (56) |
| E4-48L | 1.89 (48) | ø 1.69 | 1.97-9.84 (50-250) | 2.52 (64) | 2.76-10.63 (70-270) | 2.95-13.78 (75-350) | 2.64 (67) |

### E-Tubes, Fully enclosed, lids are swivelable on both sides, openable on the inner and outer radius

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| R4-38L | 1.50 (38) | ø 1.34 | 3.94 (100) | 2.13 (54) | 4.57 (116) | 4.92-11.81 (125-300) | 2.20 (56) |
| R4-48L | 1.89 (48) | ø 1.69 | 2.95-6.89 (75-175) | 2.52 (64) | 3.74-7.68 (95-195) | 4.92-13.78 (125-350) | 2.64 (67) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| 26.88 (40.0) | 13.12 (4.0) | 492 (150) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.117 |
| 26.88 (40.0) | 13.12 (4.0) | 492 (150) | | ● | – | ● | ▲[2]■ | ○ | ▲ | ● | ●●● | 6.129 |
| 36.96 (55.0) | 13.78 (4.2) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.141 |
| 36.96 (55.0) | 15.09 (4.6) | 820 (250) | | ● | – | ● | ▲[2]■ | ○ | ▲ | ● | ●◐● | 6.151 |
| 36.96 (55.0) | 15.09 (4.6) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.165 |
| 33.60 (50.0) | 14.76 (4.5) | 1,312 (400) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●● | 6.175 |
| | | | | | | | | | | | | |
| 26.88 (40.0) | 13.12 (4.0) | 492 (150) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●● | 6.117 |
| 26.88 (40.0) | 13.12 (4.0) | 492 (150) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ◐●● | 6.129 |
| 36.96 (55.0) | 13.78 (4.2) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.141 |
| 36.96 (55.0) | 15.09 (4.6) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●● | 6.151 |
| 36.96 (55.0) | 15.09 (4.6) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.165 |
| | | | | | | | | | | | | |
| 26.88 (40.0) | 13.12 (4.0) | 492 (150) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●● | 6.117 |
| 36.96 (55.0) | 13.78 (4.2) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●◐● | 6.141 |
| 36.96 (55.0) | 15.09 (4.6) | 820 (250) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●● | 6.151 |
| 33.60 (50.0) | 14.76 (4.5) | 1,312 (400) | | ● | – | ● | ▲■ | ○ | ▲ | ● | ●●◐ | 6.175 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 8.73 (13) | 9.02 (2.75) | 262 (80) | | ● | – | ● | ▲ | – | ▲ | ▲■ | ●◐● | 6.191 |
| 17.47 (26) | 12.30 (3.75) | 328 (100) | | ● | – | ● | ▲ | – | ▲ | ▲■ | ●◐● | 6.201 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 8.73 (13) | 9.02 (2.75) | 262 (80) | | ● | – | ● | ▲ | – | ▲ | ▲■ | ●◐● | 6.191 |
| 17.47 (26) | 12.30 (3.75) | 328 (100) | | ● | – | ● | ▲ | – | ▲ | ▲■ | ●◐● | 6.201 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# System E4/4, E4/00

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E4/4 Classic - High stability “on the side” - very long travels

### E-Chains®, crossbars every link

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 2828 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| 3838 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 3.03-16.81 (77-427) | 2.95-13.78 (75-350) | 2.64 (67) |
| 4040 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.39-25.04 (86-636) | 5.31-19.69 (135-500) | 3.58 (91) |
| 5050 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 5.91-39.37 (150-1000) | 3.58 (91) |

### E-Chains®, crossbars every 2nd link

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 2928 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| 3938 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 3.03-16.81 (77-427) | 2.95-13.78 (75-350) | 2.64 (67) |
| 4140 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.39-25.04 (86-636) | 5.31-19.69 (135-500) | 3.58 (91) |
| 5150 | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 5.91-39.37 (150-1000) | 3.58 (91) |

### E-Tubes, Fully enclosed

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| R7728 | 1.26 (32) | ø 1.10 | 1.97-11.81 (50-300) | 2.13 (54) | 2.87-12.72 (73-323) | 4.92-11.81 (125-300) | 2.20 (56) |
| R7838 | 1.65 (42) | ø 1.50 | 1.97-11.81 (50-300) | 2.52 (64) | 3.03-12.87 (77-327) | 4.92-13.78 (125-350) | 2.64 (67) |
| R8840 | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 4.37-19.65 (111-499) | 5.91-19.69 (150-500) | 3.58 (91) |
| R9850 | 3.15 (80) | ø 2.91 | 2.95-18.19 (75-462) | 4.25 (108) | 4.92-20.20 (125-513) | 7.87-39.37 (200-1000) | 3.58 (91) |

## E4/00 Classic - E4 modular system

### E-Chains®, crossbars every link

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 220 | 1.10 (28) | ø .98 | 1.57-11.81 (40-300) | 1.65 (42) | 2.36-12.60 (60-320) | 2.16-9.84 (55-250) | 1.81 (46) |
| 280 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| 380 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 2.99-16.77 (76-426) | 2.95-13.78 (75-350) | 2.64 (67) |
| 400 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.31-24.96 (84-634) | 5.31-19.69 (135-500) | 3.58 (91) |
| 640 | 4.41 (112) | ø 3.94 | 3.43-22.13 (87-562) | 5.51 (140) | 5.47-24.17 (139-614) | 7.87-39.37 (200-1000) | 5.63 (143) |

### E-Chains®, crossbars every 2nd link

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| 290 | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.87-16.65 (73-423) | 2.48-11.81 (63-300) | 2.20 (56) |
| 390 | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 2.99-16.77 (76-426) | 2.95-13.78 (75-350) | 2.64 (67) |
| 410 | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.31-24.96 (84-634) | 5.31-19.69 (135-500) | 3.58 (91) |

### E-Tubes, Fully enclosed

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| R760 | 1.10 (28) | ø .98 | 1.97-11.81 (50-300) | 1.65 (42) | 2.76-12.60 (70-320) | 2.48-9.84 (63-250) | 1.81 (46) |
| R770 | 1.26 (32) | ø 1.10 | 1.97-11.81 (50-300) | 2.13 (54) | 2.87-12.72 (73-323) | 4.92-11.81 (125-300) | 2.20 (56) |
| R780 | 1.65 (42) | ø 1.50 | 1.97-11.81 (50-300) | 2.52 (64) | 2.99-12.83 (76-326) | 4.92-13.78 (125-350) | 2.64 (67) |
| R880 | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 4.29-19.57 (109-497) | 5.91-19.69 (150-500) | 3.58 (91) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.217 |
| 20.16 (30.0) | 12.47 (3.80) | 919 (280) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.229 |
| 33.60 (50.0) | 14.76 (4.50) | 984 (300) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.241 |
| 33.60 (60.0) | 19.69 (6.00) | 1312 (400) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.253 |
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.217 |
| 20.16 (30.0) | 12.47 (3.80) | 919 (280) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.229 |
| 33.60 (50.0) | 14.76 (4.50) | 984 (300) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.241 |
| 33.60 (60.0) | 19.69 (6.00) | 1312 (400) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.253 |
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.217 |
| 20.16 (30.0) | 12.47 (3.80) | 919 (280) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.229 |
| 33.60 (50.0) | 14.76 (4.50) | 984 (300) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.241 |
| 33.60 (60.0) | 19.69 (6.00) | 1312 (400) | | ● | – | ● | ▲■ | ○ | – | ● | ●●● | 6.253 |
| 5.38 (8.0) | 9.02 (2.75) | 656 (200) | | ● | ● | ● | ▲ | ● | – | ■ | ●●● | 6.271 |
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲ | ● | – | ■ | ●●● | 6.279 |
| 20.16 (30.0) | 12.47 (3.80) | 984 (300) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.289 |
| 33.60 (50.0) | 14.76 (4.50) | 1312 (400) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.299 |
| 43.68 (65.0) | 22.97 (7.00) | 1476 (450) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.309 |
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲ | ● | – | ■ | ●●● | 6.279 |
| 20.16 (30.0) | 12.47 (3.80) | 984 (300) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.289 |
| 33.60 (50.0) | 14.76 (4.50) | 1312 (400) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.299 |
| 5.38 (8.0) | 9.02 (2.75) | 656 (200) | | ● | ● | ● | ▲ | ○ | – | ■ | ●●● | 6.271 |
| 6.72 (10.0) | 11.48 (3.50) | 656 (200) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.279 |
| 20.16 (30.0) | 12.47 (3.80) | 984 (300) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.289 |
| 33.60 (50.0) | 14.76 (4.50) | 1312 (400) | | ● | – | ● | ▲ | ○ | – | ■ | ●●● | 6.299 |

# System E3, E6, E6-1, T3

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E3 - Highly dynamic and cleanroom compatible

### E-Chains®, zip-open lids

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| E3-10 | .39 (10) ø .31 | .79-2.36 (20-60) | .59 (15) | 1.26-2.83 (32-72) | .59-1.89 (15-48) | .66 (16.7) |
| E3-15 | .59 (15) ø .51 | .79-2.36 (20-60) | .79 (20) | 1.26-2.83 (32-72) | 1.26-2.95 (32-75) | .66 (16.7) |
| E3-22 | .87 (22) ø .79 | .79-2.36 (20-60) | 1.06 (27) | 1.26-2.83 (32-72) | 1.73-2.95 (44-75) | .66 (16.7) |

## E6 - Extremely low noise, minimum vibration and abrasion, cleanroom suitable

### E-Chains®, crossbars every 2nd link

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| E6-29 | 1.14 (29) ø .98 | 1.18-5.51 (30-140) | 1.38 (35) | 1.81-6.14 (46-156) | 2.17-5.91 (55-150) | .87 (22) |
| E6-35 | 1.38 (35) ø 1.22 | 1.18-5.51 (30-140) | 1.65 (42) | 1.97-6.30 (50-160) | 2.17-3.94 (55-150) | .98 (25) |
| E6-40 | 1.57 (40) ø 1.42 | 1.57-11.81 (40-300) | 2.13 (54) | 2.36-12.60 (60-320) | 2.48-7.87 (63-200) | 1.09 (27.8) |
| E6-52 | 2.05 (52) ø 1.81 | 1.57-11.81 (40-300) | 2.56 (65) | 2.52-12.76 (64-324) | 2.95-9.84 (75-250) | 1.18 (30) |
| E6-62 | 2.44 (62) ø 2.13 | 1.97-15.75 (50-400) | 3.31 (84) | 3.39-17.17 (86-436) | 4.53-13.78 (115-350) | 1.97 (50) |
| E6-80 | 3.15 (80) ø 2.83 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 5.91-17.72 (150-450) | 2.56 (65) |
| E6-80L | 3.15 (80) ø 2.83 | 3.43-21.65 (87-550) | 4.25 (108) | 4.53-22.76 (115-578) | 5.91-17.72 (150-450) | 2.56 (65) |

### E-Tubes, Fully enclosed

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| R6-29 | 1.10 (28) ø .98 | 1.18-4.72 (30-120) | 1.38 (35) | 1.81-5.35 (46-136) | 2.17-5.91 (55-150) | .87 (22) |
| R6-40 | 1.57 (40) ø 1.42 | 1.97-4.92 (50-125)) | 2.13 (54) | 2.76-5.71 (70-145) | 2.48-7.87 (63-200) | 1.09 (27.8) |
| R6-52 | 2.05 (52) ø 1.81 | 1.97-6.89 (50-175) | 2.56 (65) | 2.91-7.83 (74-199) | 2.95-9.84 (75-250) | 1.18 (30) |

## E6-1 - More dynamics, smoother running, easier to open, 2nd generation

### E-Chains®, crossbars removable along both radii

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| E61-29 | 1.14 (29) ø .98 | 1.18-5.51 (30-140) | 1.38 (35) | 1.73-5.67 (44-144) | 2.17-5.91 (55-150) | .87 (22) |

## T3 - Highly dynamic and cleanroom compatible

### E-Chains®, openable from both sides

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| T3-29 | 1.14 (29) ø .98 | 1.18-5.51 (30-140) | 1.38 (35) | 2.17-5.71 (55-145) | 1.50 (38) | .59 (15) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 0.20 (0.30) | 2.46 (0.75) | – | | ● | – | – | ▲ | ■■ | ▲ | ■■ | ●●◐ | 7.11 |
| 0.47 (0.70) | 2.95 (0.90) | – | | ● | ▲ | – | ▲ | ■■ | ▲ | ■■ | ●●◐ | 7.15 |
| 0.57 (0.85) | 3.94 (1.20) | – | | ● | ▲ | – | ▲ | ■■ | ▲ | ■■ | ●●◐ | 7.19 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 2.02 (3.0) | 4.92 (1.50) | - | | ● | ● | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.29 |
| 4.03 (6.0) | 6.23 (1.90) | - | | ● | ● | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.39 |
| 6.72 (10.0) | 9.02 (2.75) | 197 (60)* | | ● | ● | – | ▲ | ■ | ▲ | ■■ | ●●● | 7.45 |
| 10.08 (15.0) | 9.84 (3.00) | 262 (80)* | | ● | ● | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.55 |
| 28.90 (43.0) | 13.12 (4.00) | 328 (100) | | ● | ● | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.65 |
| 37.63 (56.0) | 17.23 (5.25) | - | | ● | – | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.73 |
| 16.80 (25.0) | 8.20 (2.50) | 394 (120) | | ● | – | ● | ▲ | ■ | ▲ | ■■ | ●●● | 7.83 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 2.02 (3.0) | 4.92 (1.50) | - | | ● | – | – | ▲ | ■ | ▲ | ■■ | ●●● | 7.35 |
| 6.72 (10.0) | 9.02 (2.75) | 197 (60)* | | ● | – | – | ▲ | ■ | ▲ | ■■ | ●●● | 7.51 |
| 10.08 (15.0) | 9.84 (3.00) | 262 (80)* | | ● | – | – | ▲ | ■ | ▲ | ■■ | ●●● | 7.61 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 2.35 (3.5) | 4.92 (1.50) | - | | ● | ● | ● | ▲ | ■■ | ▲ | ■■ | ●●● | 7.97 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
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| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| .67 (1.00) | 4.75 (1.45) | – | | ● | ● | ● | ▲ | ■■ | ▲ | ■■ | ●●● | 7.109 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# Triflex® R

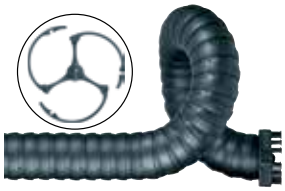
**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E3 - Highly dynamic and cleanroom compatible

### TRC, closed design

| Series | Inner height *hi* in. (mm) ø cable max. in. | ø | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| TRC-30 | .47/.39 (12/10) | ø .39 | .47/.39 (12/10) | 1.36 (34.5) | 1.36 (34.5) | 1.97 (50) | .44 (11.3) |
| TRC-40 | .59/.51 (15/13) | ø .51 | .59/.51 (15/13) | 1.69 (43) | 1.69 (43) | 2.28 (58) | .55 (13.9) |
| TRC-60 | .89/.77 (22.5/19.5) | ø .81 | .89/.77 (22.5/19.5) | 2.56 (65) | 2.56 (65) | 3.43 (87) | .80 (20.4) |
| TRC-70 | 1.10/.94 (28/24) | ø 1.02 | 1.10/.94 (28/24) | 3.19 (81) | 3.19 (81) | 4.33 (110) | 1.01 (25.6) |
| TRC-85 | 1.30/1.10 (33/28) | ø 1.22 | 1.30/1.10 (33/28) | 3.72 (94.5) | 3.72 (94.5) | 5.31 (135) | 1.20 (30.6) |
| TRC-100 | 1.48/1.28 (37.5/32.5) | ø 1.40 | 1.48/1.28 (37.5/32.5) | 4.25 (108) | 4.25 (108) | 5.71 (145) | 1.41 (35.7) |
| TRC-125 | 1.70/1.70 (43.3/43.3) | ø 1.40 | 1.70/1.70 (43.3/43.3) | 5.31 (135) | 5.31 (135) | 7.17 (182) | 1.76 (44.6) |

### TRCF, closed design with snap-lock mechanism



| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TRCF-85 | 1.29 (32.8) | ø 1.18 | 1.29 (32.8) | 3.72 (94.5) | 3.72 (94.5) | 5.31 (135) | 1.22 (31) |
| TRCF-100 | 1.48 (37.5) | ø 1.36 | 1.48 (37.5) | 4.25 (108) | 4.25 (108) | 5.71 (145) | 1.36 (34.5) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

### TRE, “E-Z” design for fast installation of cables and hoses

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TRE-30 | .47/.39 (12/10) | ø .39 | .47/.39 (12/10) | 1.36 (34.5) | 1.36 (34.5) | 1.97 (50) | .44 (11.3) |
| TRE-40 | .59/.51 (15/13) | ø .51 | .59/.51 (15/13) | 1.69 (43) | 1.69 (43) | 2.28 (58) | .55 (13.9) |
| TRE-60 | .89/.77 (22.5/19.5) | ø .81 | .89/.77 (22.5/19.5) | 2.56 (65) | 2.56 (65) | 3.43 (87) | .80 (20.4) |
| TRE-70 | 1.10/.94 (28/24) | ø 1.02 | 1.10/.94 (28/24) | 3.19 (81) | 3.19 (81) | 4.33 (110) | 1.01 (25.6) |
| TRE-85 | 1.30/1.10 (33/28) | ø 1.22 | 1.30/1.10 (33/28) | 3.72 (94.5) | 3.72 (94.5) | 5.31 (135) | 1.20 (30.6) |
| TRE-100 | 1.48/1.28 (37.5/32.5) | ø 1.40 | 1.48/1.28 (37.5/32.5) | 4.25 (108) | 4.25 (108) | 5.71 (145) | 1.41 (35.7) |
| TRE-125 | 1.70/1.70 (43.3/43.3) | ø 1.40 | 1.70/1.70 (43.3/43.3) | 5.31 (135) | 5.31 (135) | 7.17 (182) | 1.76 (44.6) |

### TRL, light version with “E-Z” design

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TRL-30 | .47/.39 (12/10) | ø .39 | .47/.39 (12/10) | 1.36 (34.5) | 1.36 (34.5) | 1.97 (50) | .44 (11.3) |
| TRL-40 | .59/.51 (15/13) | ø .51 | .59/.51 (15/13) | 1.77 (45) | 1.77 (45) | 2.28 (58) | .55 (13.9) |
| TRL-60 | .89/.77 (22.5/19.5) | ø .83 | .89/.77 (22.5/19.5) | 2.56 (65) | 2.56 (65) | 3.43 (87) | .80 (20.4) |
| TRL-70 | 1.10/.94 (28/24) | ø 1.02 | 1.10/.94 (28/24) | 3.19 (81) | 3.19 (81) | 4.33 (110) | 1.01 (25.6) |
| TRL-100 | 1.48/1.28 (37.5/32.5) | ø 1.40 | 1.48/1.28 (37.5/32.5) | 4.25 (108) | 4.25 (108) | 5.71 (145) | 1.41 (35.7) |
| | | | | | | | |

### TRLF, light version with snap-lock mechanism

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| TRLF-65 | .96 (24.4) | ø .87 | .96 (24.4) | 2.76 (70.2) | 2.76 (70.2) | 3.94 (100) | .91 (23.1) |
| TRLF-85 | 1.29 (32.8) | ø 1.18 | 1.29 (32.8) | 3.72 (94.5) | 3.72 (94.5) | 5.31 (135) | 1.22 (31) |
| TRLF-100 | 1.48 (37.5) | ø 1.40 | 1.48 (37.5) | 4.25 (108) | 4.25 (108) | 5.71 (145) | 1.36 (34.5) |
| | | | | | | | |
| | | | | | | | |

Interior separation possibilities...

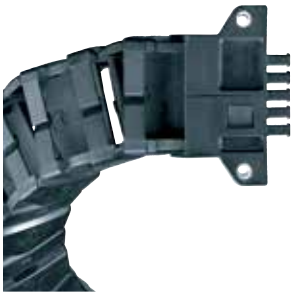
| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | ▲2) | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | ▲2) | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | ▲2) | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●●● | 8.15 |
| | | | | ● | – | – | ▲ | ○ | ● | ● | ●●● | 8.15 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.17 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.17 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| – | – | – | | | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| | | | | ● | – | – | – | ○ | ● | ● | ●●● | 8.19 |
| – | – | – | | | – | – | 1) | ○ | ● | ● | ●●● | 8.21 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.21 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.21 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.21 |
| – | – | – | | ● | – | – | 1) | ○ | ● | ● | ●●● | 8.21 |
| | | | | | | | | | | | | |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.23 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.23 |
| – | – | – | | ● | – | – | – | ○ | ● | ● | ●●● | 8.23 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# E-Z Triflex®, Triflex®

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## E-Z Triflex® - For simple 3D applications, easy filling from 2 sides

### "E-Z" design for fast installation of cables and hoses



| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| E331-25 | .98 (25) | ø .35 | .98 (25) | 1.34 (34) | 1.34 (34) | 1.89-7.87 (48-200) | .57 (14.5) |
| E331-32 | 1.26 (32) | ø .47 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| E331-50 | 1.97 (50) | ø .83 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| E331-75 | 2.95 (75) | ø 1.30 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |
| E332-25 | .98 (25) | ø .35 | .98 (25) | 1.34 (34) | 1.34 (34) | 1.89-7.87 (48-200) | .57 (14.5) |
| E332-32 | 1.26 (32) | ø .47 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| E332-50 | 1.97 (50) | ø .83 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| E332-75 | 2.95 (75) | ø 1.30 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |
| E333-25 | .98 (25) | ø .35 | .98 (25) | 1.34 (34) | 1.34 (34) | 1.89-7.87 (48-200) | .57 (14.5) |
| E333-32 | 1.26 (32) | ø .47 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| E333-50 | 1.97 (50) | ø .83 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| E333-75 | 2.95 (75) | ø 1.30 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |

## Triflex® - For simple, closed 3D applications

### Closed design

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 331-16 | .63 (16) | ø .55 | .63 (16) | 1.02 (26) | 1.02 (26) | 1.50-3.94 (38-100) | .52 (13.3) |
| 331-32 | 1.26 (32) | ø 1.10 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| 331-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| 331-75 | 2.95 (75) | ø 2.64 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |
| 332-16 | .63 (16) | ø .55 | .63 (16) | 1.02 (26) | 1.02 (26) | 1.50-3.94 (38-100) | .52 (13.3) |
| 332-32 | 1.26 (32) | ø 1.10 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| 332-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| 332-75 | 2.95 (75) | ø 2.64 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |
| 333-16 | .63 (16) | ø .55 | .63 (16) | 1.02 (26) | 1.02 (26) | 1.50-3.94 (38-100) | .52 (13.3) |
| 333-32 | 1.26 (32) | ø 1.10 | 1.26 (32) | 1.97 (50) | 1.97 (50) | 2.95-9.84 (75-250) | .98 (25) |
| 333-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| 333-75 | 2.95 (75) | ø 2.64 | 2.95 (75) | 3.78 (96) | 3.78 (96) | 5.51-11.81 (140-300) | 1.42 (36) |

### Snap-open

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 351-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| 352-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| 353-50 | 1.97 (50) | ø 1.77 | 1.97 (50) | 2.68 (68) | 2.68 (68) | 3.94-9.84 (100-250) | 1.18 (30) |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom IPA | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.64 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.64 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.64 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.64 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.65 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.65 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.65 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.65 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.66 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.66 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.66 |
| – | – | – | | ● | – | – | ▲ | ○ | ● | ● | ●◐○ | 8.66 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| – | – | – | | – | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.77 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.77 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.77 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.77 |
| – | – | – | | – | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.78 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.78 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.78 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.78 |
| – | – | – | | – | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.79 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.79 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.79 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●◐○ | 8.79 |
| | | | | | | | | | | | | |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●●● | 8.77 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●●● | 8.78 |
| – | – | – | | ● | – | – | ▲ | ○ | ▲ | ○ | ●●● | 8.79 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

# TwisterChain, TwisterBand

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## TwisterChain New Generation - Circular and spiral movements

### Openable from both sides along the inner radius

| Series | Inner height *hi* in. (mm) ø cable max. in. | | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| TC32 | **1.26 (32)** | ø 1.10 | 3.44-5.91 (87.5-150) | 2.13 (54) | 4.27-6.73 (108.5-171) | 3.94-9.84 (100-250) | 2.20 (56) |
| TC42 | **1.65 (42)** | ø 1.50 | 3.44-5.91 (87.5-150) | 2.52 (64) | 4.35-8.78 (110.5-223) | 3.94-9.84 (100-250) | 2.64 (67) |
| TC56 | **2.20 (56)** | ø 1.97 | 4.92-7.87 (125-200) | 3.31 (84) | 6.10-9.06 (155-230) | 5.91-15.75 (150-400) | 3.58 (91) |

## TwisterChain Classic - First Generation for circular and spiral movements

### Snap-open with film-hinge or can be opened with “E-Z” design

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2208 | **1.10 (28)** | ø .98 | 2.07-4.43 (52.5-112.5) | 1.65 (42) | 3.15-5.51 (80-140) | 2.17-5.91 (55-150) | 1.73 (44) |
| 2808 | **1.26 (32)** | ø 1.14 | 1.97-5.91 (50-150) | 2.13 (54) | 3.19-7.13 (81-181) | 3.94-9.84 (100-250) | 2.20 (56) |
| 3808 | **1.65 (42)** | ø 1.53 | 1.97-7.87 (50-200) | 2.52 (64) | 3.35-9.25 (85-235) | 3.94-9.84 (100-250) | 2.64 (67) |
| 4008 | **2.20 (56)** | ø 2.07 | 1.97-7.87 (50-200) | 3.31 (84) | 3.66-9.57 (93-243) | 5.91-15.75 (150-400) | 3.58 (91) |

## Twisterband (7000° rotation**) - Rotary movements in minimum space

### Snap-open with film-hinge or can be opened with “E-Z” design

| | | | | | | *R min. R max.* | |
|---|---|---|---|---|---|---|---|
| TB12-23-09 | .36 (9) | ø .28 | .91 (23) | 1.65 (42) | 3.15-5.51 (80-140) | .94 - 1.38 (24 - 35) | – |
| TB20-44-12 | .47 (12) | ø .36 | 1.73 (44) | 2.13 (54) | 3.19-7.13 (81-181) | 1.34 - 2.24 (34 - 57) | – |
| TB20-44-18 | .71 (18) | ø .55 | 1.73 (44) | 2.52 (64) | 3.35-9.25 (85-235) | 1.34 - 2.24 (34 - 57) | – |
| TB30-75-22 | .87 (22) | ø .67 | 2.95 (75) | 3.31 (84) | 3.66-9.57 (93-243) | 1.73 - 3.03 (44 - 77) | – |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) 180° | 360° | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2.69 (4) | 1.34 (2) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.93 |
| 4.03 (6) | 2.42 (3.6) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.95 |
| 5.38 (8) | 3.36 (5) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.97 |
| 1.01 (1.5) | .67 (1.0) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.115 |
| 1.34 (2.0) | .67 (1.0) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.116 |
| 2.02 (3.0) | 1.21 (1.8) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.117 |
| 2.68 (4.0) | 1.68 (2.5) | – | – | | ● | ● | ● | ▲ | ○ | ▲ | ● | ●●◐ | 8.119 |
| ≈.54 (0.8) | ≈.40 (0.6) | – | – | | – | – | – | ○ | ▲ | ○ | ● | ●●◐ | 8.138 |
| ≈.84 (1.25) | ≈.67 (1.0) | – | – | | – | – | – | ○ | ▲ | ○ | ● | ●●◐ | 8.138 |
| ≈.84 (1.25) | ≈.67 (1.0) | – | – | | ● | – | – | ○ | ▲ | ○ | ● | ●●◐ | 8.138 |
| ≈1.14 (1.7) | ≈.87 (1.3) | – | – | | ● | – | – | ○ | ▲ | ○ | ● | ●●◐ | 8.138 |

# Guide Troughs - For long travels

**Legend**
- ● Aluminum, seawater resistant
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

## Super Aluminum Trough - Basic version, for general use

### Openable from both sides along the inner radius

| Series/ Product | Outer height Trough side part in. (mm) | Zipper Chains | Series E2 mini | Series E2/000 *Conditionally suitable in inner radii | System E2 Tubes | System E4-1 |
|---|---|---|---|---|---|---|
| 970-30-SL / 970-31-SL | 3.03 (77) | 15 | 10/B15 | – | – | – |
| 970-30-SL / 970-32-SL | 3.03 (77) | – | – | 1400*/1450*/1480*/1500 | – | – |
| 971-30-SL / 971-31-SL | 3.43 (87) | – | – | 2400*/2450*/2480*/2500/255 | – | – |
| 972-02-30-SL / 972-02-31-SL | 4.61 (117) | – | – | – | – | E4-28/R4-28 |
| 972-30-SL / 972-31-SL | 4.61 (117) | – | – | – | – | E4-32/H4-32/R4-32 |
| 972-30-SL / 972-32-SL | 4.61 (117) | – | – | 2600*/2650*/2680*/2700 | R58 | – |
| 973-30-SL / 973-31-SL | 5.67 (144) | – | – | 3400*/3450*/3480*/3500 | R68 | E4-42/H4-42/R4-42 |
| 974-30-SL / 974-31-SL | 7.24 (184) | – | – | – | – | E4-56/H4-56/R4-56 |
| 975-30-SL / 975-31-SL | 9.29 (236) | – | – | – | – | – |

## Super Aluminum Trough - Heavy-duty version, for heavy-duty use

### Snap-open with film-hinge or can be opened with “E-Z” design

| | | | | | | |
|---|---|---|---|---|---|---|
| 971-30-SL / 971-31-SL | 3.43 (87) | – | – | 2400*/2450*/2480*/2500/255 | R48 | – |
| 972-02-30-SL / 972-02-31-SL | 4.61 (117) | – | – | – | – | E4-28/R4-28 |
| 972-30-SL / 972-31-SL | 4.61 (117) | – | – | – | – | E4-32/H4-32/R4-32 |
| 972-30-SL / 972-32-SL | 4.61 (117) | – | – | 2600*/2650*/2680*/2700 | R58 | – |
| 973-30-SL / 973-31-SL | 5.67 (144) | – | – | 3400*/3450*/3480*/3500 | R68 | E4-42/H4-42/R4-42 |
| 974-30-SL / 974-31-SL | 7.24 (184) | – | – | – | – | E4-56/H4-56/R4-56 |
| 975-30-SL / 975-31-SL | 9.29 (236) | – | – | – | – | – |

## Steel Trough - For harsh environments

### Snap-open with film-hinge or can be opened with “E-Z” design

| | | | | | | |
|---|---|---|---|---|---|---|
| 92-30 / 92-01 | 2.76 (70) | – | – | 2480 | – | – |
| 95-30 / 92-01 | 3.94 (100) | – | – | 2680 | R58 | – |
| 96-30 / 92-01 | 3.94 (100) | – | – | – | – | E4-28/R4-28 |
| 98-30 / 92-01 | 5.12 (130) | – | – | – | – | E4-32/H4-32/R4-32 |
| 93-30 / 93-01 | 5.12 (130) | – | – | 3480 | R68 | E4-42/H4-42/R4-42 |
| 94-30 / 93-01 | 6.69 (170) | – | – | – | – | E4-56/H4-56/R4-56 |
| 94-14450-30/94-14450-31 | 6.69 (170) | – | – | – | – | – |
| 99-30 / 93-01 | 6.69 (170) | – | – | – | – | E4-80 |
| 97-30 / 93-01 | 11.81 (300) | – | – | – | – | E4-112/H4-112/R4-112 |
| 90-30 / 90-20 | 18.90 (480) | – | – | – | – | – |

### Steel guide trough - One-piece, U-shaped, special solution for Series 10, B15, 15

| | | | | | | |
|---|---|---|---|---|---|---|
| 91-10 to 91-71 | 1.89 (48) | – | – | – | – | – |
| | | | | | | |
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| | | | | | | |

| System E4/Light | System E4-1 Light | System E4/4 | System E4/00 | System E6 please consult igus® for long travels | Side part material See legend | Price index | Page |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | | | | | | | |
| – | – | – | | – | ● | ●◐○ | 9.17 |
| – | – | – | | – | ● | ●◐○ | 9.19 |
| – | – | – | | E6-29/R6-29 | ● | ●◐○ | 9.21 |
| – | – | 2828/2928/R7728 | 220/R760 | E6-35 | ● | ●◐○ | 9.23 |
| – | E4-38L/R4-38L | 2828/2928/R7728 | 280/290/R770 | E6-40/R6-40 | ● | ●◐○ | 9.25 |
| – | – | – | – | – | ● | ●◐○ | 9.27 |
| – | E4-38L/R4-38L | 3838/3938/R7838 | 380/390/R780 | E6-52/R6-52 | ● | ●◐○ | 9.29 |
| 14040/14140/R18840/14240/14340 | – | 4040/4140/R8840 | 400/410/R880 | E6-62 | ● | ●◐○ | 9.31 |
| 15050/15150/R19850/15250/15350 | – | 5050/5150/R9850 | | E6-80 | ● | ●◐○ | 9.35 |
| | | | | | | | |
| | | | | | | | |
| – | – | – | | E6-29/R6-29 | ● | ●◐○ | 9.21 |
| – | – | | 220/R760 | E6-35 | ● | ●◐○ | 9.23 |
| – | E4-38L/R4-38L | 2828/2928/R7728 | 280/290/R770 | E6-40/R6-40 | ● | ●◐○ | 9.25 |
| – | – | – | – | – | ● | ●◐○ | 9.27 |
| – | E4-38L/R4-38L | 3838/3938/R7838 | 380/390/R780 | E6-52/R6-52 | ● | ●◐○ | 9.29 |
| 14040/14140/R18840/14240/14340 | – | 4040/4140/R8840 | 400/410/R880 | E6-62 | ● | ●◐○ | 9.31 |
| 15050/15150/R19850/15250/15350 | – | 5050/5150/R9850 | – | E6-80 | ● | ●◐○ | 9.35 |
| | | | | | | | |
| | | | | | | | |
| | – | – | – | E6-29/R6-29 | ○ ■ | ●◐○ | 9.43 |
| | – | – | – | – | ○ ■ | ●◐○ | 9.45 |
| | – | – | 220/R760 | E6-35 | ○ ■ | ●◐○ | 9.47 |
| | – | 2828/2928/R7728 | 280/290/R770 | E6-40/R6-40 | ○ ■ | ●◐○ | 9.49 |
| | – | 3838/3938/R7838 | 380/390/R780 | E6-52/R6-52 | ○ ■ | ●◐○ | 9.51 |
| 14040/14140/R18840/14240/14340 | – | 4040/4140/R8840 | 400/410/R880 | E6-62 | ○ ■ | ●◐○ | 9.53 |
| 14550/14650/R19050 | – | – | – | – | ○ ■ | ●◐○ | 9.55 |
| 15050/15150/R19850 | – | 5050/5150/R9850 | – | E6-80 | ○ ■ | ●◐○ | 9.57 |
| 1640/R1608 | – | – | 600/601/R608/640 | – | ○ ■ | ●◐○ | 9.59 |
| – | – | – | 800/840 | – | ○ ■ | ●◐○ | 9.61 |
| | | | | | | | |
| – | – | – | – | – | ○ ■ | ●◐○ | 9.42 |
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# Guide Troughs - For long travels

**Legend**
- ❏ Steel, powder coated
- ○ Galvanized steel
- ▲ Galvanized steel/plastic
- ■ Stainless steel upon request

## Support tray tool kit - For support of the lower run

### Support tray - Type 01

| Series/ Product | Outer height Trough side part in. (mm) | Zipper Chains | Series E2 mini | Series E2/000 *Conditionally suitable in inner radii | System E2 Tubes | System E4-1 |
|---|---|---|---|---|---|---|
| S9-010/011-05- | 43 | – | – | 2500.../2700.../ | – | E4.21/E4.28/E4.32 |
| S9-010/011-07- | 43 | – | – | 2500.../2700.../ | – | E4.21/E4.28/E4.32 |
| S9-010/011-10- | 43 | – | – | 2500.../2700.../ | – | E4.21/E4.28/E4.32 |
| S9-010/011-15- | 43 | – | – | 2700.../ | – | E4.28/E4.32 |

### Support tray - Type 02

| | | | | | | |
|---|---|---|---|---|---|---|
| S9-020/021-10- | 53 | – | – | 3400.../ | – | E4.42/E4.56/E4.80 |
| S9-020/021-15- | 53 | – | – | 3400.../ | – | E4.42/E4.56/E4.80 |
| S9-020/021-20- | 53 | – | – | 3400.../ | – | E4.42/E4.56/E4.80 |
| S9-020/021-25- | 53 | – | – | 3400.../ | – | E4.42/E4.56/E4.80 |

## Guidefast - Energy supply for crane girders

### Economical energy supply for crane girders and indoor cranes

| | | | | | | |
|---|---|---|---|---|---|---|
| GF91-30/31-025- | 113 | – | – | 1500 | – | – |
| GF91-30/31-050- | 113 | – | – | 500 | – | – |
| GF92-30/31-05- | 113 | – | – | 2500/255 | – | – |
| GF92-30/31-07- | 113 | – | – | 2500/255 | – | – |
| GF92-30/31-10- | 113 | – | – | 2500/255 | – | – |
| GF95-30/31-05- | 113 | – | – | 2700 | – | – |
| GF95-30/31-07- | 113 | – | – | 2700 | – | – |
| GF95-30/31-10- | 113 | – | – | 2700 | – | – |

## Guidelite - Realize long travels up to (150 m), quick and cost-effective

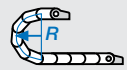
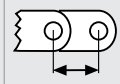
### Efficient long travel set

| | | | | | | |
|---|---|---|---|---|---|---|
| 9GL-64-50-450-XX | 145 | – | – | 2500 / 2700 / 3500 | – | E4.21/E4.28/E4.32 |
| 9GL-64-50-LLL | 145 | – | – | 1500/ 2500 / 2700 / 3500 | – | E4.21/E4.28/E4.32 |

| System E4/Light | System E4-1 Light | System E6/E6-1 please consult igus® for long travels | Side part material See legend | Price index | Page |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| 14040/14240/14550/15050/15250 | E4.38L/R4.38L | E6.29/E61.29/E6.35/E6.40 | ❑ | ●○○ | 9.65 |
| 14040/14240/14550/15050/15250 | E4.38L/R4.38L | E6.29/E61.29/E6.35/E6.40 | ❑ | ●○○ | 9.65 |
| 14040/14240/14550/15050/15250 | E4.38L/R4.38L | E6.29/E61.29/E6.35/E6.40 | ❑ | ●○○ | 9.65 |
| 14040/14240/14550/15050/15250 | E4.38L/R4.38L | E6.40 | ❑ | ●○○ | 9.65 |
| | | | | | |
| | | | | | |
| E4.38L/R4.38L | E4.38L/R4.38L | E6.52/E6.62/E6.80 | ❑ | ●○○ | 9.67 |
| E4.38L/R4.38L | E4.38L/R4.38L | E6.52/E6.62/E6.80 | ❑ | ●○○ | 9.67 |
| E4.38L/R4.38L | E4.38L/R4.38L | E6.52/E6.62/E6.80 | ❑ | ●○○ | 9.67 |
| E4.38L/R4.38L | E4.38L/R4.38L | E6.52/E6.62/E6.80 | ❑ | ●○○ | 9.67 |
| | | | | | |
| | | | | | |
| | | | | | |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| – | – | – | O | ●○○ | 9.72 |
| | | | | | |
| | | | | | |
| | | | | | |
| – | – | – | ▲ | ◐○○ | 9.76 |
| – | – | – | ▲ | ◐○○ | 9.78 |
| | | | | | |
| | | | | | |
| | | | | | |

# E-Chains® for long travels - E4/4HD, P4, RoI

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

| Series | Inner height *hi* in. (mm) ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|
| | | | | |  |  |

## E4/4HD Heavy-Duty - For extremely high additional fill weights on long travels

### E-Chains®, Heavy-Duty, crossbars every link - extra robust version

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4040HD | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 4.09-25.75 (104-654) | 5.31-11.81 (135-300) | 3.58 (91) |
| 5050HD | 3.15 (80) | ø 2.91 | 1.97-23.62 (50-600) | 4.25 (108) | 4.33-25.98 (110-660) | 7.87-19.69 (200-500) | 3.58 (91) |

### E-Chains®, Heavy-Duty, fully enclosed-protection against chips, dust and dirt - extra robust version

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8840HD | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 5.08-20.31 (129-516) | 5.91-11.81 (150-300) | 3.58 (91) |
| 9850HD | 3.15 (80) | ø 2.91 | 2.95-18.19 (75-462) | 4.25 (108) | 5.31-20.55 (135-522) | 7.87-19.69 (200-500) | 3.58 (91) |

## P4 profile RoI E-Chain® - 57% less energy consumption

### P4 profile RoI E-Chain®, crossbars every link

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| P4-32 | 1.26 (32) | ø 1.10 | 3.94-7.87 (100-200) | 2.13 (54) | 5.20-9.13 (132-232) | 5.91-9.84 (150-250) | 2.20 (56) |
| P4-42 | 1.65 (42) | ø 1.50 | 3.94-7.87 (100-200) | 2.52 (64) | 6.06-10.00 (154-254) | 3.94-13.78 (100-350) | 2.64 (67) |
| P4-56 | 2.20 (56) | ø 1.97 | 7.36-15.75 (187-400) | 3.31 (84) | 10.12-18.50 (257-470) | 9.84-13.78 (250-350) | 3.58 (91) |
| P4-80 | 3.15 (80) | ø 2.83 | 7.36-15.75 (187-400) | 4.25 (108) | 10.35-18.74 (263-476) | 9.84-13.78 (250-350) | 3.94 (100) |

## RoI E-Chain® - Long travels up to 2,624 ft. (800 m), rolling instead of gliding

### E-Chains®, crossbars every link

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2828R | 1.26 (32) | ø 1.10 | 1.97-15.75 (50-400) | 2.13 (54) | 2.91-16.69 (74-424) | 4.92-11.81 (125-300**) | 2.20 (56) |
| 3838R | 1.65 (42) | ø 1.50 | 1.97-15.75 (50-400) | 2.52 (64) | 3.03-16.81 (77-427) | 5.91-13.78 (150-350**) | 2.64 (67) |
| 4040R | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 3.39-25.04 (86-636) | 7.87-15.75 (200-400**) | 3.58 (91) |
| 5050R | 3.15 (80) | ø 2.83 | 1.97-23.62 (50-600) | 4.25 (108) | 3.94-25.59 (100-650) | 9.84-19.69 (250-500**) | 3.94 (100) |

### E-Tubes, fully enclosed - protection against chips, dust and dirt

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7728R | 1.26 (32) | ø 1.10 | 1.97-11.81 (50-300) | 2.13 (54) | 2.91-12.76 (74-324) | 5.91-11.81 (150-300) | 2.20 (56) |
| 7838R | 1.65 (42) | ø 1.50 | 1.97-11.81 (50-300) | 2.52 (64) | 3.03-16.81 (77-427) | 7.87-13.78 (200-350) | 2.64 (67) |
| 8840R | 2.20 (56) | ø 1.97 | 2.95-18.19 (75-462) | 3.31 (84) | 4.37-19.65 (111-499) | 11.81-15.75 (300-400) | 3.58 (91) |
| 9850R | 3.15 (80) | ø 2.83 | 2.95-18.19 (75-462) | 4.25 (108) | 4.92-20.20 (125-513) | 11.81-19.69 (300-500) | 3.94 (100) |

## RoI E-Chain® RHD Heavy-Duty - Particularly high additional loads

### E-Chains®, crossbars every link

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 4040RHD | 2.20 (56) | ø 1.97 | 1.97-23.62 (50-600) | 3.31 (84) | 4.09-25.75 (104-654) | 11.81-15.75 (300-400) | 3.58 (91) |
| 5050RHD | 3.15 (80) | ø 2.83 | 1.97-23.62 (50-600) | 4.25 (108) | 4.33-25.98 (110-660) | 9.84-19.69 (250-500) | 3.94 (100) |

### E-Tubes, fully enclosed - protection against chips, dust and dirt

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8840RHD | 2.20 (56) | ø 1.97 | 2.24-4.92 (57-125) | 3.31 (84) | 5.08-20.31 (129-516) | 11.81-15.75 (300-400) | 3.58 (91) |
| 9850RHD | 3.15 (80) | ø 2.83 | 2.87-5.55 (73-141) | 4.25 (108) | 5.31-20.55 (135-522) | 11.81-19.69 (300-500) | 3.94 (100) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.75 (16) | – | > 1,148 (350) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.83 |
| 40.32 (60) | – | > 1,641 (500) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.93 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.75 (16) | – | > 1,148 (350) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.83 |
| 40.32 (60) | – | > 1,641 (500) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.93 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 4.03 (6) | – | > 1,641 (500) | | ● | ● | ● | ○ | ▲ | ▲ | – | | 9.107 |
| 4.70 (7) | – | > 1,969 (600) | | ● | ● | ● | ○ | ▲ | ▲ | – | | 9.111 |
| 8.74 (13) | – | > 2,625 (800) | | ● | ● | ● | ○ | ▲ | ▲ | – | | 9.115 |
| 20.16 (30) | – | > 2,625 (800) | | ● | ● | ● | ○ | ▲ | ▲ | – | | 9.119 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 4.03 (6) | – | > 820 (250) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.127 |
| 4.70 (7) | – | > 1,082 (330) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.129 |
| 8.74 (13) | – | > 1,641 (500) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.131 |
| 10.75 (16) | – | > 1,969 (600) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.135 |
| | | | | | | | | | | | | |
| 4.03 (6) | – | > 820 (250) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.127 |
| 4.70 (7) | – | > 1,082 (330) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.129 |
| 8.74 (13) | – | > 1,641 (500) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.131 |
| 10.75 (16) | – | > 1,969 (600) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.135 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.75 (16) | – | > 1,969 (600) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.133 |
| 20.16 (30) | – | > 2,625 (800) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.137 |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| 10.75 (16) | – | > 1,969 (600) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.133 |
| 20.16 (30) | – | > 2,625 (800) | | ● | ● | ● | ○ | ○ | ▲ | – | | 9.137 |
| | | | | | | | | | | | | |

# E-Chains® for long travels - AUTO-GLIDE

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

## AUTO-GLIDE - Save on long travels, self-guiding E-Chains®

### Version 01 - for E4-1, self-guiding E-Chains®

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **E4-32AG** | **1.26 (32)** | ø 1.10 | 4.41-10.31 (112-262) | 2.12 (54) | 5.35-11.26 (136-286) | 3.94-11.81 (100-300) | 2.20 (56) |
| **E4-42AG** | **1.65 (42)** | ø 1.50 | 4.41-10.31 (112-262) | 2.52 (64) | 5.47-11.38 (139-289) | 4.92-13.78 (125-350) | 2.64 (67) |
| **E4-56AG** | **2.20 (56)** | ø 1.97 | 5.91-9.84 (150-250) | 3.31 (84) | 7.24-11.18 (184-284) | 5.91-19.69 (150-500) | 3.58 (91) |

### Version 02 - for E2/000, self-guiding E-Chains®

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **2400AG** | **.98 (25)** | ø .91 | 2.24-3.03 (57-77) | 1.38 (35) | 2.87-3.66 (73-93) | 2.95-9.84 (075-250) | 1.81 (46) |
| **2600AG** | **1.38 (35)** | ø 1.26 | 1.97-2.95 (50-75) | 1.97 (50) | 2.60-3.58 (66-91) | 2.95-9.84 (075-250) | 2.20 (56) |
| **3400AG** | **1.77 (45)** | ø 1.65 | 2.95-3.94 (75-100) | 2.52 (64) | 3.74-4.72 (95-120) | 3.94-11.81 (100-300) | 2.64 (67) |

### Version 03 - for E-Z Chain, self-guiding E-Chains®

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **EA16** | **1.26 (32)** | ø 1.12 | 1.89 (48) | 1.54 (39) | 2.36 (60) | 2.56-3.94 (065-100) | 1.20 (30.5) |
| **EA25** | **.98 (25)** | ø .89 | 1.97 (50) | .99 (25.2) | 2.36 (60) | 2.95-3.94 (075-100) | .98 (25) |

### Version 04 - with special glide elements, self-guiding E-Chains®

| Series | Inner height *hi* in. (mm) | ø cable max. in. | Inner width *Bi* in. (mm) from - to | Outer height *ha* in. (mm) | Outer width *Ba* in. (mm) from - to | Bending radii *R* in. (mm) from - to | Pitch in. (mm) |
|---|---|---|---|---|---|---|---|
| **2400/2500.AG** | **.98 (25)** | ø .91 | 2.24-4.92 (57-125) | 1.38 (35) | 2.87-5.55 (73-141) | 2.17-9.84 (055-250) | 1.81 (46) |
| **2600/2700.AG** | **1.38 (35)** | ø 1.26 | 1.97-9.84 (50-250) | 1.97 (50) | 2.59-7.64 (66-194) | 2.95-9.84 (075-250) | 2.20 (56) |

Interior separation possibilities...

| Unsupported fill weight max lbs/ft (kg/m) | Unsupported length max ft. (m) | Long travel max ft. (m) | Opening design | Separators | Full-width shelves | Shelves | EDS/ATEX | Cleanroom | UL-V2 | Low noise | Price index | Page |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.36-4.70 (5.0-7.0**) | – | 196.9 (60) | | ● | ● | ● | ○ | ○ | ▲ | – | ●●◐ | 9.143 |
| 2.69-6.45 (4.0-9.6**) | – | 229.7 (70) | | ● | ● | ● | ○ | ○ | ▲ | – | ●●◐ | 9.145 |
| 4.30-8.06 (6.4-12**) | – | 262.5 (80) | | ● | ● | ● | ○ | ○ | ▲ | – | ●●◐ | 9.147 |
| 1.34 (2.0) | – | 131.2 (40) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.151 |
| 1.68 (2.5) | – | 196.9 (60) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.153 |
| 3.36-5.38 (5.0-8.0**) | – | 229.7 (70) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.155 |
| 2.69 (4.0) | – | 65.6 (20) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.159 |
| 2.69 (4.0) | – | 65.6 (20) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.160 |
| 1.08 (1.6) | – | 65.6 (20) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.163 |
| 1.34 (2.0) | – | 98.4 (30) | | ● | ● | ● | ○ | ○ | ▲ | – | ●○○ | 9.165 |

# More solutions for long travels

**Legend**
- ● Standard
- ○ Suitable to only a limited extent
- ▲ Optional
- ■ Especially suitable
- * In preparation / on request

**Description**

## Guidelok horizontal - Upper run guide, self-supporting in chip areas

- ● Cost-effective solution
- ● Travels, unsupported up to 164 ft. (50 m) possible
- ● Chips cannot get stuck between upper and lower run
- ● Modular system with few parts (also possible without sideways trough)
- ● Enormous increase of “self-supporting” length of E-Chains®

- ● Lower push-/pull forces (smaller E-Chains®, self-supporting and rollers = energy efficient)
- ● Lower cost than most steel E-Chains® or ambitions gliding systems
- ● Open guide trough design, chips can fall through

## Basic Flizz® - Enclosed solution, e.g. waste-water treatment plants

- ● Low-maintenance system for travels up to 328 ft. (100 m)
- ● Protection against weather and dirt exposure
- ● Cost-effective and fully enclosed complete solution
- ● Standardized and modular design
- ● Easy wall mounting or optionally as floor attachment

- ● Cables cannot entangle, hang, or tear
- ● No slip-ring contact
- ● Cables or hoses can be easily retrofitted on demand
- ● Reduce power costs
- ● No additional drives needed

## Micro Flizz® - Small E-Chains® in aluminum profile

- ● Compact system for a secure guidance of power, data and air
- ● Maintenance-free alternative for busbar
- ● E-Chain® is guided in special slot, no sliding against each other
- ● Control via stationary switch cabinet possible

- ● Accelerations up to 164 ft/s² (50 m/s²) and speeds up to 19.69 ft/s (6 m/s)
- ● Fast assembly
- ● Less space required
- ● Available also as preassembled
- ● Smooth running due to ball bearings in the guide carriages

## PPDS - Push Pull Force Detection System - Condition monitoring

- ● Electronic diagnostics tool
- ● Online monitoring of the displacement forces
- ● The PPDS system measures the displacement forces on the E-Chain® several times per second
- ● If a variance occurs the plant can be automatically stopped with the help of the PPDS system

- ● Easy installation by means of non-interchangeable connectors
- ● Easy programming using the membrane keypad directly at the device
- ● Compact housing, stable, corrosion resistant

## Modular system for projects - “Special solutions from stock”

- ● Modular standard system
- ● Faster quotations, faster project planning
- ● Detailed service manuals and documentation
- ● Time and cost savings
- ● Safe function
- ● System warranty available upon request, for individual applications

- ● PPDS-tow arm with electronic push/pull force monitoring
- ● Fixed end modules
- ● Extreme gliders gliding elements
- ● HD trough systems with different assembly kit designs, matching the respective application and stress levels

| Typical industries and applications | travel max ft. (m) | Travel speed max ft. (m) | Price index | Page |
|---|---|---|---|---|
| | ≈ 164 (50) | ≈ 6.56 (2) | ● ○ ○ | 9.169 |
| ● Machine tools<br>● Applications in the chip area<br>● Wherever a gliding application is not recommended | | | | |
| | ≈ 328 (100) | ≈ 6.56 (2) | ◐ ○ ○ | 9.171 |
| ● Sludge scrapers<br>● Longitudinal scrapers<br>● Sand catchers<br>● Grease trap<br>● Waste-water treatment<br>● Plating facilities<br>● Cranes<br>● Plant construction<br>● Locks | | | | |
| | ≈ 394 (120) | ≈ 26.3 (8) | ◐ ○ ○ | 9.173 |
| ● Rack feeder<br>● Indoor cranes<br>● Industrial gates<br>● Working stations<br>● Sewage treatment plants<br>● Camera systems<br>● Sliding doors<br>● Operator panels<br>● Measure systems<br>● Studio equipment<br>● Conveyor technique | | | | |
| | ≈ 2,625 (800) | ≈ 32.8 (10) | ◐ ○ ○ | 9.181 |
| ● Malfunction-sensitive plants, such as conveyor systems in power plants<br>● Waste incineration systems<br>● Chemical plants<br>● Crane building<br>● Generally with long travel distances that have high fail-safe requirements<br>● For long travel applications, if tensile and compressive force monitoring is needed | | | | |
| | | | | 9.183 |
| ● Cranes<br>● Offshore | | | | |

# Special solutions for movements in all dir

**Description**

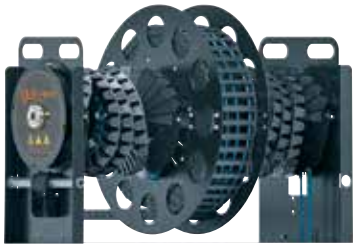
## Guidelok slimline F - Safe vertical guidance

- Up to 22.9 ft/s (7 m/s) and 32.8 ft/s (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the lever mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely

## LiftBand - Guide up to a height of 42.6 ft. (13 m) with limited installation space

- Modular, silent, space saving
- Guide media, energy and data up and down
- Available in 2 sizes - Inner width .98” and 1.26” (25 mm and (32 mm)
- 2 radii available - 6.89” and 9.84” (175 mm and 250 mm)
- Alternative to zig-zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. expansion length: 42.6 ft. (13 m)
- Simply press cables up to a diameter of .35”/.47”(9/12* mm) into the E-Chain®
- Pull cables up to .43”/.59” (11/15* mm) into the E-Chain® (*depends on Series)

## E-Spool - The cable drum without a slip ring



- Route many different cables in very narrow spaces
- Different media and diameters in one drum possible
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no “E-Chain® junction” - E-Chain® rolled into the home position, the paths remain free
- Cable diameters up to .67” (17 mm)
- Cables can be retroactively added or changed
- Alternative to zig-zag solutions
- Max. deployment and retract speed : 3.28 ft/s (1 m/s)

| Typical industries and applications | travel max ft. (m) | Travel speed max ft. (m) | Price index | Page |
|---|---|---|---|---|
| ● Storage and retrieval units<br>● Lifts<br>● Elevators<br>● Construction and crane lifts<br>● Hoists | ≈ 164 (50) | ≈ 6.56 (2) | ●○○ | 9.187 |
| ● Stage technology<br>● Indoor cranes<br>● Mobile telescoping antennas | ≈ 328 (100) | ≈ 6.56 (2) | ●○○ | 9.189 |
| ● Telescopic applications<br>● Light / Stage equipment<br>● Space-saving alternative to zigzag applications | ≈ 394 (120) | ≈ 26.3 (8) | ◐○○ | 9.191 |

# Chainfix strain relief

| igus® strain relief | Series |
|---|---|

## Clamps and stainless steel clamps - for maximum pull forces

| |
|---|
| **CFX** [1] Single, double, triple standard clamps |
| **CFXL**[1] Single, double, triple clamps with wide base for maximum pull forces |
| Saddle elements - bottom and stacker saddles |
| **Chainfix Multi-clamps** [1] |

## Tiewrap plates - for universal tiewrap, bolted or clip-on

| |
|---|
| **Option 1A:** Tiewrap plates as single part - Series 2000 + cable tiewraps |
| **Option 1B:** Tiewrap plates as single part - Series 3000 + cable tiewraps |
| |
| |

## Tiewrap plates - with clip-on connection for the profile rail

| |
|---|
| **Option 2:** Tiewrap plates with clip-on connection for the profile rail |
| **Option 3:** Integrated strain relief for E2 E-Tubes - Series R |
| **Option 4:** Tiewrap plates for fixed crossbars |
| **Option 5:** Tiewrap plates for opening crossbars |

## Clips - high pull forces, plug-in

| |
|---|
| **Option 1:** For all E-Chains® with profile rails |
| also suitable for assembly in the KMA mounting brackets |
| **Option 2:** Clip-on strain relief for opening crossbars |
| |

## Strain relief separators - with integrated teeth

| |
|---|
| Separator with integrated strain relief - Easy strain relief with tiewrap |
| |
| |
| |

## Strain relief element - outside of the E-Chain® cross section

| |
|---|
| Easy strain relief for cables, even in enclosed tubes. |
| With stepped, integrated teeth |
| |
| |

## Strain relief Nuggets - for profile rail

| |
|---|
| Simple and universal cable attachment, for cable diameters of .79” (20 mm) and 1.18” (30 mm) |
| Clips onto standard profile rail |
| |
| |

## Strain relief connector system - modular and customizable

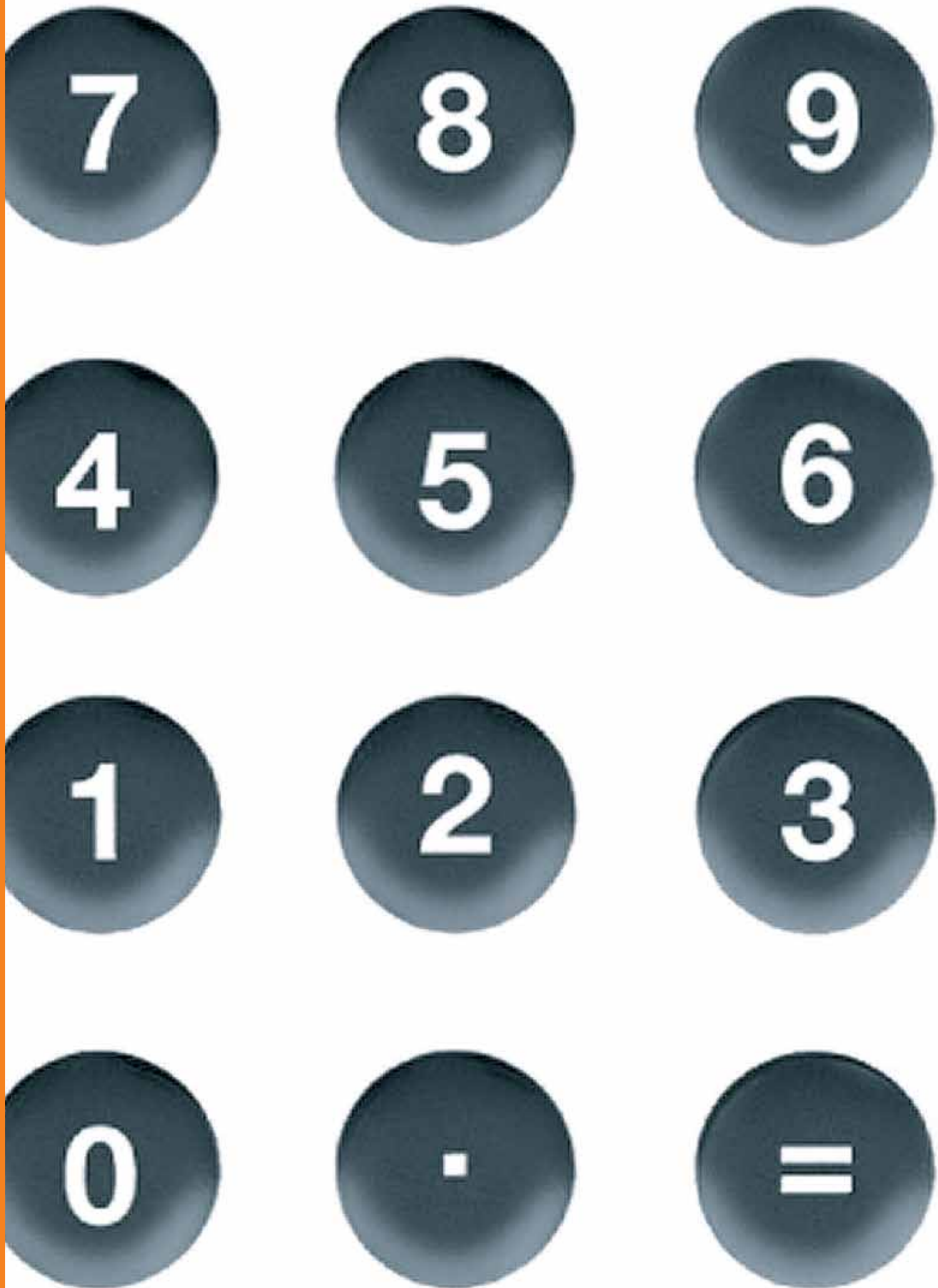
| |
|---|
| **CFB** plastic strain relief connector system, many cables in a very confined space |
| |
| |
| |

[1] Standard material zinc-coated steel. Stainless-steel (1.4301) version also available.

| Pitch in. (mm) | For Series E-Z Chain | For Series E2/000 | For Series E2 E-Tubes | For Series E4-1/E4-1 Light | For Series E4/Light | For Series E6/E6-1 | Page |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| .24-1.65 (6-42) | – | X | – | X | X | X | 10.9 |
| .24-1.65 (6-42) | – | X | – | X | X | X | 10.10 |
| .24-1.65 (6-42) | – | X | – | X | X | X | 10.11 |
| .24-.47 (6-12) | – | X | – | X | X | X | 10.12 |
| | | | | | | | |
| max. 1.42 (36) | – | X | – | X | X | X | 10.15 |
| max. 1.42 (36) | – | X | – | X | X | X | 10.16 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | X | X | X | X | X | X | 10.17 |
| | X | X | X | X | X | X | 10.17 |
| | | | | | | | 10.18 |
| | | | | | | | 10.18 |
| | | | | | | | |
| .16-.94 (4-24) | – | X | – | X | X | X | 10.19 |
| | – | – | X | – | – | – | |
| .16-.94 (4-24) | X | X | – | – | – | – | 10.20 |
| | | | | | | | |
| | | | | | | | |
| .79-1.18 (20-30) | – | X | – | X | X | X | 10.21 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | – | X | – | X | – | – | 10.23 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| ≤ 1.18 (30) | – | X | – | X | X | X | 10.24 |
| ≤ 1.18 (30) | – | X | – | X | X | X | 10.24 |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| .17-.55 (4.3-14) | | | | | | | 10.25 |
| | Please consult igus® for individual designing | | | | | | |
| | | | | | | | |
| | | | | | | | |

# PMA cable protection


| | Product | Description | Page |
|---|---|---|---|
| **PMAFLEX Conduits - cable protection** | | | |
| | **PACOF** | Flexible, medium, split | 11.5 |
| | **PPCOF** | Very Flexible, medium, split | 11.6 |
| | **LN** | Two-part lock nuts | 11.7 |
| | **LNO** | One-piece split connectors | 11.7 |
| | **VCS** | Flexible, heavy | 11.8 |
| | **PIS/PIH** | Highly flexible, medium | 11.9 |
| | **CYL** | Very flexible, medium | 11.10 |
| **PMAFIX Connectors - safety and sealing systems** | | | |
| | **IP66 - stat., IP54 dyn.** | Universal safety clip | 11.11 |
| | **IP68 - stat., IP67 dyn.** | Oval clip | 11.11 |
| | **PMAFIX / PMAFLEX** | Connectors | 11.12 |
| | **PMAFIX connectors VW** | 90° elbow, metric & PG | 11.13 |
| | **PMAFIX connectors VA** | 45° elbow, metric & PG | 11.14 |
| | **PMAFIX connectors VN** | Straight, metric | 11.15 |
| | **PMAFIX connectors VN** | Straight, PG | 11.16 |
| | **PMAFIX connectors VB** | 90° curved elbow, metric & PG | 11.17 |
| | **PMAFIX connectors VO** | Flange 90° | 11.18 |
| **PMA - Acessories** | | | |
| | **PMAFIX FH-O** | One-piece system support | 11.19 |
| | **PMA VH** | System supports | 11.19 |
| | **PMA GPS** | One-piece system supports | 11.20 |
| | **PMA MN** | Hexagonal lock nuts, metric & PG | 11.20 |
| | **PMA SGB** | Tube clamps | 11.21 |
| | **PMA 514** | Plug screws, metric & PG | 11.22 |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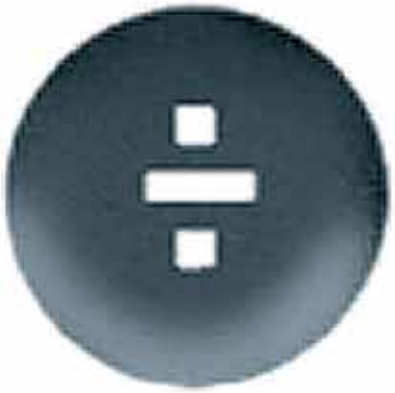
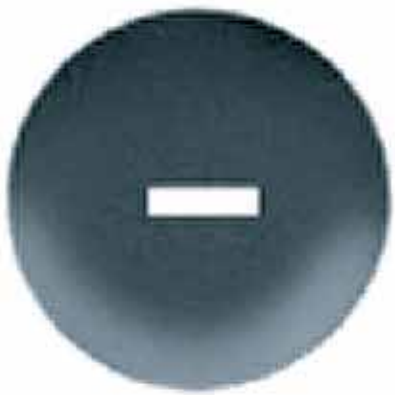


# Designing with igus®

## Calculation tools, diagrams, and application examples



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# E-Chain System® Design
# Designing with igus®
# Introduction

## An all-in-one energy supply system - the-chain

There are many options to supply your equipment and systems with energy and data. But there is hardly a solution as universal and durable as the E-Chain System®. Whether you have a circular motion, a suspended or upright application, a long travel distance, high loads or large cables and hoses - igus® plastic E-Chains® will help you solve nearly any type of energy supply problem, quickly, safely and with ease. Whether you wish to reliably guide many large hoses for any type of media, sensitive fiber optic signals over long distances, disruption-free data in torsional movements, or only air at high accelerations, igus® can supply you with the matching energy supply system in addition to the optimally matched Chainflex® cables. By tapping into the extensive igus® construction kit, you will find the solution to match your needs and application: from the individual components to the completed installation at your facility. We have developed a online tool to help you find these resources with greater ease ➤ **www.igus.com/the-chain**. Should you have trouble finding exactly the product you need, our engineers are always at your disposal to help you design **the-chain.**

On the following pages, we offer important guidelines which are to be taken into consideration when designing safe E-Chain Systems®. All specifications are based on test results from the igus® laboratory and our field experience since 1971.

In addition, we strongly encourage you to take advantage of our free design service. Simply fill in the “igus® system design” fax sheet on page 1.5 of this catalog, log onto the igus web site at http://www.igus.com and e-mail us your technical specifications, or call us at 1-800-521-2747.

We will provide a comprehensive quote by the end of the next business day.

## Laboratory tests and practical experience

Our calculations and analyses are based on the result of ongoing practical tests in our Technical Center and our experience with gliding applications. The focal points of our tests are push-pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the E-Chains® or E-Tubes and Guide Troughs.

# E-Chain System® Design
# Application Examples

Long travels 1,447 ft. (441 m) with igus® Rol E-Chain ® long travel applications

High fill weights 40.3 lbs/ft (60 kg/m) with System E4. fill weights/load diagrams

Multi-axis E-Chains® E-Z Triflex® on a production line, combined movements

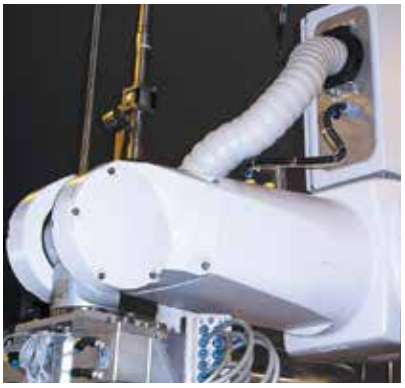
ReadyChain® under water. System E4 and Chainflex® CF9, ReadyChain®

ReadyChain® with combined motions on tooling machines

Series E6-52 high speed 49.2 ft/s (15 m/s) low noise operation, optimized noise level

Crash test unit: 72.2 ft/s (22 m/s) speed and 2,572 ft/s² (784 m/s²) acceleration, travel speed

Complex movements with igus® Triflex® R, combined movements



Cleanroom and Triflex® R technical environment

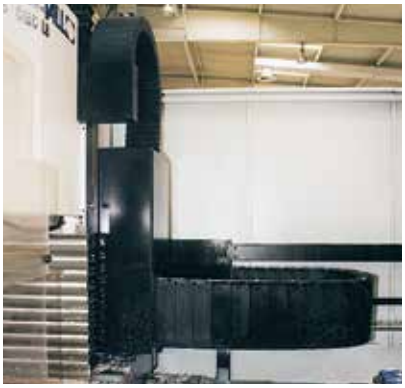
Extension links for E2 and E4 for large conduits, cable and hoses

Zig-zag movements, 118 ft. (36 m) height with E4/4

igus® System E6 - High acceleration and ESD safety, ESD & ATEX

# E-Chain System® Design
# Application Examples

Unsupported application System E4, up to 164 ft/s (50 m/s) speed



Unsupported, side-mounted
E4 Series R188

Unsupported nested application
System E4

Gliding application System E4,
up to 1641 ft (500 m) realized

Gliding, side-mounted
Series E4/4

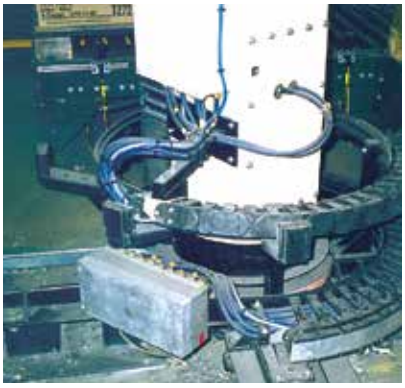
Gliding application
System E4

Vertical, standing Series E4/light,
up to 19.69 ft (6 m) possible

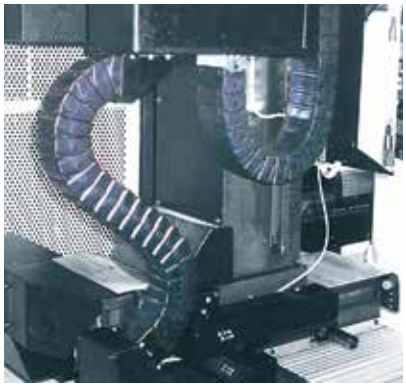
Rotary movement
System E4

E-Chains® side by side as individual or
“multiband”
Series Zipper

Vertical, hanging Series E4 up
to 131 ft (40 m) possible



Spiral and rotary movement
TwisterChain®

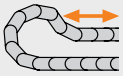


Combined movement
Series Triflex®

# E-Chain System® Design
# igus Terminology and Formulas

## Application-Icons

Unsupported - short travels


Gliding - long travels

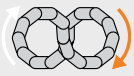
Vertical hanging

Vertical standing

Zig-zag

Side-mounted

Rotary motion


Continuously revolving

Horizontal and vertical

Nested

Side by side

Combined motions

**Throughout this catalog you will find the following terms and formulas:**

| Short cut | | Description | |
|---|---|---|---|
| $\alpha$ | = | The rotation angle of the rotating machine element | ( ° ) |
| $\Delta M$ | = | Deviation of the center point | (in.) |
| $a$ | = | Acceleration | (ft/s²) |
| $AR$ | = | Outer radius, E-Chain® | (in.) |
| $Ba$ | = | Outer E-Chain® width | (in.) |
| $Bi$ | = | Inner E-Chain® width | (in.) |
| $B_{Ra}$ | = | Guide trough outer width | (in.) |
| $B_{Ri}$ | = | Guide trough inner width | (in.) |
| $D$ | = | Over length E-Chain® radius in final position | (in.) |
| $D_2$ | = | Over length for long travels gliding | (in.) |
| $FL_B$ | = | Unsupported length with sag | (ft) |
| $FL_G$ | = | Unsupported straight length | (ft) |
| $FL_U$ | = | Unsupported lower run | (ft) |
| $FZ_{max}$ | = | Maximum additional load | (lbs/ft) |
| $H$ | = | Nominal clearance height | (in.) |
| $ha$ | = | Outer E-Chain® height | (in.) |
| $H_F$ | = | Required clearance height | (in.) |
| $hi$ | = | Inner E-Chain® height | (in.) |
| $H_{Ra}$ | = | Outer trough height | (in.) |
| $H_{Ri}$ | = | Inner trough height | (in.) |
| $IR$ | = | Inner radius, E-Chain® | (in.) |
| $K$ | = | Add-on for bending radius (K is taken from the data tables of the individual igus® Series) | (in.) |
| $K_2$ | = | Further add-on if the mounting bracket location is set lower (for long travels) | (in.) |
| $L_K$ | = | E-Chain® length | (in.) |
| $n$ | = | Number of links | (1) |
| $n_{Mon}$ | = | Number of installation sets (left/right) | (1) |
| $n_{Ri}$ | = | Number of trough-sets (left/right) | (1) |
| $R$ | = | Bending radius | (in.) |
| $RBR$ | = | “Reverse bending radius“ | (in.) |
| $S$ | = | Length of travel | (in.) |
| $S/2$ | = | Half length of travel | (in.) |
| $T$ | = | Pitch | (in.) |
| $v$ | = | Speed (travel) | (ft/s) |
| $X_1$ | = | Inner machine-construction space (TwisterChain®) | (in.) |
| $X_2$ | = | Outer radius chain, including clearance (TwisterChain®) | (in.) |

| Formula | | Description |
|---|---|---|
| $2 \times FL_B$ | = | Calculation of maximum travel length, unsupported with sag |
| $2 \times FL_G$ | = | Calculation of maximum travel length, unsupported straight |
| $B_{RI} \geq Ba + .20\ (5mm)$ | = | Calculation of the minimum guide trough width |
| $H_{RI} \geq 2 \times ha$ | = | Calculation of the minimum guide trough height |
| $K = \pi \times R$ | = | Add-on for bending radius |
| $L_K = S/2 + \Delta M + K$ | = | Calculation of chain lengths for all types of applications, fixed end is outside the center of travel, except rotary movements and most long travels |
| $L_K = S/2 + K$ | = | Calculation of chain lengths for all types of applications, fixed end in the center of travel, except rotary movements and most long travels |
| $L_K = S/2 + K_2$ | = | Calculation of chain lengths for long travel gliding applications fixed end in the center of travel |

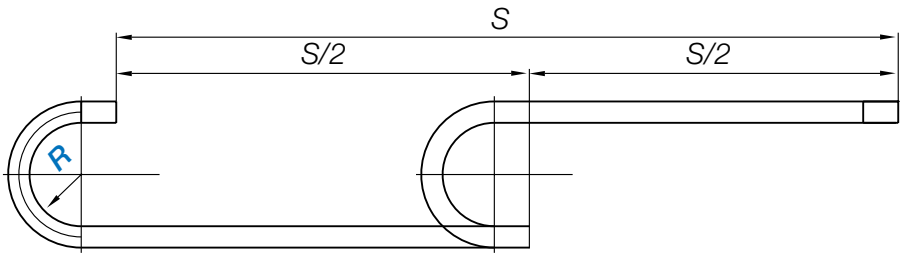
# E-Chain System® Design
# Calculation of E-Chain® Lengths
# Camber

## Calculation of E-Chain® lengths

If the fixed end of the E-Chain® is located in the center of the travel, the chain length "$L_K$" is calculated by using half the length of travel and adding the value "K" for the curve length. (You can obtain the value "K" from the tables in the catalog.) Placing the fixed end in the **center** of the travel is the most **cost-effective solution** because it requires the shortest E-Chain®, cables and hoses.

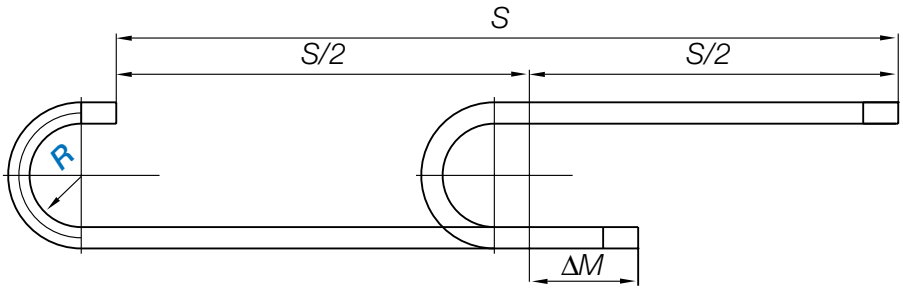
$$L_K = S/2 + K$$

This formula is generally valid for **all types of applications** if the fixed end is in the center of the travel. Exceptions: rotary movements and most long travels.



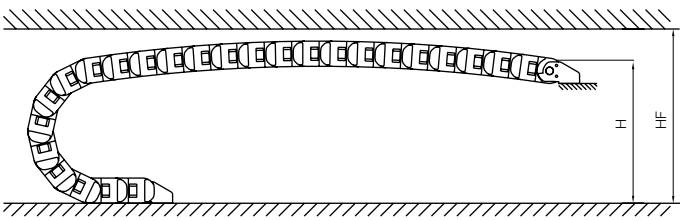

$$L_K = S/2 + \Delta M + K$$

This formula is valid if the fixed end is outside the center of the travel.




## Camber

"Camber" is the curve of the upper run along its unsupported length. **All igus® E-Chains are manufactured with camber, special "no camber" (NC) E-Chains® are available upon request.** The camber allows for longer unsupported lengths and increases service life and operating safety. In the **Installation Dimensions** section of each respective E-Chain® description, you will find the measurement $H_F$, which specifies the **necessary clearance height**, taking the camber into account. The camber allows for longer unsupported lengths and increases service life and operating safety. Upon request, we can deliver E-Chains® without camber for restricted space applications; however, these "no camber" chains do not have the same load-bearing capacity. Please consult igus®.




**Principle of camber for igus® E-Chains® $H_F$ = required installation height**

**The fixed end in the center of the travel is the most favorable solution**

$L_K$ = E-Chain® length
$S$ = Length of travel
$R$ = Bending radius
$\Delta M$ = Deviation from the center point
$K$ = $\pi \bullet R$ + "safety buffer"
Add-on for bending radius ($K$ is taken from the data tables of the individual igus® series

"No camber" - Special "NC" E-Chains® with no camber are also available. Please consult igus®

$H$ = Nominal clearance height
$H_F$ = Required clearance height

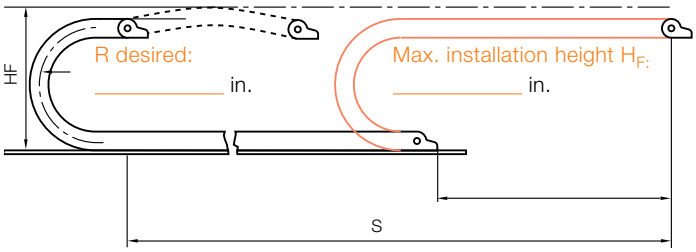
Necessary clearance height- depends on the camber of the E-Chain®. Find values for necessary clearance height *"$H_F$"* on each product page.

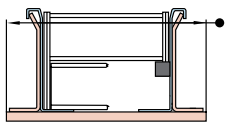
# E-Chain System® Design
# System Analysis Worksheet

Please supply us with as much application data as possible. Items highlighted in red must be filled out for analysis. You will receive a complete analysis with cable/hose layout proposal and quote by the end of the next business day. Please contact us if you have any questions.

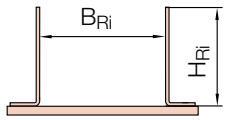
## Installation space

Travel: _____ in. Fixed end: center of the travel ☐ yes
or_____ inches from the center



Max. width permitted (if applicable):
_____ in.




Guide trough?
☐ yes; if yes, which:
Dimensions:
$B_{Ri}$ _____ in.
Dimensions:
$H_{Ri}$ _____ in.

Assembly point (floor, wall, console, etc.): _____in.

Span (Standard = 6.5 ft.):_____in.

## Dynamics

Speed:_____ (f/s)

Acceleration: _____ ($f/s^2$)

Cycles/Day: _____

Days/Year: _____

Outer diameter: _____

## Environment

Temperature (°F): _____

Humidity (%): _____

Dust, dirt, chips: _____

Special parameters: _____

## Cables/Hoses

| Number | Manufacturer/Type, No. | Conductor/AWG | Outer Dia. | Weight lbs/ft. | Bending radius |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## Further individual components desired:

E-Chains® / E-Tubes ☐
Chainflex® cables/special conduits ☐
Guide troughs ☐
Strain relief ☐
Harnessing ☐
On-site assembly ☐
Other: _____

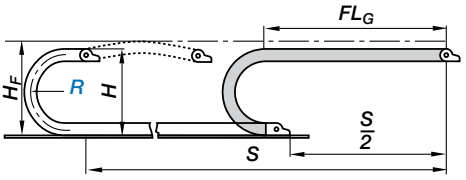
E-Chain® ☐
E-Tube ☐
To be opened:
On both sides ☐
Along the outer radius ☐
Along the inner radius ☐
Special requests: _____
igus® System guarantee? ☐

Please copy, fill in and fax. Thank you.

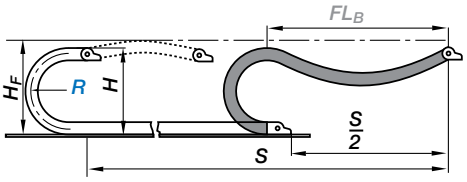
Use this page for your drawings

# E-Chain System® Design
# Unsupported, Short Travel Applications

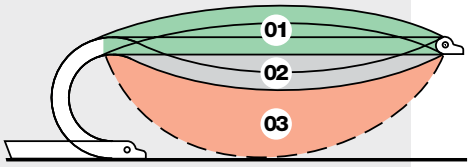
The $FL_G$ type of installation always generates the longest service life and can be operated with the maximum values for speed and acceleration.




$FL_G$ unsupported straight length




$FL_B$ unsupported length with sag




● 01) Unsupported with straight upper run $FL_G$

## Unsupported applications

If the upper run of the E-Chain® operates without touching the lower run over the entire travel, it is called and "unsupported" application. The distance between the moving end and the beginning of the radius curve of the E-Chain® is called the "unsupported length". The unsupported application is the most common. igus® E-Chains® are very well suited for high dynamics and long service life. The maximum unsupported length is dependent upon the fill weight and the type of E-Chain® or E-Tube. As a result, we differentiate amng three types of unsupported length:

## 01) Unsupported with "straight" upper run $FL_G$

The $FL_G$ E-Chain® applies when the upper run either has camber, is straight, or has a maximum of .39"-1.97" (10-50 mm) sag, depending on the size of the chain. The $FL_G$ type of installation is always preferred. The E-Chain® runs quietly and is not exposed to any additional vibration.

## 02) Unsupported with permitted sag $FL_B$

The $FL_B$ E-Chain® applies when the sag amounts to more than .39"-1.97" (10-50 mm), depending on the chain size, and less than a defined maximum sag. This maximum sag is dependent on the type of chain. The $FL_B$ application is technically permissible in many cases. It becomes problematic if the acceleration and the travel frequency are high.

## 03) "Critical Sag"

If the sag is greater than permissible for $FL_B$, then we refer to it as "critical sag." An installation with critical sag must be avoided or reserved for extreme circumstances. An E-Chain® should never be installed with critical sag. There are applications which, after a very long period of use, reach the stage of critical sag. The E-Chain®/Tube should be replaced at that time.

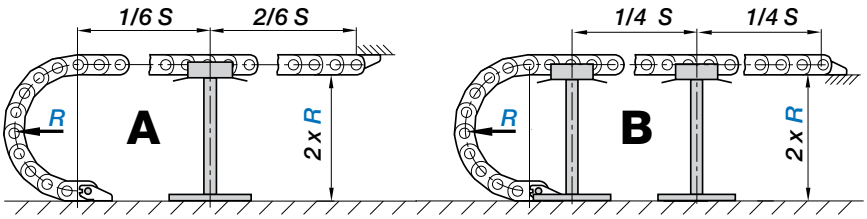
# E-Chain System® Design
# Unsupported, Short Travel Applications

**Example of unsupported with $FL_B$ sag**

## What to do if the unsupported length is insufficient:

If your application, fill weight and travel fall outside the "unsupported length" parameters of the desired E-Chain®, you have the following options:

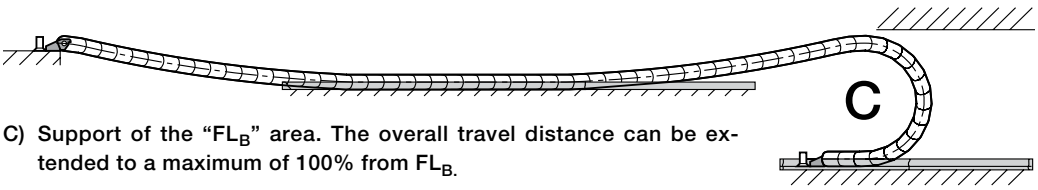
- Select a more stable igus® E-Chain®
- Support the chain in the unsupported area (this possibility has restrictions for acceleration, speed and noise as a consequence; three fundamental examples are detailed below; please consult igus® if you are considering this possibility we will gladly provide you with a detailed proposal)
- Use a "multiband" chain or "nest" two E-Chains® inside one another (please consult igus® regarding these options)
- Design the travel distance as a "gliding application" (see page 1.x).




**Support of the "$FL_G$" area.**

**A) The overall "straight, unsupported travel can be increased along the upper run by a maximum of 50% of the $FL_G$ and**

**B) along the lower run by a maximum of 100%.**




**C) Support of the "$FL_B$" area. The overall travel distance can be extended to a maximum of 100% from $FL_B$.**

For every igus E-Chain®/Tube, you will find the values for "$FL_G$" and "$FL_B$" in two locations: On the following pages in this chapter as an overview and within every individual series' chapter. These values are essential for:

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the maximum load for the selected E-Chain®

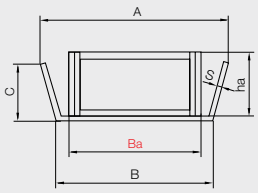
# E-Chain System® Design
# Unsupported, Short Travel Applications

Standard

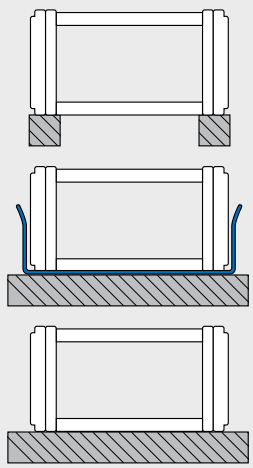
**We recommend pivoting mounting brackets as standard. We also recommend locking mounting brackets as standard if high speeds > 65.6 ft/s (20 m/s) or accelerations > 65.6 ft/s² (20 m/s²)**

**Standard values of maximum speed and acceleration**

| Unsupported | $FL_G$ | $FL_B$ |
|---|---|---|
| v max ft/s (m/s) | 65.6 (20) | 9.84 (3) |
| v peak ft/s (m/s) | 164 (50) | – |
| a max ft/s² (m/s²) | 656 (200) | 19.69 (6) |
| a peak ft/s² (m/s²) | 2572 (784) | – |



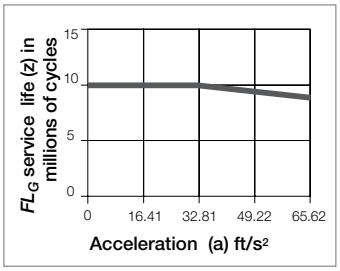

**Ba = chain outer width**
**A = B + .39" (10)**
**B = ba + .20" (5)**
**C = ha/.08" (2)**
**S = .06" - .12" (1.5 - 3)**



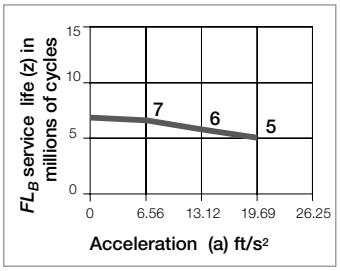
Different surfaces and guide troughs are possible

## Speed and acceleration, service life

For unsupported applications, the acceleration (a), is the critical parameter. High acceleration can cause the E-Chain® to vibrate and reduce its service life. This is a particular danger if the E-Chain® already has a sag greater than the $FL_G$ value. Maximum values for acceleration speed and service life are achieved only with E-Chains® incorporating the $FL_G$ (unsupported, straight) design. $FL_G$ designed igus E-Chain Systems® can sustain very high loads. To date, a peak acceleration of 2,572 ft/s² (784 m/s²) has been achieved during continuous use. Through ongoing testing in the igus® laboratory and from practical experience, standard values for service life have been formulated (see graphs). Our tests confirm that these standard values apply to all igus E-Chains® and E-Tubes. It is crucial to determine whether the application will be designed as unsupported, straight $FL_G$ or unsupported, with sag $FL_B$.




**Standard values on service life for "$FL_G$" dependent on acceleration**




**Standard values of service life for "$FL_B$" dependent on acceleration**

## Load-bearing surfaces

Unsupported E-Chains® normally require some type of surface on which the lower portion of the chain runs. As the drawings on the right demonstrate, a wide range of configurations are available. Many material options are feasible: Metals, polymers, stone, wood, concrete, glass, etc. **We also have solutions to minimize the noise generated by the carrier's lower portion. Please consult igus®.** When selecting the running surface, be sure dirt and debris cannot collect in the E-Chain® path.

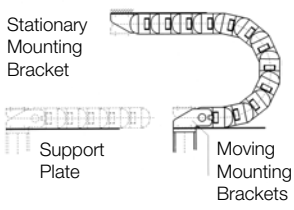
## Mounting Brackets

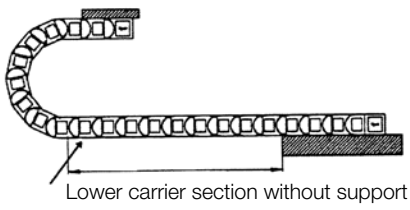
**We recommend pivoting mounting brackets as standard for unsupported applications.** Pivoting mounting brackets compensate for the camber, can be installed more easily and decrease the load on the first E-Chain® link in operation. **Exception:** If the acceleration is greater than 65.6 ft/s² (20 m/s²) or if the height is limited to the $H_F$ measurement, locking mounting brackets keep the E-Chain under the $H_F$ measurement.

## Horizontal Inverted

E-Chains® without support along the lower run have restricted use. An E-Chain® is said to be "horizontal inverted" when the stationary end is positioned on the top and the moving end is positioned on the bottom. Care must be taken to assure the maximum unsupported inverted span (FLu) is not exceeded. A support plate behind the moving end bracket may be necessary to prevent cantilevered loading and potential wear or breakage. If the lower run of the E-Chain® cannot be supported over the whole length of travel, please contact igus® with your application information and we will be happy to specify a chain for you.

**System E4 partially unsupported - please consult igus regarding this type of configuration.**



# E-Chain System® Design
# Unsupported, Noise-Optimized

## Unsupported, noise optimized

The igus® program offers you optimal noise-reduction E-Chains®. The table below briefly illustrates the differences in noise levels among various E-Chains®. In addition to the E-Chain®, the running surface, the dynamics and the cable and hose package all play a role in overall noise generation. Have our specialists design the quietest E-Chain System® for your application.

### System T3 ≤ 33 dB(A)

Optimal smoothness of motion was the prime development goal, as well as making it an economic solution. The igus® T3 E-Chain® is very flexible and runs -due to the special geometry- very smooth. A measurement indicates a value of ≤ 33 dB(A) at 1 m/s and with an unsupported length with series **T3.29.050.038.0**, and all this with a sound pressure level generated by external noise.

### System E3 ≤ 38 dB(A)

Long-term tests in the igus® acoustic laboratory showed reductions of 19-20 db(A) compared with standard E-Chains®, measured at a speed of 1.8 m/s and an acceleration of 3 m/s². Figure determined in the igus® laboratory in accordance with DIN 45635, taking into consideration background noises, for the series **E3.22.060.044.0**.

### System E6 ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4.92 ft (1.5 m) with **Series E6-52-10-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. The System E6 runs very smooth due to the short link pitch.

### System E4 ≤ 46 dB(A)

A measurement by the Rhineland Technical Inspection Authority (TÜV Rheinland) for **System E4/101, Series 221-10-200-0** indicates a value of 46 dB(A) at 4.92 ft/s (1.5 m/s) with an unsupported length.

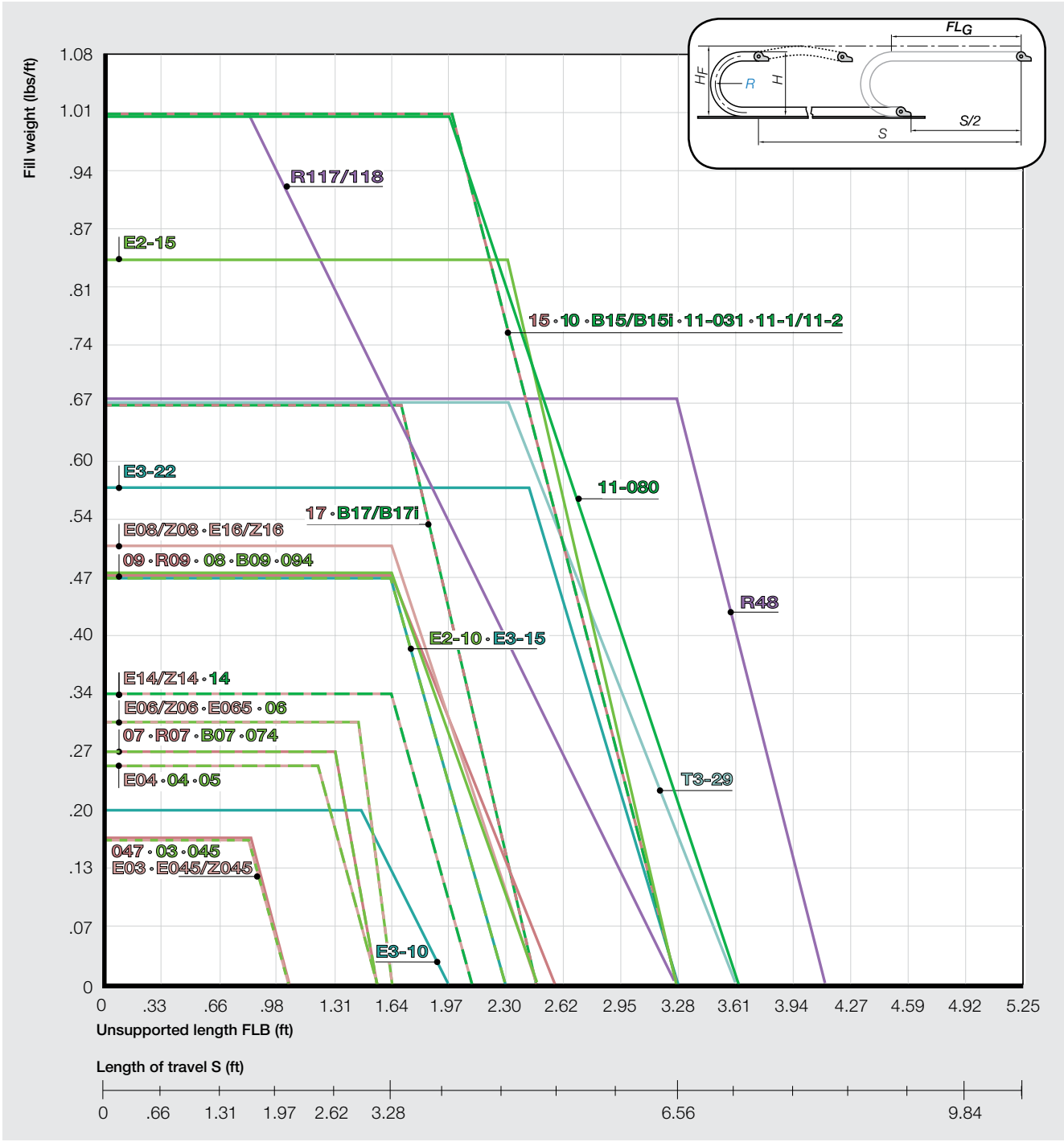
| igus® Series | System | Average of the corrected sound pressure levels | Test method (unsupported) |
|---|---|---|---|
| T3-29 | T3 | = 33 dB(A) | 3.28 ft/sec (1.0 m/s) |
| E3-22 | E3 | = 38 dB(A) | 5.91 ft/sec (1.8 m/s) |
| E6-52 | E6 | = 46 dB(A) | 6.56 ft/sec (2.0 m/s) |
| 221 | E4/100 | = 46 dB(A) | 4.92 ft/sec (1.5 m/s) |
| ES4-42 | E4-1 | = 46 dB(A) | 3.28 ft/sec (1.0 m/s) |
| E4-42 | E4-1 | = 50 dB(A) | 3.28 ft/sec (1.0 m/s) |
| 255 | E2 Medium | = 53 dB(A) | 4.92 ft/sec (1.5 m/s) |
| **Competitors Product** | | **Average sound levels** | **Test method (unsupported)** |
| Chain 1 Third party product | | = 77 dB(A) | 6.56 ft/sec (2.0 m/s) |
| Chain 2 Third party product | | = 68 dB(A) | 6.56 ft/sec (2.0 m/s) |
| Chain 3 Third party product | | = 73 dB(A) | 6.56 ft/sec (2.0 m/s) |

Source: TÜV Rheinland, except series E3-22 - source: igus® laboratory

A reduction of 3 dB(A) sounds like a 50% reduction in the noise level to the human ear

We have received an official certificate from the Rhineland Technical Inspection Authority (TÜV Rhineland Berlin Brandenburg). A copy is available upon request.

# E-Chain System® Design
# Unsupported, Straight $FL_G$
# Fill weights up to 1.01 lbs/ft (1.5 kg/m)




## Important information

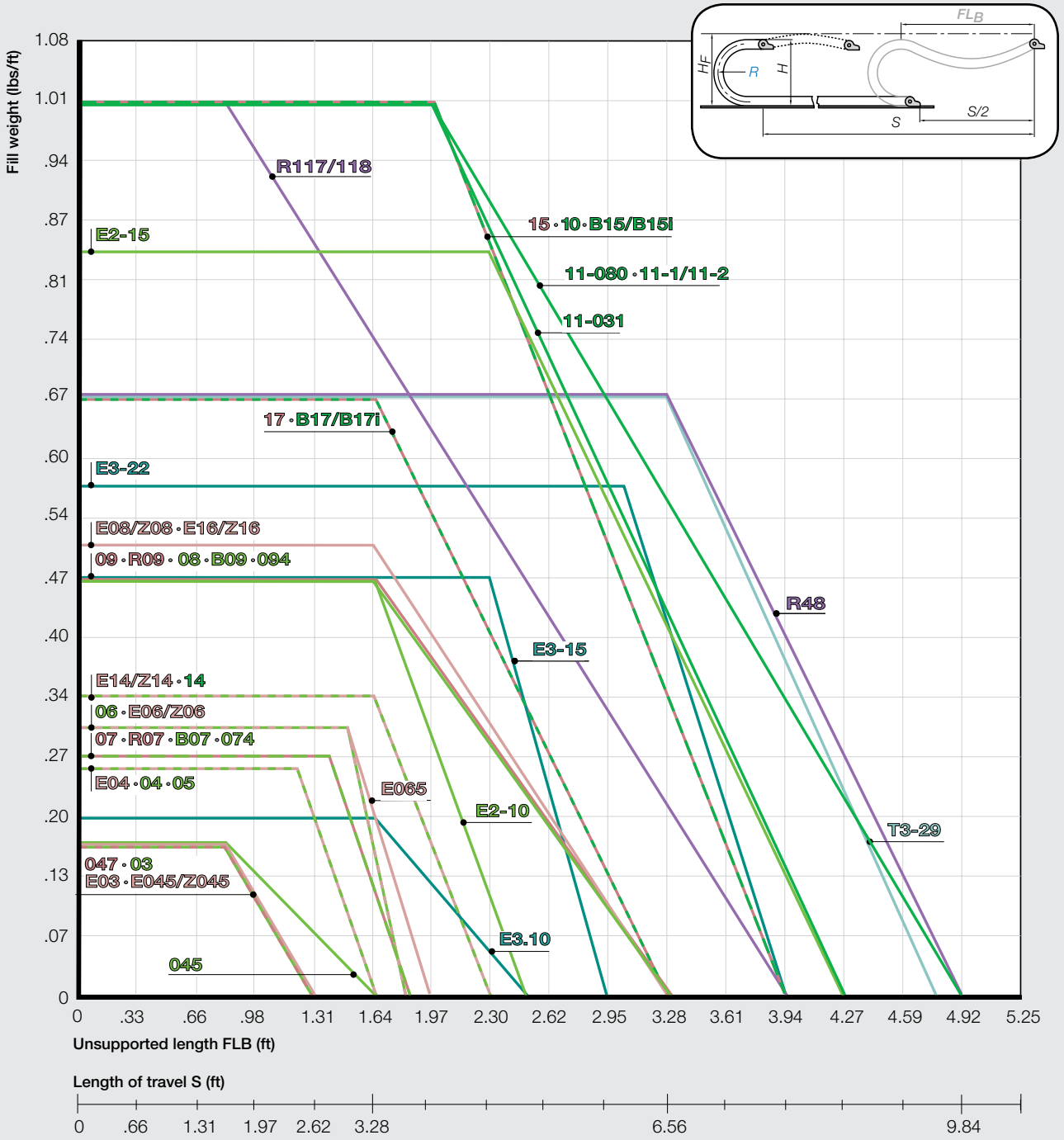
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- $FL_G$ - unsupported E-Chain® with straight upper run
- $FL_B$ - unsupported E-Chain® with permitted sag
- To the right of the $FL_B$ graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

**These values are essential for:**

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

# E-Chain System® Design
# Unsupported, Sag $FL_B$
# Fill weights up to 1.01 lbs/ft (1.5 kg/m)




**The maximum travel - 2 x $FL_G$ or $FL_B$**

If the fixed end is in the center, then:

***E-Chain® length:*** $L_K = S/2 + K$

***S*** = Length of travel

***R*** = Bending radius

***H*** = Nominal clearance height

$H_F$ = Required clearance height

***K*** = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

(*K* is taken from the data tables of the individual igus® series)

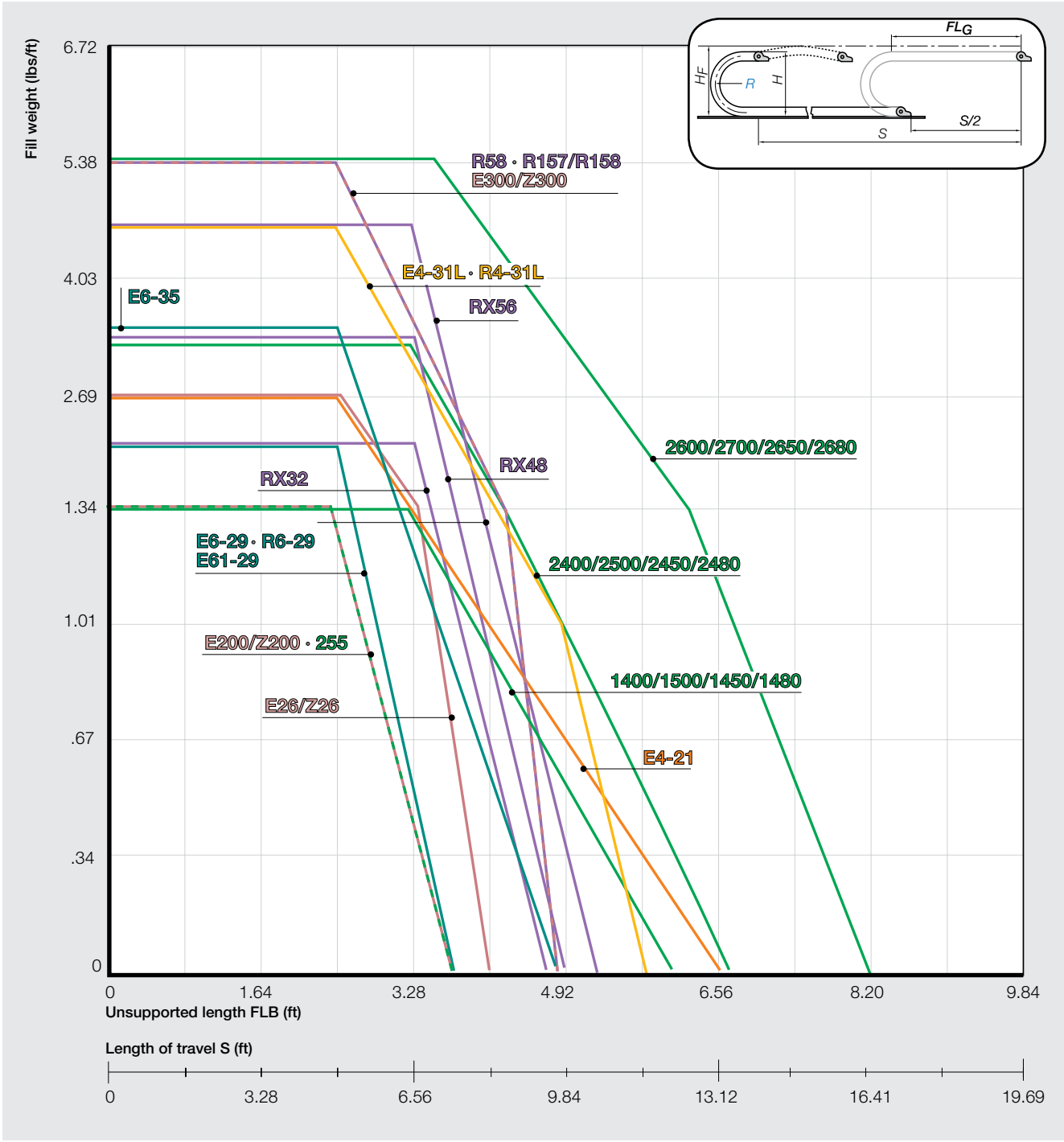
## Diagram Series

You will find both diagrams for each series listed individually in the catalog!

| | |
|---|---|
| E-Z Chain® | chapter 2 |
| Zipper | chapter 3 |
| E2 micro | chapter 4 |
| E2 mini | chapter 4 |
| E2/RX E-Tubes | chapter 5 |
| System E3 | chapter 7 |
| System T3 | chapter 7 |

## More Information ➤ www.igus.com

# E-Chain System® Design
# Unsupported, Straight $FL_G$
# Fill weights up to 6.05 lbs/ft (9.0 kg/m)




## Important information

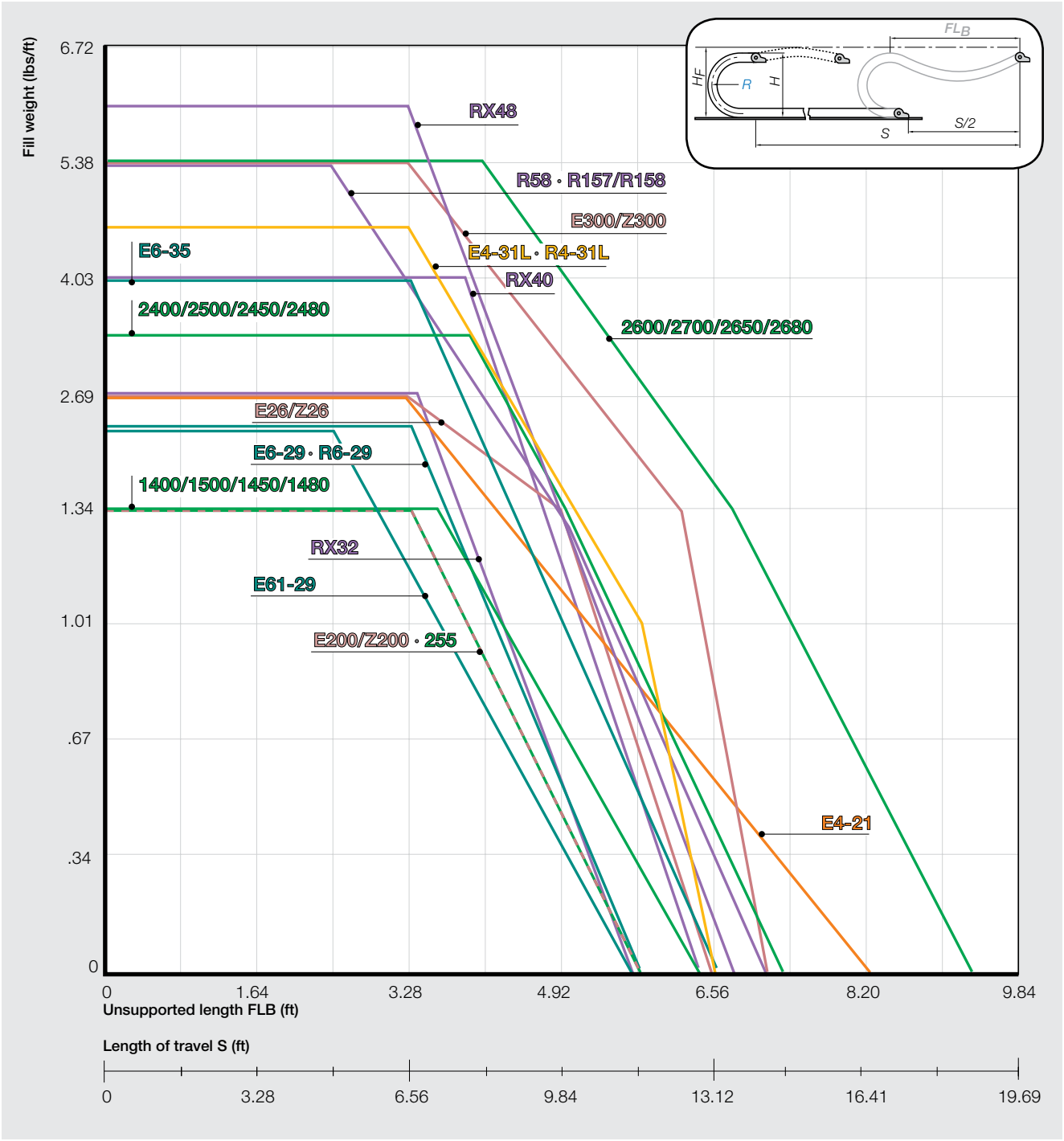
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- $FL_G$ - unsupported E-Chain® with straight upper run
- $FL_B$ - unsupported E-Chain® with permitted sag
- To the right of the $FL_B$ graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

**These values are essential for:**

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

# E-Chain System® Design
# Unsupported, Sag $FL_B$
# Fill weights up to 6.05 lbs/ft (9.0 kg/m)




**The maximum travel -**always amounts to **2 x 2 x $FL_G$ or $FL_B$** if the fixed end is in the center of the travel. In this case, the following applies:

***E-Chain® length:*** $L_K = {}^{S}/_{2} + K$

***S*** = Length of travel

***R*** = Bending radius

***H*** = Nominal clearance height

$H_F$ = Required clearance height

***K*** = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

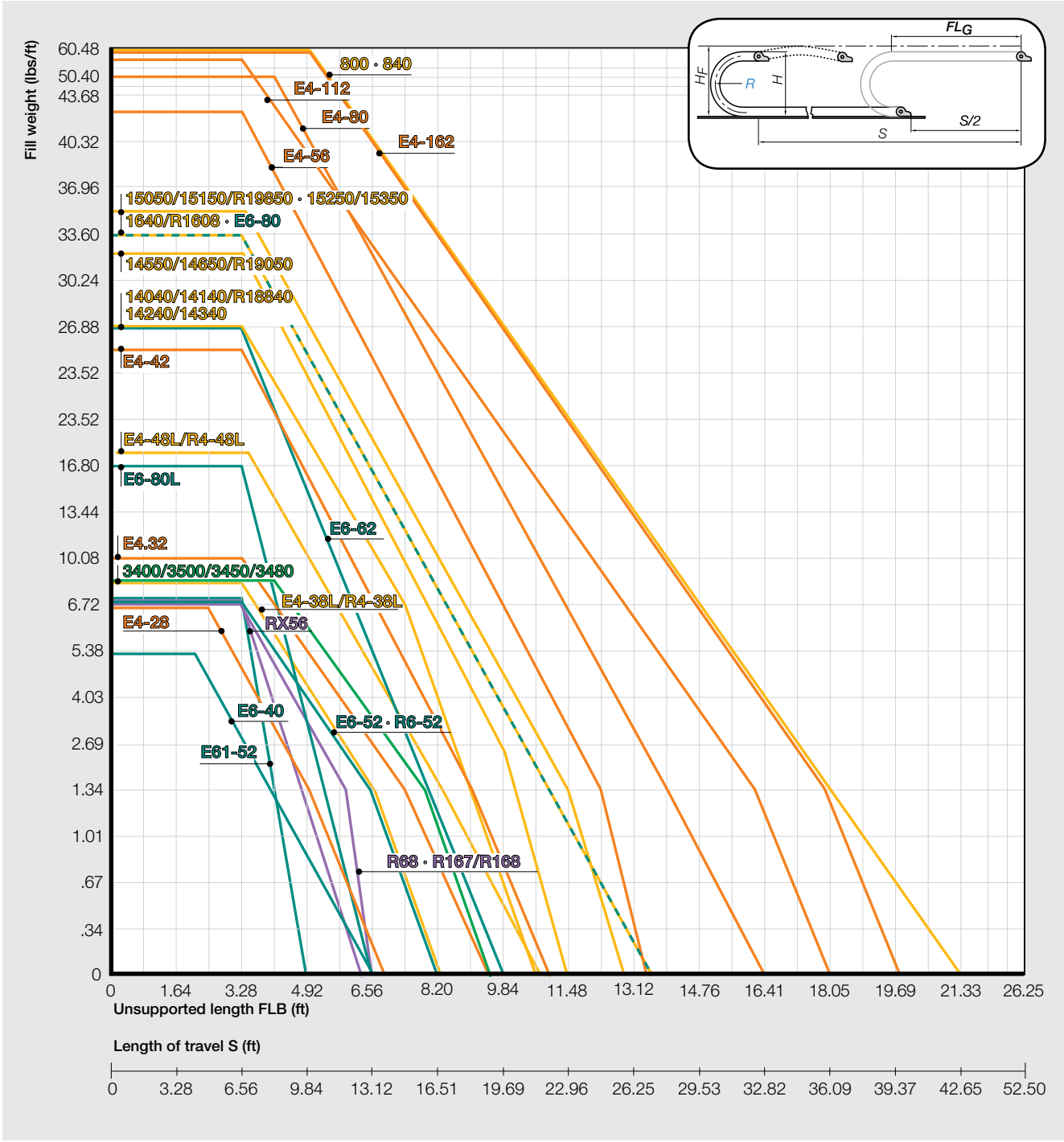
(*K* is taken from the data tables of the individual igus® series

## Diagram Series

You will find both diagrams for each series listed individually in the catalog!

| | |
|---|---|
| E-Z Chain® | chapter 2 |
| E2/000 | chapter 4 |
| E2/RX E-Tubes | chapter 5 |
| E4-1 | chapter 6 |
| E4-1 light | chapter 6 |
| E6 | chapter 7 |
| E6-1 | chapter 7 |

# E-Chain System® Design
# Unsupported, Straight $FL_G$
# Fill weights up to 60.48 lbs/ft (90.0 kg/m)




## Important information

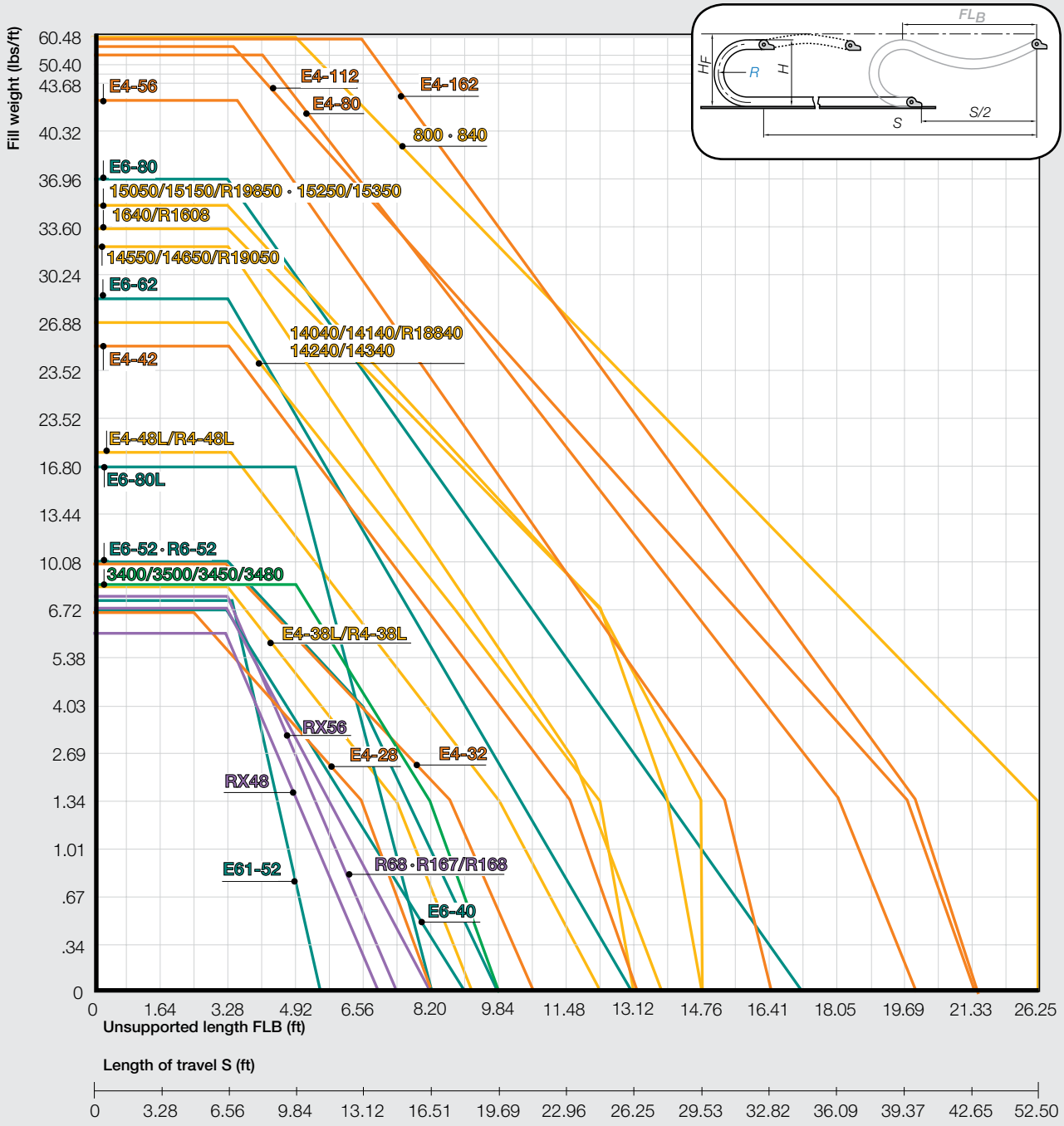
- Fill weight - Weight of all cables and hoses, including contents (for media hoses) within the E-Chain®, typically given (lbs/ft)
- $FL_G$ - unsupported E-Chain® with straight upper run
- $FL_B$ - unsupported E-Chain® with permitted sag
- To the right of the $FL_B$ graph of the diagram, the application is shown in “critical sag”, **which must be avoided!**

**These values are essential for:**

- Finding a suitable E-Chain® for your fill weight and travel distance
- Identifying the max. load for the selected E-Chain®.

If you cannot meet your application demands using these parameters, keep in mind these specifications are conservative maximum values. In individual cases, they can be exceeded by up to 30%. Special solutions are also possible. Please consult igus®, we will be happy to assist you with your application.

# E-Chain System® Design
# Unsupported, Sag $FL_B$
# Fill weights up to 60.48 lbs/ft (90.0 kg/m)




**The maximum travel -**always amounts to **2 x 2 x $FL_G$ or $FL_B$** if the fixed end is in the center of the travel. In this case, the following applies:

***E-Chain® length:*** $L_K = S/2 + K$

***S*** = Length of travel

***R*** = Bending radius

***H*** = Nominal clearance height

$H_F$ = Required clearance height

***K*** = $\pi \bullet R$ + "safety buffer" Add-on for bending radius

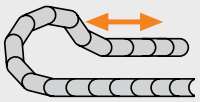
(*K* is taken from the data tables of the individual igus® series

## Diagram Series

You will find both diagrams for each series listed individually in the catalog!

| | |
|---|---|
| E2/000 | chapter 4 |
| E2 / RX E-Tubes | chapter 5 |
| E4.1 | chapter 6 |
| E4-1 light | chapter 6 |
| E4/light | chapter 6 |
| E6 | chapter 7 |
| E6-1 | chapter 7 |

## More Information ➤ www.igus.com



# E-Chain System® Design
# Gliding, Long Travel Applications

**Recommended ratio of E-Chain® inner width *Bi* and bending radii *R* (on long travels)**

The minimum inner widths of an E-Chain® on long travels depends on the bending radii of the E-Chain®.

**igus® specifies:** $Bi_{min.} = {}^{R}/_{4}$

Please contact igus® if you have large bending radii on long travel lengths.

**Example of lowered mounting height**

## Gliding applications principle

For long travels, the upper run of the igus® E-Chains® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on a glide bar. The illustrations shown below depict the gliding application principle. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the E-Chain® length is calculated as follows: $L_K = {}^{S}/_{2} + K_2$. Depending on the technical data and the selected E-Chain®, the mounting point of the moving end of the E-Chain® must be lowered on some units.

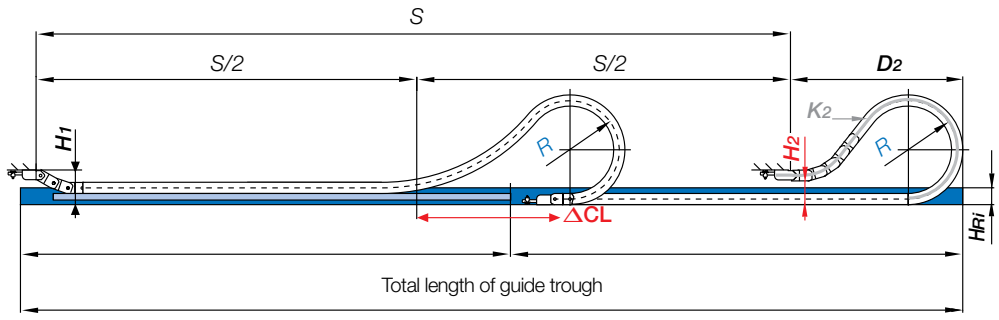
**Lowered mounting height:** In our system analysis for long travels, we give exact details for your specific application.

**Long travel with E4 Rol E-Chain®, guided in a igus® steel guide trough**

***For center mounted applications, E-Chain® length:***

$$L_K = {}^{S}/_{2} + K$$

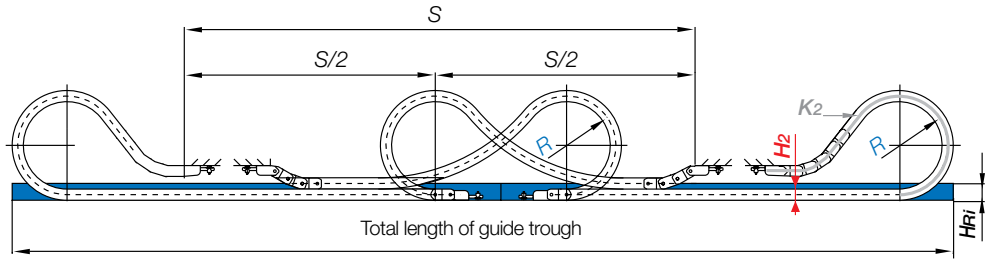
| | | |
|---|---|---|
| $S$ | = | Length of travel |
| ${}^{S}/_{2}$ | = | half Length of travell |
| $R$ | = | Bending radius |
| $H_{Ri}$ | = | Trough inner height |
| $H_F$ | = | Required clearance height |
| $K_2$ | = | Add-on if the mounting bracket location is set lower (specified by igus®) |
| $D_2$ | = | Over length for long travels gliding |
| $H_2$ | = | Installation height with lowered mounting |




**The function of an E-Chain System® for gliding applications (schematically)**
**The fixed end of the E-Chain® is located in the center of the travel distance**

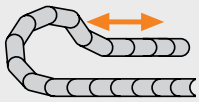
**Advantages lowered moving end:**

- Space saving
- Longer travels possible
- Higher service life due to less wear




**For a configuration involving two opposed E-Chains®, the travel is measured as shown and selected when these factors apply: ● Restricted space ● High loads**

# E-Chain System® Design
# Gliding, Long Travel Applications



## Advantages for long travel applications with igus® E-Chains®

- Travels over 1312 ft (400 m)
- Gliding speeds up to 16.4 ft/s (5 m/s) (more in individual cases)
- Service life of 10 years and more with igus® E-Chain Systems®

**Further advantages of the design are:**

- Many different types of cables and hoses can operate side by side in the same system (i.e. electrical, data, fiber optic cables with hydraulic and pneumatic hoses)
- Space-saving installation
- Quiet operation
- High accelerations
- Durable in wind, weather, dirt, and chemicals
- Simple assembly of the modular system on the spot
- Rapid assembly and replacement of cables and hoses

**E4 E-Chain® with extension links for many cables and large hoses on a long travel application**

Gliding applications = pivoting mounting brackets

## Design assistance, free of charge

We recommend that igus® calculate every gliding application for you. We will always offer the most cost-effective solution, taking the technical requirements and operating safety into consideration. The system solution designed by us is also automatically given an igus® system guarantee.

**To be able to advise you accurately, we require the following specifications:**

- Travel in (ft) or (m)
- Travel speed (ft/min) or (ft/s)
- Acceleration (ft/s²)
- Fill weight (lbs/ft)
- Maximum cable/hose outer diameter (in.) or (mm)
- Type and number of cables and hoses
- Required bending radius (in.) or (mm)
- Cycle frequency (n/day or n/hour)
- Technical environment.

**Please call us and within hours you will receive a detailed system proposal!**

Please call us and within hours you will receive a detailed system proposal

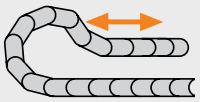
## Trends in long travel applications

New developments are currently being tested:

- Travels up to 2,625 ft (800 m). We break through the 1,312 ft (400 m) barrier by means of special components. Please ask us for more specific information.
- Long travel systems “off the reel.” Complete made-to-spec E-Chain Systems® - with cables, connectors, strain relief - are delivered on the reel and “rolled off” into the pre-assembled guide troughs. Travel distances up to 328 ft (100 m) are delivered this way today, with longer travels possible.
- Long travel **without** guide troughs. Our AUTO-GLIDE system consists of self-guiding E-Chains®. We have recently extended this technology to large E-Chains® and currently offer travels up to 328 ft (100 m).
- Long travels with very small E-Chains, for example, the igus “Flizz” offers the guidance of a single bus cable inside a small E-Chain with high acceleration on long travel applications.

**Longest igus® travel of 2,018 ft (615 m) with Rol-E-Chain and Chainflex® cables**

More Information ➤ www.igus.com



# E-Chain System® Design
# Gliding, Long Travel Applications

**If the fixed point is in the center of the travel, use half of the guide trough with glide bars and the other half of the guide trough without glide bars**
**$H_{Ri} \geq 2 \times h_a$**
**$B_{Ri} \geq$ Ba + .20” (5 mm)**

*Ba* = E-Chain® outer width
*Bi* = E-Chain® inner width
*ha* = E-Chain® outer height
$H_{Ri}$ = inner trough height
$B_{Ri}$ = inner trough width
(depending on *Ba*)

$H_{Ri} \geq 2 \times ha$
$B_{Ri} = Ba + 4$
(Aluminum SuperTrough)
$B_{Ri} = Ba + 5$
(Steel guide trough)

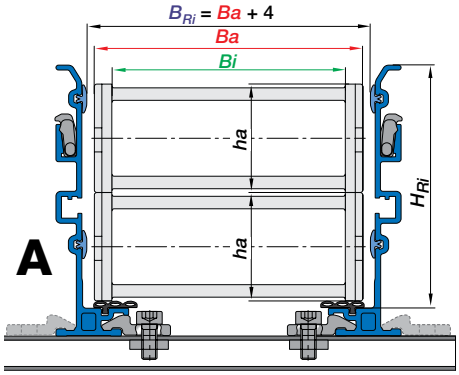
## Guide troughs

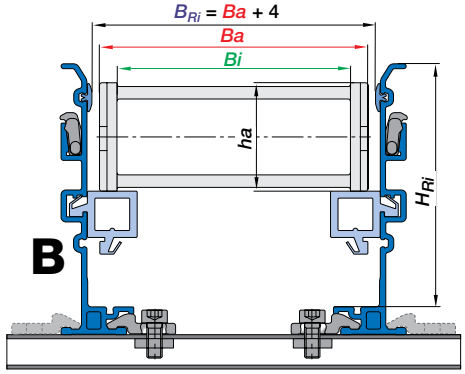
Guide troughs are used for long travels. They allow igus® E-Chains® and E-Tubes to continue smooth low-friction operation in these long travel situations. Diagrams are shown below. The height of the trough must be at least twice the total chain link height. The sides must provide a chamfered opening. The trough inner width is the same as the chain outer width, plus .16 (4 mm) for Aluminum SuperTrough and plus .20” (5 mm) for Steel Guide Trough. When the upper run cannot glide on the lower run, glide bars must be installed along the sides of the trough. igus® recommends the use of polymer glide bars. They are optimally matched to the chain material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus E-Chains®.

**Important:** When assembling the trough parts, the following points must be given particular attention:

- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the chain and the glide bars
- Solid connection with the glide surface

**These points must be observed when using assembly-friendly igus® guide troughs**



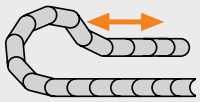

**A) Aluminium SuperTrough without glide bars - upper run glides on the lower run**
**B) Aluminium SuperTrough with glide bars.**
**We recommend the use of igus® polymer glide bars. They are optimally matched to the E-Chain® material and achieve the lowest values for friction, noise and wear.**

### Glide friction values for igus E-Chains® made of igumid G and various glide bars:

| igumid G | igus® Polymer Glide Bar | Galvanized Sheet Steel | Anodized Aluminum | Stainless Steel |
|---|---|---|---|---|
| Friction value (dynamic) | 0.19 | 0.45 | 0.54 | 0.48 |

Source: igus® Laboratory

# E-Chain System® Design
# Gliding, Long Travel Applications



## Travel speeds and accelerations

Travel speeds up to 19.7 ft/s (6 m/s) in continuous operation are possible and in use on current applications. In special cases, up to (10 m/s) are possible after consultation with igus®. For example, E4 Series E-Chains® achieve **speeds of 72 ft/s (22 m/s) and accelerations of 2,572 ft/s² (784 m/s²)** in crash test units. (Only a few thousand cycles per year are required in this situation.) Acceleration plays a large role in the calculation. Differentiations must be made between normal operational acceleration and a sudden jolt of acceleration such as unexpected stops or so-called "E-stops." Even in these situations, igus® E-Chains® prove to be very durable.

**Automated storage/retrieval system with System E2 and Chainflex® cables - travels up to 262 ft (80 m) and speed of 14.8 ft/s (4.5 m/s)**

## Service Life

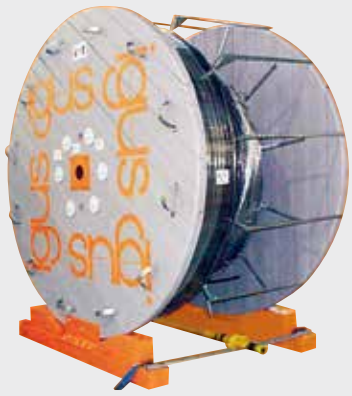
We offer service life calculations for your application based on our extensive gliding application experience. As developers of plastic bearings, we possess vast material behavior knowledge which we apply to the development of E-Chains® as well. Units with 656 ft (200 m) travels have been in operation for 8 years with minimum maintenance. Units up to 197 ft (60 m) travels have been in operation for 15 years with almost no maintenance. (Please consult igus® for references and calculations for your project.) The maintenance-free aspects of igus® E-Chain Systems® over long periods and under harsh operating conditions is often the deciding factor in choosing igus. Our system guarantee (depends on the application) provides additional peace of mind.

**Corrosion-free guide troughs are available in the material:**

- Normally galvanized
- Stainless steel
- Seawater resistant
- Aluminum

## Technical environment

Long travel applications using igus E-Chains® run in water, in dirt, in the tropics, in explosion risk areas (with special design features) and many other conditions. Guide troughs can be supplied in corrosion-free materials. You will find more details in the **Technical Environment** section of this chapter.



**Long travel "off the reel." Up to 328 ft (100 m) travel pre-assembled and ready to install**

## Calculation

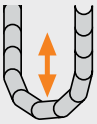
Comprehensive tests place us in the position of knowing our products precisely. Important factors in these tests are:

- Push-pull forces under both ambient and extreme temperatures
- Humidity and dirt
- Friction values of the polymers, alone and against various glide surfaces
- Behavior of electrical cables under push-pull conditions
- Behavior of hydraulic and media hoses under push-pull conditions
- Service life, and noise generation.

**If we cannot calculate your application based on these factors, we will perform a practical test for you in our laboratory. Please consult igus®.**

### Technical data - gliding applications

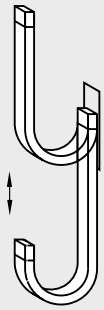
| | | |
|---|---|---|
| Travel max | 1,969 - 2,625 ft (600-800m) | |
| Travel speed max | 32.8 ft/s (10 m/s) | |
| Travel acceleration max | 164 ft/s² (50 m/s²) | depending on application, please consult igus® |
| Fill weight max | 47.04 lbs/ft (70 kg/m) | depending on application, please consult igus® |



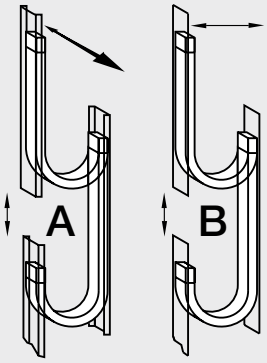
# E-Chain System® Design
# Vertical, Hanging Applications

Standard

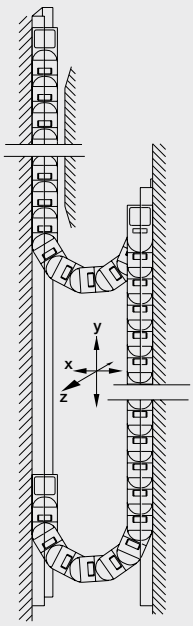
We recommend **locking mounting brackets** for hanging applications. In restricted spaces, other solutions are possible with consultation.



In most cases, vertical motion applications do not require lateral guidance




If lateral acceleration will occur in two directions, guidance is necessary




Principle of a hanging igus® E-Chain® with lateral guidance, lateral accelerations in both directions are contained

**Hanging assembly with one-sided U profile**

## Vertical, hanging applications

In accordance with the principle of hanging applications, heights of over 328 ft (100 m) are possible with igus® E-Chains®. E-Chains® with interior separation allow many different types of cables/hoses to operate together in the same system without becoming entangled.

## Cables and hoses

Two important factors in vertical hanging applications are how the cables and/or hoses lay in the E-Chain® and how they are secured at the end points: all cables and hoses must bear their own weight when hung. The E-Chain® should house and protect the cables and should not absorb any further tensile forces. igus® interior separation elements should be used for distinct division of all cables and hoses. The cables and hoses must be secured carefully to both end points of the E-Chain®.The strain relief must be designed so that the opposite run cannot catch. Safe strain relief and clear separation of the cables/ hoses are the basic prerequisites for hanging installations. **Cables and hoses must be able to move freely and bear their own weight.**

## Vertical motion without lateral acceleration

If the application involves vertical motion without lateral acceleration, the E-Chain® can be installed without lateral support. If the space restrictions are severe, an igus E-Chain® with no camber must be specified.

## Vertical motion with lateral acceleration

In most cases where lateral acceleration occurs, lateral guidance of the E-Chain® must be provided. The diagram shows an example of such guidance. Partial guidance is also an option, however, it must at least cover the area in which the E-Chain® may sway. Lateral acceleration can occur in two directions. Lateral guidance must be installed accordingly. If you have a choice, the layout in **Figure A** is preferred. Additional guidance along the side of the E-Chain® helps to stabilize the chain further.

# E-Chain System® Design
# Vertical, Hanging Applications
# Guidelok Slimline F

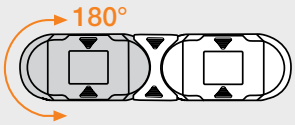
## No camber version with igus® special NC E-Chains®

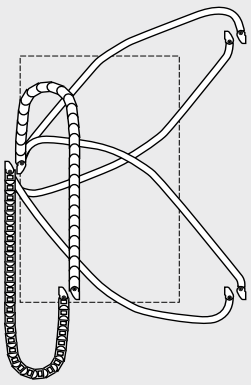
A normal igus® E-Chain® with camber is suitable for hanging use if enough space is available. Camber contributes to the quiet operation of the E-Chain®, required by the slightly bulbous appearance a little more space. If there is not enough room, a “no camber” E-Chain® must be installed. This is frequently the case with storage and retrieval systems in narrow aisles. igus® offers numerous NC versions without camber. With igus® E4-1 it is easy to create a NC-version. Simply rotate the E-Chain® outer link 180°.

Order example: **E4-32-10-175-0-NC** (No Camber)

**The E4-1 system is one of igus® best solutions for hanging applications**

With E4-1 it’s easy to create a NC-version. Simply rotate the E-Chain® outer link



Hanging and standing igus® E-Chain systems® can reach different points

### Technical data - vertical, hanging

| | | |
|---|---|---|
| Travel height max. | 328 ft (100 m) | |
| v max. | 65.6 ft/s (20 m/s) | dependent on height and strength of the E-Chain® |
| a max. | 164 ft/s² (50 m/s²) | dependent on height and strength of the E-Chain® |

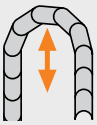
## Special solution
## Guidelok slimline F - safe vertical guidance

- Up to 23 ft/s (7 m/s) and 32.8 ft/s² (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the locking mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely guided

**More information ➤ Chapter 9**

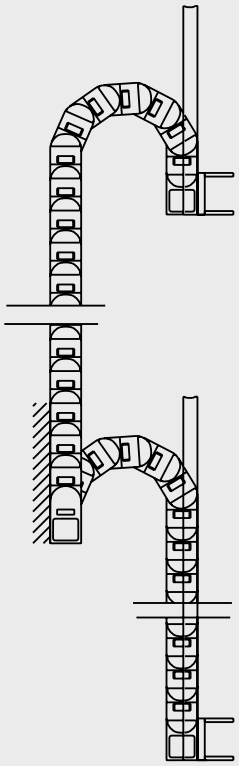
**igus® Guidelok slimline F vertical guidance in a high-bay warehouse**

# E-Chain System® Design
# Vertical Standing Applications

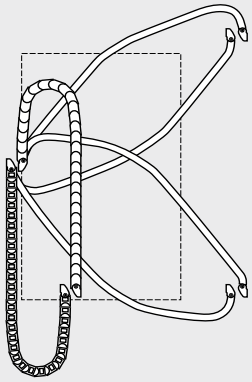


Standard

We recommend locking mounting brackets for standing applications



Options for a standing application with support of the first chain links: on the left, with U-shaped guidance; on the right, with the support of the first chain links.



Hanging and standing igus® E-Chain systems® can reach different points

**Locking KMA mounting brackets can be directly attached flush to the machine**

**Standing application with support of the first chain links; R68 E-Tube**

## Vertical standing applications

Standing applications are standard on many machines and plants. Cables will be guided safely in vertical strokes.

## Mounting brackets

The mounting brackets must be attached so that the E-Chain® cannot bow out.
The igus® program offers locking or one-sided locking mounting brackets for almost all types of E-Chains®. Locking KMA mounting brackets are highly recommended because they can be attached flush to the machine.

## Cables and hoses

Cables and hoses must be laid in the chain so that they can bend freely. For precise guidance of the cables and hoses, we strongly recommend igus® interior separation elements. Cables must be strain relieved at both ends

## Lateral acceleration

If lateral acceleration occurs, the E-Chain® should be supported along the outer radius. For higher chain heights, it is generally recommended that at least the first three links on the outer radius be supported. For maximum heights and weights, the entire distance must often be supported. Due to the wide variety of combinations involving weights, stroke heights, E-Chain® types and bending radii, we strongly recommend you consult igus® for design assistance.

## Combined movements

Combined vertical and horizontal movements are possible with igus E-Chains® for a cost-saving solution.

For higher E-Chain® stroke heights, it is generally recommended that at least the first three links along the outer radius be supported.
For maximum heights and strokes, the whole chain must often be supported.

With lateral acceleration, the E-Chain® must be supported and, depending on the direction of this acceleration, be guided along the side.

### Technical data - vertical, standing

| | | |
|---|---|---|
| Max. stroke height | | |
| - without support | ≈ 13 ft (4 m) | |
| - with support of the first E-Chain® links | ≈ 19.7 ft (6 m) | |
| - with full support | ≈ 65.6 ft (20 m) | |
| v max | 65.6 ft/s (20 m/s) | dependent on stroke height and weight |
| a max | 164 ft/s² (50 m/s²) | dependent on stroke height and weight |

# E-Chain System® Design
# Vertical Standing Applications
# Zig-Zag - LiftBand

**Decommissioning of a nuclear power station. Zig-zag application with igus® E-Chains®**

## Zig-zag design

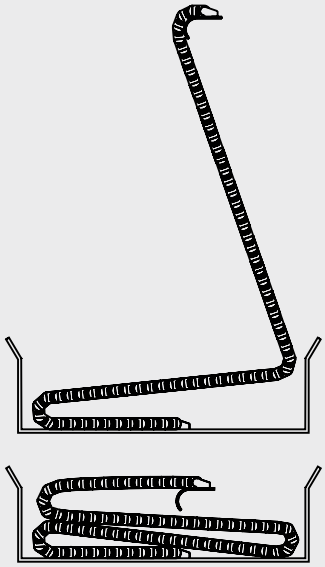
The modular design of igus® E-Chains® facilitates this space-saving and unconventional solution. For modern platform technology, such as performance stages, a variety of cables/hoses which adjust the stage height must be accommodated. Lack of space almost invariably presents difficulties. The photo above shows an E-Chain® in a zig-zag configuration produced by incorporating reverse bend radii or ***RBR***. The unextended E-Chain® is stored in a basket. When the platform is raised, the E-Chain® unfolds, generating little to no noise. This construction is possible with E4-1 System as well as many other E-Chain® systems. Please consult igus® for these kinds of applications.

### Technical data - zig-zag

| | | |
|---|---|---|
| Travel max. | 131 ft (40 m) | |
| v max. | 1.31 ft/s (0.4 m/s) | depending on application, please consult igus® |
| a max. | 3.28 ft/s² (1.0 m/s²) | depending on application, please consult igus® |

Standard

We recommend pivoting mounting brackets for zig-zag applications



**Space-saving solution - stroke heights of over 65.6 ft. (20 m) are possible**

## Special solution
## LiftBand -
## vertical guidance with limited space

Modular, silent, space saving - vertical guidance for energy, data and media. High vertical applications that have plenty of space horizontally but allow only for little system height can be implemented with the LiftBand.

- Available in 2 sizes
- Alternative to Zig-Zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Maximum expansion length: 42.7 ft. (13m)

**More information ➤ Chapter 9**

# E-Chain System® Design
# Side Mounted Applications

We recommend locking mounting brackets for side-mounted applications

Side-mounted E-Chains® - are strongly recommended if the installation height is restricted.

E4 E-Chains® assembled in an unsupported manner on the traveling column machine. The Y and Z axes have a travel of 314.9" (8,000 mm) and 68.9" (1,750 mm) at a speed of 82 ft/min (25 m/min).

**E-Chain®, side-mounted, supported System E4**

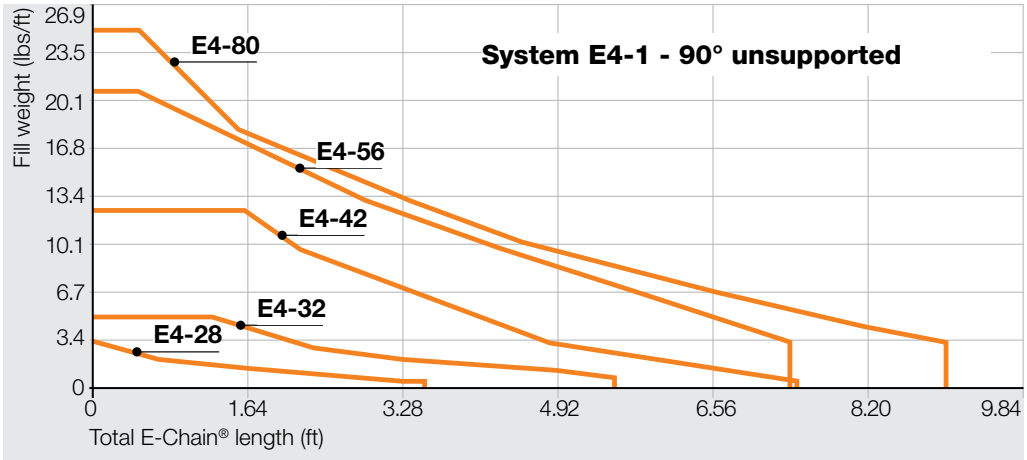
## Short travels with or without support

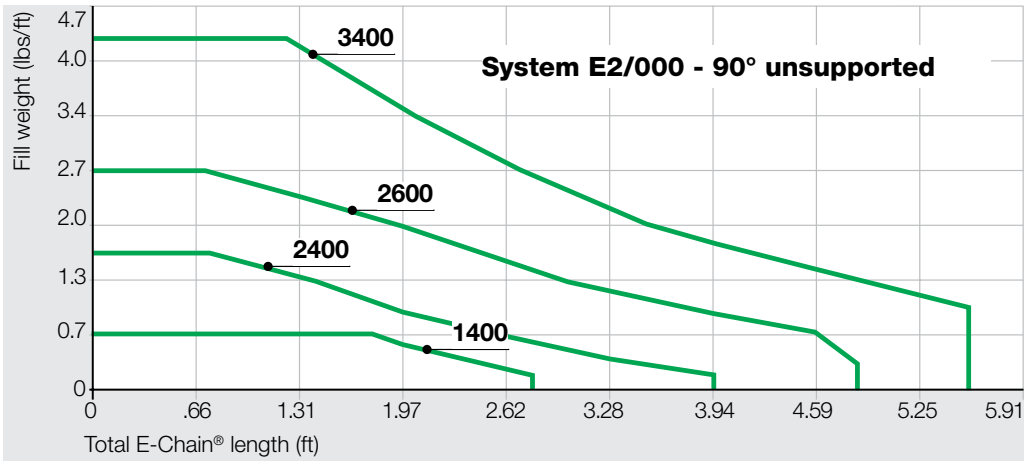
igus® E-Chains® placed on their side can be used unsupported to a limited extent. The turned "unsupported length" in this case is dependent on the following factors:

- Fill weight
- Width of the E-Chain®
- Bending radius
- Parallel placement

The greater the fill weight of the E-Chain®, the shorter the available unsupported length. When placed on its side, the chain width, in effect, becomes the height. As this "height" increases, the E-Chain System® becomes proportionally more stable. Small bending radii provide greater stability. If further movement in a second axis is added to the parallel motion of two chains, the unsupported length is impaired. For applications with low fill weight, the standard mounting brackets are adequate. If, however, the fill weight is high and the travels are long, the E-Chain® must then be supported either in whole or in part. Due to the variety of application possibilities, we strongly recommend you make use of our consulting services.

## Example load diagrams for E-Chains® side-mounted at 90°




**The unsupported lengths can be extended by supporting the links next to the mounting brackets. Please consult igus® for more series and details**

# E-Chain System® Design
# Side Mounted Applications

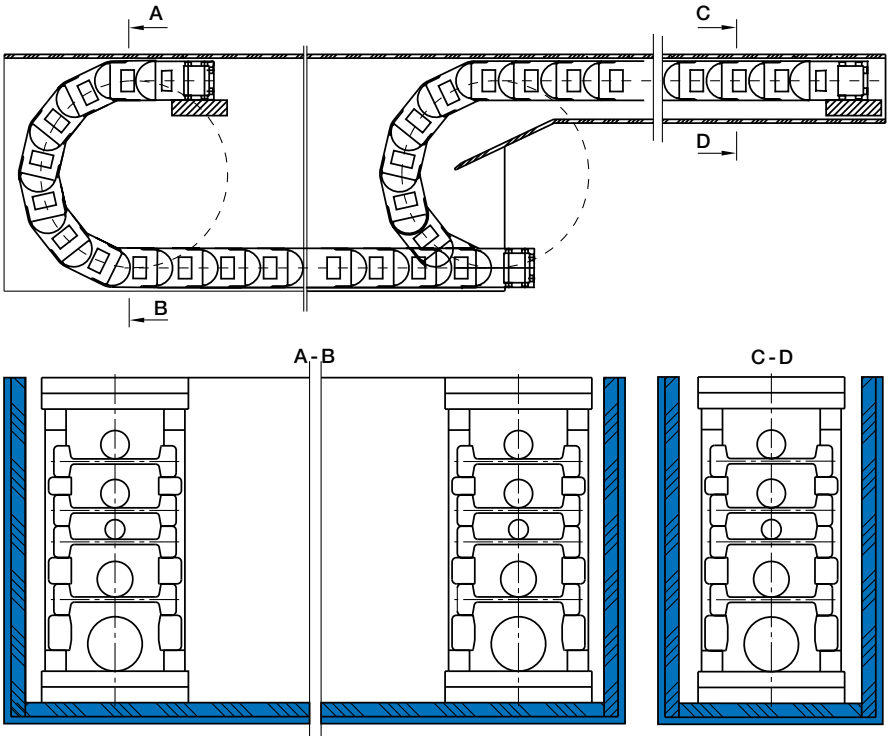
System E4 E-Tube in direct chip area E4/light

## Long travel, gliding

Side-mounted E-Chains® can travel over 328 ft (100 m) with adequate guidance. All chain types are designed to operate gliding on their side. The corresponding glide surface is usually an igus® polymer, stainless steel or galvanized steel, depending on how high the demands on the travel speed and service life are. Roller and ball bearings or additional gliding elements are not necessary for igus® E-Chains®.

## Cables and hoses

Cables and hoses must be guided so that the E-Chain System® can move freely at all times. The igus® modular separation options offers numerous possibilities, such as separators and spacers, to keep these cables/hoses separated and bending freely for maximum service life. igus® will gladly provide an application analysis, free of charge.



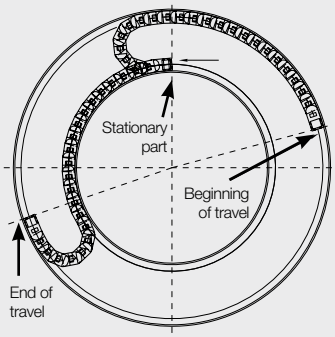

Principle of a guide trough for long travel, side-mounted

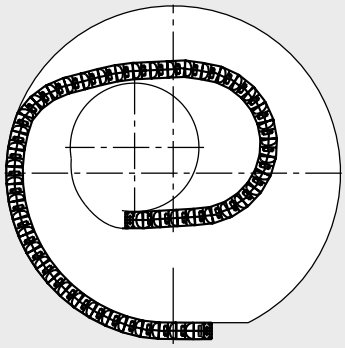
igus® - Series E4/4 with partial support

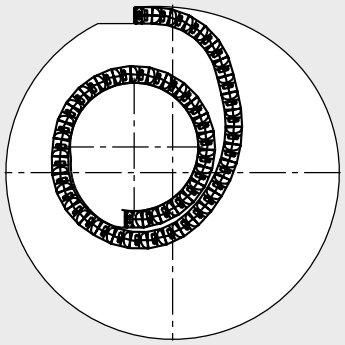
Unsupported - System E4

# E-Chain System® Design
# Rotary Motion - RBR - Applications

We recommend pivoting mounting brackets for most applications with rotary motions





**Standard E-Chain®
3500-075-200-0,
angle of rotation 225°**

**RBR-rotary movement with
igus® System E4, installed on a crane**

**Rotary motion with a standard igus® E-Chain®**

**Circular motion of 180° with standard E-Chain® on a crane turret drive**

## Rotary motion with an “RBR”

“RBR” is “reverse bending radius” and means that the E-Chain® can bend in two directions. Each igus® E-Chain® can incorporate RBR designs, with the exception of several radii, for the E-Tubes R117 to R9850 and for the Series 07, 09, 14, 15, and 17. The RBR does not necessarily need to be identical to the normal bending radius of an E-Chain®. For example: Part No. E4-32-15-100/425-0, describes a Series E4-32 E-Chain® with an inner width of 5.91 (150 mm), standard bending radius of 3.94 (100 mm) and RBR of 16.73 (425 mm).

Most rotary motions can be achieved with the RBR option. **Angles of rotation up to 540°** have been achieved. Below is an example of rotary motion using an RBR E-Chain®. Please consult igus for your particular application.

Rotary movements require less installation height. The E-Chains® glide mostly on surfaces made of polymer, stainless steel or steel and are guided through channels into a rotary movement. (See “side-mounted” for further design tips.) Bending radius, circular radii and E-Chain® widths are variable with this product line.

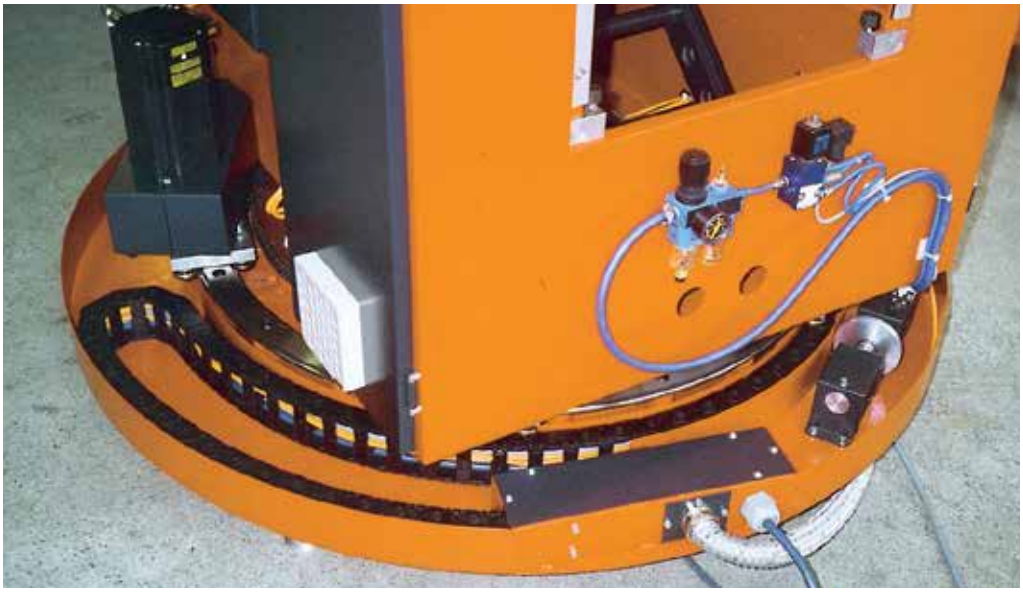
## Rotary motion with standard E-Chains®

The photo to the left shows an application which was achieved using “standard” E-Chains® (standard, in this case, means that the E-Chain® only bends in one direction). Such solutions are possible if a **great deal of space** is available and if the angles of rotation are limited to a maximum of 450°. All igus® E-Chains®, E-Tubes and Chainflex® cables are appropriate for this situation.

## Technical data - rotary motion RBR

| | | |
|---|---|---|
| Max. angle of rotation | 540° | more upon request |
| v max | 6.56 ft/s (2.0 m/s) | more upon request, depending on the application |
| a max | 65.6 ft/s² (20 m/s²) | more upon request, depending on the application |

# E-Chain System® Design
# Rotary Motion - RBR - Applications



System E2 medium with 360° *RBR* rotary motion on a robot

## Product range for rotary motions with RBR

E-Chains® with “RBR” are available as standard from stock for the complete Triflex® range. In addition, we supply a number of E-Chains® which are molded with “RBR”. For all other types, “RBR” requires modification We will be more than willing to offer you this option.

The E-Chain® Series appearing in the table are RBR versions available from stock. Almost all igus® E-Chains® can be delivered as a RBR version. Please contact us for an special inquiry.

- Chainflex® cables with TPE outer jacket are specially suited for E-Chains® with RBR option
- Please use for E-Chains® with RBR option a strain relief only for the moving end

## Table of RBR E-Chains® available from stock

| Part Number | Series |
|---|---|
| 03-05-10/70 | E2 micro |
| 05-16-018/018 | E2 micro |
| 06-20-018/018 | E2 micro |
| 06-30-018/018 | E2 micro |
| 06-64-018/018 | E2 micro |
| 10-1-028/028 | E2 mini |
| 10-1-038/600 | E2 mini |
| 10-1-048/048 | E2 mini |
| 10-1-075/220 | E2 mini |
| 10-2-028/028 | E2 mini |
| 10-2-038/600 | E2 mini |
| 10-2-048/048 | E2 mini |
| 10-2-075/220 | E2 mini |
| 10-3-028/028 | E2 mini |
| 10-3-038/600 | E2 mini |
| 10-3-048/048 | E2 mini |
| 10-3-075/220 | E2 mini |
| 10-4-028/028 | E2 mini |

| Part Number | Series |
|---|---|
| 10-4-038/600 | E2 mini |
| 10-4-048/048 | E2 mini |
| 10-4-048/400 | E2 mini |
| 10-4-075/220 | E2 mini |
| B15i-050-100/460 | E2 mini |
| 1400-050-075/075-0 | E2/000 |
| 1500-038-075/450-0 | E2/000 |
| 2400-09-055/250 | E2/000 |
| 2700-15-150/090 | E2/000 |
| 250-05-060/060 | E2 medium |
| 250-07-060/060 | E2 medium |
| E/Z14-1-038/038 | E-Z Chain® |
| E/Z14-2-038/038 | E-Z Chain® |
| E/Z14-3-038/038 | E-Z Chain® |
| E/Z14-3-075/075 | E-Z Chain® |
| E/Z14-4-038/038 | E-Z Chain® |
| TE14-50-028/028 | SnapChain |
| TE26-120-063/063 | SnapChain |

Many igus® E-Chains® are available with “RBR” -reverse bending radius. Please see the ‘Product Range’ for relevant series.

Vertical rotary motion of an E2 E-Chain®

The E-Chain® series appearing in the table at the left are “RBR” versions available from stock. Almost all other igus® E-Chains® can be special ordered as “RBR”. Please contact us for any special inquiry.

# E-Chain System® Design
# Rotary Motion - RBR - Guide Troughs

Rotary motion with RBR, diameter 236.2” (6,000 mm), with RBR the inner ring rotates

**Guide troughs for rotary applications**

## igus® guide troughs - standard modular system RM

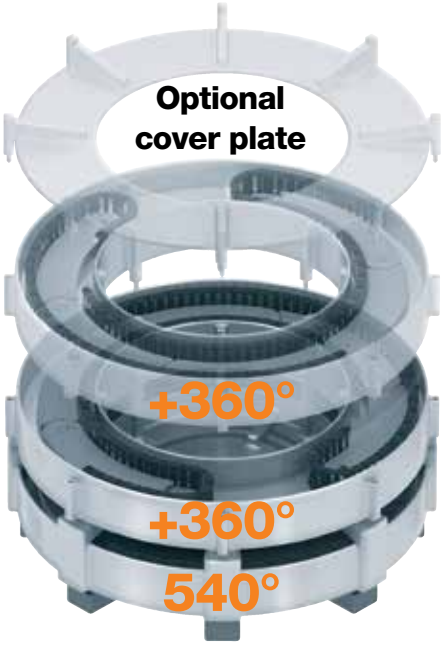
For rotary motions up to 540° igus® offers a modular system of guiding trough systems. Those systems are divided into an inner and an outer ring. Since one ring is moving together with the E-Chain® there is no relative movement between E-Chain® and trough, so the wear is reduced to an absolute minimum. Depending on the application they are made from galvanized steel or stainless steel.

Typical application areas:
offshore, stacker/reclaimer, bucket-wheel excavators, rotary cranes, other rotating applications

## Realize 900° and more with igus® Multi Rotation Modules (MRM)

igus® Multi Rotation Modules help to realize rotating movements up to 900° and more. Thanks to stackable add-on modules the angle of rotation can be extended "virtually" indefinitely. The Multi Rotation Modules are also ideally suited for rotary motions with high fill weights and limited space.

- Several individual systems are stacked on each other and form a complete system
- The maximum rotation of the individual levels can easily be added, thereby enabling rotary motions up to 900 degrees and more
- Compact design enables the operation even in tight spaces, and can be extended as needed
- High fill weights possible
- E-Chains® can be assembled easily
- Peripheral speeds up to 3.28 ft/s (1 m/s)
- One layer for rotation movements up to 540°, two layers for up to 900°, higher rotation angle possible with more layers




## Functional principle

- As the defined rotation angle of the lower layer is reached, the next upper module is carried along automatically due to an integrated connection system
- The construction minimizes potential interference. The Multi-Rotation Module-System is ideal for rotary applications, heavy loads and for harsh environments
- Unlike other systems using sliding contacts, the E-Chain® can also guide hoses for air, gas or fluids, as well as bus and fiber optic cables

# E-Chain System® Design
# TwisterChain® - TwisterBand - E-Spool

## Circular and spiral movements up to 540° - TwisterChain®

- Higher loads and smoother running
- igus® 2nd generation of TwisterChain® circular E-Chains® significantly improved smoothness, stability and strength
- The TwisterChain® has a modular construction for width, height and radius
- Stronger with intermediate link - more fill weight possible
- 25% less weight than existing TwisterChain®
- Rotary speeds up to 3.28 ft/s (1 m/s) and more, rotary/spiral movements up to 540°
- Highly dynamic and smoother running (with the guide trough Type 01)

**More information**
➤ **see Chapter 8**

## Rotary movements in small spaces - TwisterBand

- Compact
- Cost effective
- Low wear and low maintenance in a confined space
- Energy (in the process), data and media are kept secure
- Rotary movements up to 7000° (Installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- Rotary speeds up to 360°/s possible
- Minimum installation space, fits closely around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Compact, modular and lightweight

**More information**
➤ **see Chapter 8**

## **Special solution:** E-Spool - the cable drum without a slip ring

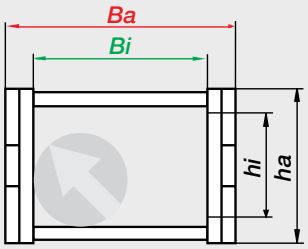
- Route many different cables in very narrow spaces
- Different media and diameters possible in one drum
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "E-Chain® junction" - E-Chain® rolled into the home position, access paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retrospectively added or changed
- Alternative to zig-zag solutions
- Maximum deployment and retract speed: 3.28 ft/s (1 m/s)

**More information**
➤ **see page Chapter 9**

# E-Chain System® Design
# Cable and Hose Packages
# General Rules

Rules for:
- Maximum conduit diameters
- Shelving
- Bend radius

Electrical cables need at least 10% reserve space all around, hydraulic hoses require 20%




The maximum conduit diameter is specified for each series in its respective chapter

**Hydraulics and electric cables are separated from one another in this example**

## General rules for cables and hoses in E-Chains®

The key advantage of an igus® E-Chain System® is the safe accommodation of various forms of data cables and energy suppliers in one system. We recommend the optimal separation layout of the cables/hoses in the carrier, but you, the customer, are still afforded the final choice. It is possible, for instance, to maintain minimum distances between bus and motor cables and mix pneumatics, electric and hydraulics in the same compartments. In addition to the quality of the cables used, the arrangement of each cable/hose within the chain and the space allowed, are important for the service life of the system. Various separation options enable the adaptation of the E-Chains® to the specific requirements of each respective application. In this chapter, we give you detailed recommendations. Due to the variety of the application parameters, we strongly recommend you take advantage of our free consultation services. Simply give us a list of your cable requirements (or merely the required electrical or other services) and you will receive our recommendation by the end of the next business day.

## Maximum cable and hose diameters

The maximum cable and/or hose diameter corresponds to the inner height of the selected E-Chain®/ E-Tube, with additional minimum clearance. This minimum clearance would be, for example, 10% for electrical round cables, 20% for hydraulic hoses. An E-Chain® is ideal if a minimum lateral gap to the next cable or hose has been factored in. Depending on the nature of the cables, the dynamics, and the expected service life, more clearance must be allowed. In specific cases, clearances may be altered further. Please consult igus®.

**Neatly laid cables with igus® interior separation**

## E-Chain® Interior separation

Cables and hoses with very different diameters should be laid separately. The separation is achieved using modular separators. Cables and hoses must **under no circumstances** have the opportunity to tangle. Therefore, the clearance height of a compartment with several similar cables or hoses next to one another **must not amount to more than one and a half times the cable/hose diameter.**

**The igus® modular E-Chain System® solves all known requirements for interior separation**

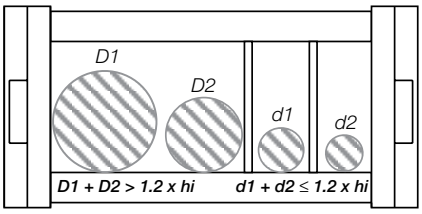
# E-Chain System® Design
# Cable and Hose Packages
# Distribution Rules

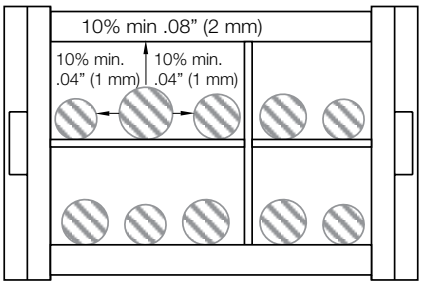
## Reasons for distribution rules

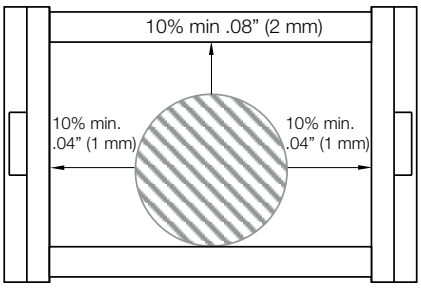
**The cables and hoses must be laid so that they can move freely at all times and so that no tensile force is exerted at the radius of the E-Chains®.** For high-speed applications and high cycles, **cables or hoses must not be laid on top of each other without horizontal separation.** The standard values for this are: Travel speed over **1.64 ft/s (0.5 m/s)** and cycles over **10,000 per year.** igus® interior separation offers a safe solution for this situation.

## Further guidelines for distribution

The cable or hose weight should be symmetrically distributed along the width of the E-Chain®. Cables and hoses with different outer jacket materials must not be allowed to "stick" together. If necessary, they must be laid separately. All igus® Chainflex® cables can be combined with each other and all other brands of cable or hose. The cables and hoses should always be fixed at the moving end. The fixed end should always involve strain relief. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses **Generally, the faster and more frequently the E-Chain® operates, the more important the exact positioning of the cables and hoses inside the chain. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications.**




**Clearance space "all-around" for round electrical cables**

### Distribution Rules

**D1 + D2 > 1.2 x hi**

**Rule 1:** If D1 + D2 > 1.2 x chain inner height, no separation between the two cables/hoses is necessary. Two cables or hoses should never be left unguided on top of one another or be allowed to become tangled.

**D1 + D2 ≤ 1.2 x hi**

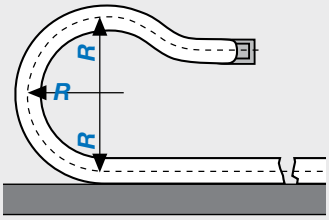
**Rule 2:** If d1 + d2 ≤ 1.2 x chain inner height, a vertical separator or a horizontal shelf must be used to reduce the inner height, thereby preventing the entanglement of d1 and d2.

| Clearance space in % | |
|---|---|
| Electrical round cables | 10 |
| Electrical flat cables | 10 |
| Pneumatics | 5-10 |
| Hydraulics | 20 |
| Media hoses | 15-20 |

## Bend radius *R*

The bend radius of our E-Chain® depends on the thickest or stiffest cable or hose in your application. The bend radii of the E-Chains® should be adjusted to the recommendations of the cable or hose manufacturer. The selection of a larger radius than the minimum will positively affect service life. The specification of minimum bend radii for cables and hoses refers to use at normal temperatures; other bend radii may be recommended. Please ask your cable or hose supplier for details. We recommend complete E-Chain Systems® - where bend radii for all cables and hoses, interior separation and service life are optimally matched. igus® Chainflex® cables permit a small bend radius of 4 x d for one million strokes

**E-Chain® with extension links supports a smaller E-Chain® with electric cables**




Pinciple sketch - bending radius *R*

# E-Chain System® Design
# Cable and Hose Packages
# Distribution Rules

Corkscrewing: an effect of improper cable and hose placement in an E-Chain®

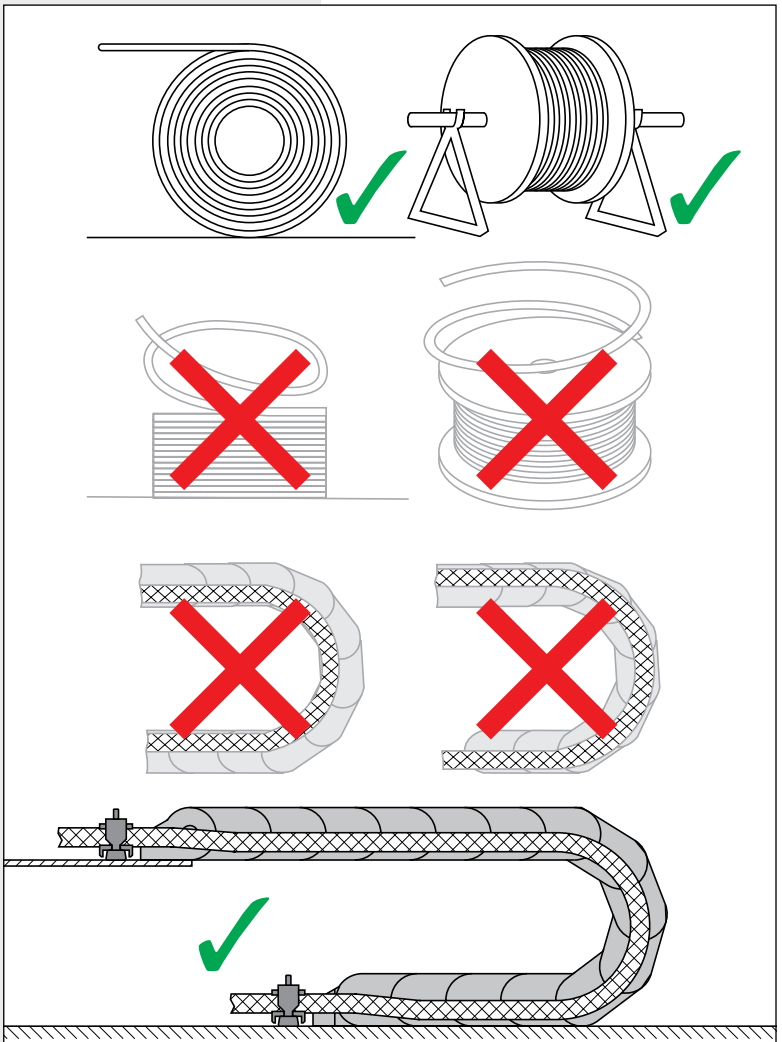
Example from igus® test laboratory: continuous development and testing of Chainflex® round electrical cables

## Round Electrical Cables

For electrical cables, the round cable is a safe, modular and cost-effective solution for E-Chain Systems®. We recommend the following criteria for selecting the proper round electrical cables:

- Small minimum bending radii and mounting heights
- Strain relief integrated directly into the mounting bracket
- Uncomplicated installation process - no hanging, laying out, etc, of cables
- Long service life at minimum bending radius
- Service life expectations for your application (short or long travel, hanging, etc.)
- Test data on service life from realistic tests
- Flexible shields for shielded cables
- Abrasion-resistant and non-adhesive outer jackets
- Large selection to avoid expensive custom designs

For bus cables and fiber optic cable, special attention must be paid to how effective transmission rates and shielding remain after millions of cycles at the minimum bending radius.



Cables must be able to bend freely. Chainflex® cables can be strain-relieved directly at the mounting bracket

## Installation and strain relief of round electrical cables

1. The cables must be laid straight, without twisting. Cables must not be uncoiled from the top of the spool. igus® Chainflex® cables are immediately ready for placement directly into the E-Chain®. They need not be disconnected or laid out before installation.
2. The cables must be laid so that each individual cable can move freely from side to side.
3. The cables must be able to move freely along the radius. This must be double-checked if the upper run operates at the cable's maximum bending radius.
4. The division of the carrier's interior using shelves or igus® interior separators is necessary if several cables and/or hoses with varying diameters are laid out. It is important to prevent cables and hoses from tangling.
5. For cables and hoses with different jacket materials, it is important to prevent them from "sticking" to one another. If necessary, they should be separated. igus® Chainflex® cables can be combined with all others.
6. Round electrical cables must be secured with strain relief at both ends. In exceptional cases, the cables may be fixed with strain relief at the moving end of the E-Chain® only. A gap of 10-30 x cable diameter between the end of the bending segment and the fixed point is recommended for most cables. Chainflex® cables can, on the other hand, be secured directly to the mounting bracket with strain relief (this has been confirmed with testing).

**We will be pleased to provide you with recommendations for complete E-Chain Systems® - where bending radii for all cables and hoses, interior separation and service life are optimally matched**

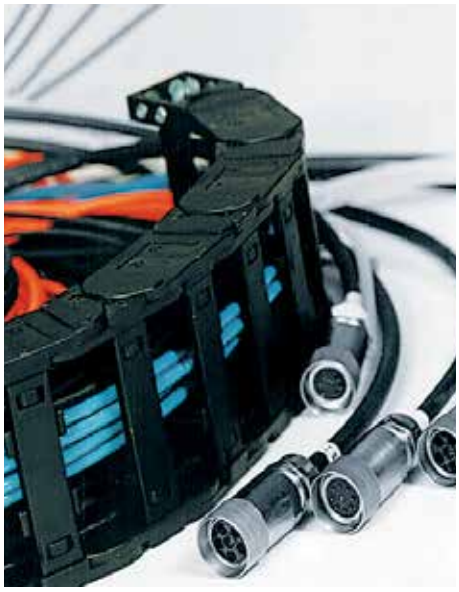
# E-Chain System® Design
# Cable and Hose Packages
# Distribution Rules

## Pneumatic hoses

In principle, the same rules apply for pneumatic hoses as for round cables. In practice, it has been demonstrated that pneumatic hoses are less susceptible to wear. After consultation, they can be laid together more closely than the “10% clearance all-around” rule. A double-sided strain relief is required under these conditions. For pneumatic hoses made of rubber, we recommend strictly following the “10% clearance” rule because they tend to adhere to each other and to other cables/hoses.

## Flat cables

Flat cables must be able to move freely along the bending radius. Two flat cables next to one another should be kept apart with separators. If two flat cables are laid on top of one another, we strongly recommend the use of horizontal igus® shelving. Flat and round cables should be laid separately in the E-Chain®. Strain relief should be attached at both ends. Flat cables are only conditionally recommended for use in E-Chains®.



**Fully pre-assembled E-Chain System® with several pneumatic and hydraulic hoses**

## Hydraulic hoses

When designing hydraulic hoses in E-Chains®, special attention should be paid to the expansion of the hoses when pressurized. Sufficient room must be left in the E-Chain® for this as well as the possible larger external diameter of the hoses under pressure. It is important for selected hoses to be sufficiently flexible (i.e. meet bending radius specified by the E-Chain®). The gliding ability and abrasion-resistant surface of the hoses are also important. All crossbars and shelves in the igus E-Chain® minimize abrasion of hoses through wide, rounded and smooth surfaces. Normally, hoses with textile braiding are more flexible than hoses made of steel wire, while maintaining smaller outer diameters and better fatigue strength under stress.
As lateral movements of the hydraulic hoses within the chain can lead to increased abrasion of the hose material, they should be secured in position with vertical separators, but not forced. Special “locking” separators, which grip the opening crossbars of the chain, as well as the use of “spacers,” prevent lateral shifting of the separators; they also ensure the hoses stay put in cases of strong vibration and impact on the chain. Details about these accessories can be found in the description of various chain types.

## Strain Relief

Hydraulic hoses are most often stretched lengthwise during operation. This must be taken into account when applying strain relief. More hose length is factored in to allow the hose to “breathe,” or “floating” strain relief must be implemented. In some cases, strain relief on the moving end only can be tolerated.

## Rollclip

In almost all cases, the broad, smooth and rounded surfaces of all igus® E-Chains® and Tubes are sufficient to protect hydraulic hoses from abrasion. In extreme cases, the igus Rollclip can be installed. The hoses come in contact with a series of polymer cylinders which rotate. “Extreme” cases include particularly soft materials, particularly narrow bending radii or highly dynamic loads. Over 95% of all applications can be solved without Rollclips.

**● Pneumatic hoses**

The igus® program also offers polymer pneumatic hoses called Chainflex® Air

**● Flat cables**

Outer jackets made of rubber must be specified particularly carefully, because of potentially high friction

**● Hydraulic hoses**

Hydraulic hoses need more space: 20% all-around clearance

**igus® Rollclip, detachable**

# E-Chain System® Design
# Strain Relief Elements
# Chainfix

Ideally, the cables/hoses should have strain relief at both ends of the E-Chain®. At the very least, they must have strain relief at the moving end of the E-Chain®.

For more information on all igus® strain relief elements,
➤ Chapter 10

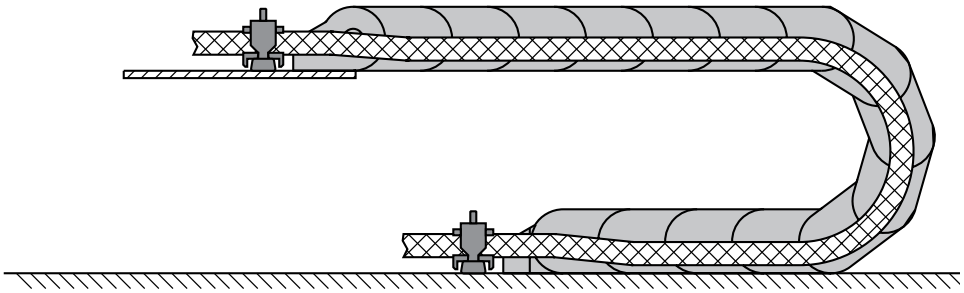
Strain relief in KMA mounting bracket with profile rail.

## Strain relief for electrical cables

Strain relief can consist of standard elements or can be custom-made. For most applications, our standard program of profile rails in mounting brackets and space-saving Chainfix® clamps can be used. We also offer simple strain relief solutions using cable tiewraps and tiewrap plates. In ideal cases, the cables should be secured at both ends of the E-Chain® with strain relief (in a few instances, strain relief at the moving end of the E-Chain® is sufficient - please consult igus® for these cases).

## Minimum gap of the strain relief and the beginning of the bend radius

Tests on our premises and in field applications have shown strain relief located at the last bending point of the E-Chain® has no influence over the durability of igus® Chainflex® cables. It is possible, therefore, to integrate the strain relief with the mounting bracket. This space-saving option for strain relief is offered by igus® for almost all E-Chains® (More details on this in the individual chapters).



Ideal installation of cables in E-Chains®. Chainflex® cables can be directly strain-relieved in the mounting bracket (minimum gap to the last curved chain link is not necessary)

Chainfix strain relief with KMA brackets; used here for cables and hoses

# E-Chain System® Design
# Strain Relief Elements
# Chainfix

## Features of Chainfix clamp

- Optimal igus® Chainfix housing with reduced height
- Long service life for dynamic applications thanks to improved clamping elements
- Integration with KMA mounting brackets - saves both time and space during installation and available for complete systems with cables and strain relief
- Improved housing foot clamp for easy fit into the profile rail
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation
- Mark of the installation direction
- Now with better fixation due to optimized design

## Tiewrap plates as individual parts

- Strain relief accessory for igus® E-Chain Systems®
- Attachment to mounting brackets
- Integration into the profile rail of KMA (polymer/metal mounting brackets)

## Tiewrap plates with clip-on connection for the profile rail

The plates **3050-ZC** and **3075-ZC** can be clipped directly into the profile rail without bolts or any extra hardware. Clip-on tiewrap plates can be released and repositioned with just a screwdriver used as a lever.
4 options available:

- Tiewrap plates with clip-on connection for the profile rail
- Integrated strain relief for E2 Tubes - series R
- Tiewrap plates for fixed crossbars
- Tiewrap plates for opening crossbars

## Chainfix clip - modular snap-on strain relief device

Chainfix clip is a series of clamps and bottom parts made of plastic for cable diameters ranging from .16" (4 mm) to .94" (24 mm). Chainfix Clip is available for profile rail, also suitable for assembly in the KMA mounting brackets and clip-on strain relief for cross bars.

- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces in case of single-layer installation, decreasing with the number of layers

## Strain relief separator

- Can be integrated in mounting bracket
- Can be positioned as required
- Easy installation
- Cost-effective
- For most series from stock

## Strain relief element outside of the E-Chain® cross section

- Easy strain relief for cables, even in enclosed tubes
- Stepped strain relief - good access when retrofitting several cables with strain reliefs
- Matching for E-Chains® and E-Tubes
- Easy retrofit assembly possible
- Simple installation into top-hat rails and profile rail on KMA mounting brackets

## Chainfix nugget - for profile rail

**Option 1:** universal cable fixation, for diameter with Ø .79" (20 mm) and Ø 1.18" (30 mm)

- The smart helper for electricians in the machine building industry
- Accessory for all KMA with integrated profile rail
- Easy to assemble, without any screws and tools
- Adjustable to every E-Chain® filling
- Very small space requirement
- Easy strain relief due to attachment with pre-harnessed cable strap

# E-Chain System® Design
# Technical Data
# Material Data

**igus® materials**

- igumid G
- igumid NB
- igumid ESD
- igumid TE
- igumid GE
- igumid DT

Find technical data about igus® materials, temperatures and chemical resistance
➤**see page 1.47**

**igus® factory; automatic compounding and conveyor belt for igumid G**

## Plastics for longer life® - igus® know-how in polymer materials

Each year, igus® engineers develop more than one hundred new plastic compounds and test igus® products in more than 15,000 experiments per year. That's how in recent years they have built an extensive database of the tribological properties of polymers. This database makes it possible for us to better assess most of the applications in advance and provide our customer with confidence during use. Our calculations and analyses are based on the result of ongoing practical tests in our technical center and our experience with gliding applications. The focal points of our tests are push/pull forces, friction values and abrasion under widely varying conditions and speeds, as well as factors such as dirt, weathering or impact and bumps. We test all system components such as cables, hoses, strain relief and other accessories, in addition to the E-Chains® or E-Tubes and guide troughs.

**Technical environment:**

- **Fire resistance**
- **Radiation**
- **Weathering**
- **Cold, heat**
- **Explosion areas**
- **Vacuum**
- **Hot chips**
- **Dirt, dust**
- **Cleanroom**
- **Chemicals**

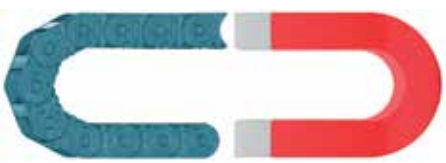
## Technical environment

The igumid G material, from which igus® E-Chains® are made, possesses the following wide-ranging features to cope with a variety of environments: the ability to handle pressure and strenuous loads, abrasion resistance, sturdiness, stable behavior at high and low temperatures, and suitability for outdoor use. Numerous application examples, from refrigerator blocks to steel mills, prove this. In extreme cases, we also offer modifications and other igus® compounds as a solution. Please consult igus®.

## Magnetically detectable plastic E-Chains® - For the food and tobacco industry

- The material igumid DT is detected to the tiniest fragment all common metal detection systems and can therefore be selected automatically
- Particles as small as .04" (1.0 mm) can be recognized for fragments passing at speeds of 65.6 ft/min (20 m/min)

**More information ➤ www.igus.com**



# E-Chain System® Design
# Technical Data
# Material igumid

## Flammability of igumid G

The flame-retardant characteristics of igumid G can be described using various classifications:

- Test procedure VDE 0304 parts 3-5.70 - classification llc.
- Tested according to UL 94 “Standard Tests for Flammability of Plastic Materials for Parts in Devices and Appliances” classification 94 HB for .13 and .06 in. (3.2 and 1.6 mm) thickness of the body.
- Tested according to DIN 4102 “Fire Behavior of Building Materials and Parts” classification materials class B-2.

For further requirements, please consult igus® for special solutions, such as materials with self-extinguishing properties (UL94-V2 or UL94-V0).

All E-Chains® (except for the E-Z Chains and Series 14 Chains) are made from igumid G.

## Flammability of igumid NB

All E-Z Chains and Series 14 Chains are made from the flame-retardant igumid NB material. These chains have the following flame-retardant classifications:

- UL 94 classification - V2
- VDE 0304 Parts 3-5.70 classification - llb
- DIN 4102 flammability of materials - B2

Please consult igus regarding material availability “V0.”

## Temperature resistance

igumid G is very suitable for outdoor applications. In our experience, the mechanical properties of the chain are not impaired. igumid G is also UV-resistant. igus® E-Chains® are used in applications as cold as -40°F (-40°C). Installation may be eventually compromised at temperatures below -13°F (-25°C). In such cases, we offer special solutions made from cold-elastic materials. +248°F (+120°C) continuous temperatures are possible, however, the mechanical values are reduced and the service life is impaired. Please consult igus® if you have specific temperature requirements.

## Resistance to radiation

igus® offers several solutions for high radiation areas. igumid G is very resistant to high-energy radiation. Under gamma radiation, in the range of 8 x $10^4$ rd, the mechanical properties of igumid G change very little. Please consult igus®

**Series 4040R RoI E-Chain® on a coal unloading system - travel 623 ft. (190 m), speed 1.64 ft/s (0.5 m/s,) fill weight 5.41 lbs/ft. (8.05 kg/m)**

**Live broadcast from the Winter Olympics in Lillehammer; 246 ft (75 m) travel at -13°F (-25°C)**

°F

**igumid G:**
UL 94 HB (Standard)

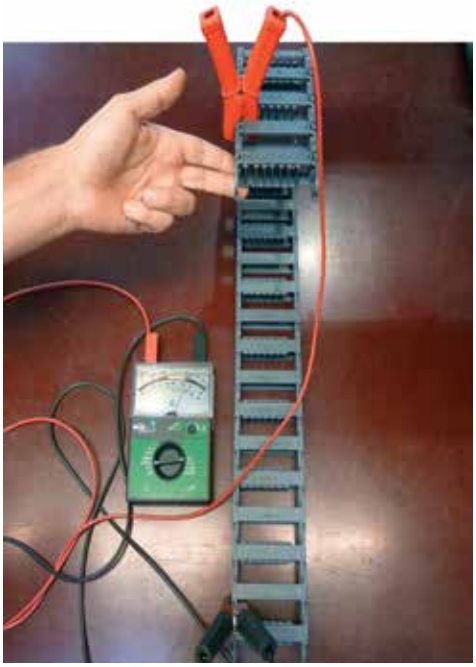
**igumid NB:**
UL 94 V2 (Standard)
UL 94 V0 (upon reqwuest)

**igumid G:**

- UV-resistant
- Temperature range from:
  -40°F (-40°C) to
  +248°F (+120°C)

# E-Chain System® Design
# Technical Data
# ESD & ATEX

- **ESD** - avoidance of static charges in the field of manufacturing processes of electronic components or assemblies
- **ATEX** - prevention of explosive static charge in hazardous environment



**100% of the produced ESD E-Chains® are checked for their continuous conductivity from one end to the other**

Measurements of the electrical surface leakage resistance for igus® E-Chains® with the special material igumid GC were made already in 1992 by the igus® GmbH together with the PTB (Physikalisch-Technische-Bundesanstalt) in Braunschweig, supplemented by additional certifications in 1998 and 1999 according to DIN 53482 and the guidelines for static electricity "ZH1/200" of the Federation of Trade Associations. In the course of further innovation, the material igumid ESD was certified by the PTB (Physikalisch-Technische-Bundesanstalt) in May 2002. The material igumid ESD combines in its properties the requirements of the ESD as well as ATEX criteria. In some mechanical requirements, the igumid ESD surpasses even the standard material igumid and has been tested with over 10 million cycles in the igus® technology center.

**Product range of ESD E-Chains® from stock**

| | *Bi* | |
|---|---|---|
| **Zipper** | **in.** | **(mm)** |
| 07 | .39 - 1.97 | (10 - 50) |
| 09 | .63 - 1.97 | (16 - 50) |
| **E2/000** | | |
| 1500 | .59 - 3.15 | (15 - 80) |
| 2500 | .98 - 4.92 | (25 - 125) |
| 2700 | 1.97 - 4.92 | (50 - 125) |
| **E4-1** | | |
| E4.21 | 1.18 - 2.76 | (30 - 70) |
| E4.28 | 1.57 - 4.92 | (40 - 125) |
| E4.32 | 1.97 - 7.87 | (50 - 200) |
| E4.42 | 1.97 - 7.87 | (50 - 200) |
| E4.56 | 2.95 - 11.81 | (75 - 300) |
| E4.80 | 2.95 - 11.81 | (75 - 300) |

| | *Ba* | |
|---|---|---|
| **Triflex® R TRC** | **in.** | **(mm)** |
| TRC.40 | 1.69 | (43) |
| TRC.60 | 2.56 | (65) |
| TRC.70 | 3.19 | (81) |

## Your benefits with ESD products

- ESD material tested with over 10 million cycles for the highest requirements
- Snap-open E-Chains® with mounting brackets and interior separation in ESD and ATEX design available from stock
- Standardized product - igumid ESD with PTB certificate
- Proven over years of use in explosion-proof areas

## Conductivity of igus® products from igumid ESD

In contrast to applied conductive surface coatings or potentially volatile incorporated anti-static agents, the additives used in the igumid ESD products from igus® grant long-term, maintenance-free conductivity to E-Chains®. However, a conductive E-Chains® alone is not enough to ensure sufficient conductivity. Instead, all individual components, as well as the entire E-Chain®, must exhibit continuous conductivity. igumid ESD E-Chains® are slate grey in color* to distinguish as conductive materials. All products in this catalog are optimized in this regard, and their continuous conductivity is tested, measured and documented prior to delivery. Only igus® E-Chains® that have passed these tested are marked with the tested seal, and delivered to igus® customers.

*Exception: igus® Zipper E-Chains® Series 07/09

## More information on igus® ESD E-Chains® - classification Ex II 2 GD

- **General safety information:** these additional operating Instructions apply to the explosion-protected versions of our E-Chains® of Type ESD in color grey (similar to RAL 7015). They supplement the Installation Instructions for the standard E-Chains® and the catalog information. The information in these instructions relates only to data impacting on explosion protection. The technical information in the Installation Instructions for the standard E-Chains® and the category information still apply unchanged unless these Instructions explicitly exclude or replace the relevant information. Required documentation and other documents are filed with the following institute pursuant to the ATEX Directive:

**Physikalisch-Technische Bundesanstalt (PTB) Braunschweig and Berlin**
**Bundesallee 100 • 38116 Braunschweig/Germany**

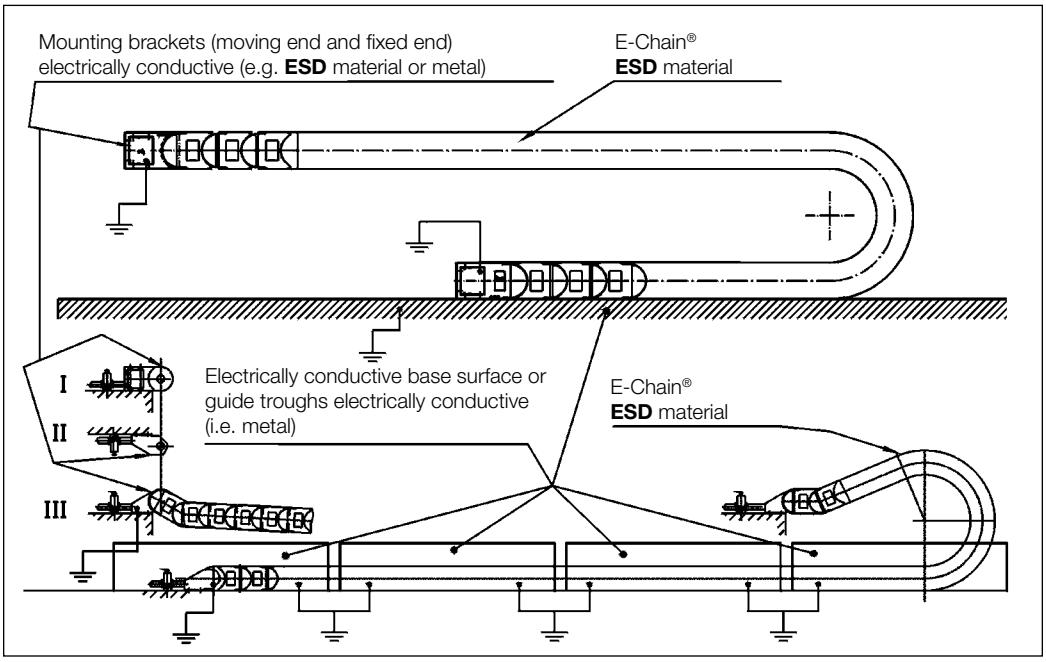
- **Assembly, removal and installation:** please follow the information in the installation instructions for the standard E-Chains® and the catalog information on assembly , removal and installation for trouble-free operation. igus® ESD E-Chains® must be grounded with appropriate measures in accordance with drawing number 18392.2 in order to discharge any electrostatic charges occurring.

**Assembly, installation, commissioning and maintenance may be performed only by personnel trained in explosion protection!**

Please also note the corresponding national safety regulations and the relevant national regulations in respect of explosion protection during installation and operation.

- **Commissioning:** before commissioning the system, check that the system has been installed correctly in accordance with the Installation Instructions for the standard E-Chains® and the catalog information. Correct grounding must be checked in particular in the case of ESD E-Chains®.

- **Maintenance:** igus® E-Chains® are maintenance-free. Correct grounding of the E-Chains® must be inspected at regular intervals. (*in case of large projects a customized maintenance plans can become an issue and will be created if necessary)




**Connection of an E-Chain® in accordance with ATEX Directive 94/9/EC**

**igumid G - Ex II 3 GD**
igus® E-Chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG.

**igumid ESD - Ex II 2 GD**
igus® E-Chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EG

**igus® igumid ESD with PTB certificate**
We have received an official certificate from the German National Standards Laboratory (PTB) on material igumid ESD and we are able to provide you with a copy on request.

# E-Chain System® Design
# Technical Data
# Cleanroom and ESD

## Cleanroom qualification of igus® E-Chains®

In many applications where cumbersome special solutions are used, a simple standard E-Chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the E-Chains® in special materials are practically abrasion-free. Detailed test results are available upon request. IPA tests confirm that standard igus® E-Chains® meet cleanroom requirements. "Tested and certified as very good!" E-Chains® for cleanroom applications in the test stand cleanroom environment demand very high wear-resistance of moving parts. E-Chain®, for example, must be very wear resistant, in order the meet the normal requirements for such a sensitive environment.

IPA Fraunhofer TESTED® DEVICE
igus GmbH
Energy chain E61.29.50.075.0.CR
Report No. IG 1303-640

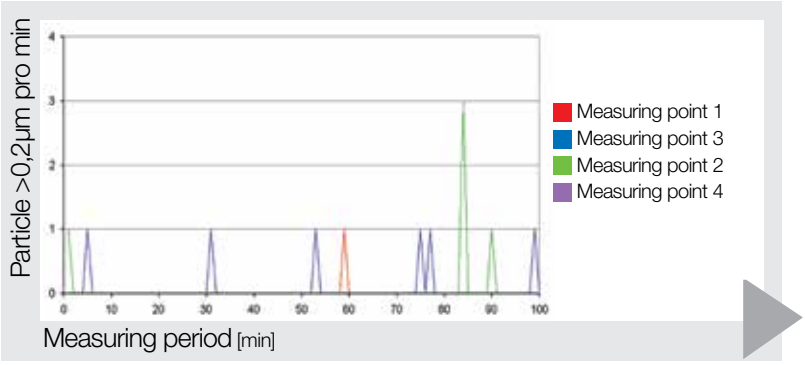
## IPA Fraunhofer Institute has tested the following igus® series according to DIN EN ISO 14644-1

| Result according to DIN EN ISO 14644-1 | Equivalent to US Federal Standard 209E | Classification Series | Report No. | Speed ft/s (m/s) |
|---|---|---|---|---|
| ISO Class 1 | No comparable classification | **E3-15-040-075-0** | IG0704-400 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 1 | No comparable classification | **E6-29-060-150-CR** | IG0704-400 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 1 | No comparable classification | **E61-29-050-075-0** | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 2 | No comparable classification | **E14-3-038-0** | IG0308-295 | 3.28 (1.0) |
| ISO Class 2 | No comparable classification | **1500-050-038-0** | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 2 | No comparable classification | **E4-32-10-063-0-CR** | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 2 | No comparable classification | **T3-29-050-038-0** | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| ISO Class 3 | ISO Class 1 | **E6-29-060-150-0** | IG0704-400 | 1.64 / 6.56 (0.5 / 2.0) |
| ISO Class 3 | ISO Class 1 | **2500-05-055-0** | IG0308-295 | 6.56 (2.0) |
| ISO Class 5 | ISO Class 3 | **E4-32-10-063-0** | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |

*special material cleanroom

### Particle generation measurement

Result: particle generation
E14-3-038-0

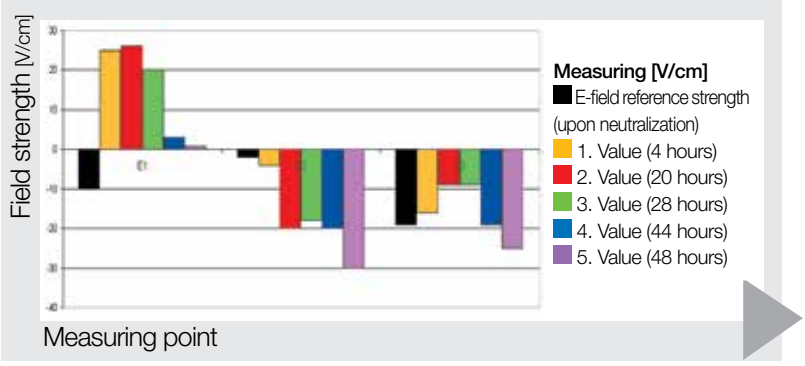



**ISO Class 2**
according to
DIN EN ISO 14644-1
for E14-3-038-0

**Absorption LEVEL 1** confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Continuously constant conductance value as there are no pin-bore connection (no air gaps).

### Field strength measurement

Result: field strength
E6-29-050-055-0




**Level 1**
ESD-compatibility
according to SEMI
E78-0998 for
E14-3-038-0 and
E6-29-050-055-0

# E-Chain System® Design
# Technical Data
# Dirty Environments

## Spatter, hot chips

Laboratory tests and numerous field applications over the past 20 years have proven that igus®' E-Chains® and fully enclosed E-Tubes protect cables used in welding robots and machine tools. E-Tubes made from the igus® igumid HT material are resistant against hot chips and flying debris up to 1,562°F (850°C), no chips stick. This opens up new possibilities for replacing more complex and expensive steel tubes. All standard E2 and E4 E-Tubes are available made from igumid HT, upon request. Please note: igumid G in direct contact with large amounts of melted aluminum is not recommended.

**igus® E-Tubes in the chip area of machine tools**

## Dirt, dust, chips

Materials and design make igus E-Chains® excellent problem-solvers in harsh environments. Experience and application references are available upon request. Please consult igus with your application.

**Also hot asphalt is no problem for igus® E-Tubes**

## Vacuum

igus® E-Chains® made of igumid G can be used in vacuum applications. Very little outgassing occurs.

## Chemical resistance

igumid G is resistant to fuel, lubricants, oils, fats, alcohol, ester, ketone, and aliphatic and aromatic hydrocarbons. Oxidants and acids are damaging. The table on ➤ **Page 1.48** shows an excerpt of the precise details concerning resistance to chemicals. Acid-resistant E-Chains® are available upon request.

**System E4 in an incinerating plant - safe also in abrasive dirt and dust**

## Coolant resistance

E-Chains® and E-Tubes have proven resistant to cooling agents. However, we are always willing to perform individual tests if you have particular problems or advanced developments.

**Compost sludge - numerous related references available upon request**

Chemical Resistance Table
➤ **Page 1.48**

**igus® - experience with:**
dust, dirt, mud, compost, wood, textile fibers, paper dust, abrasive paste, cooling agents, glass dust, glass splinters, coal dust, sand, corundum and much more.

E-Tubes that repel hot chips, up to 1,562°F (850 °C) with the igus® "igumid HT" material.

igus® tests: E-Chains® and Chainflex® cables are tested for resistance against chemicals and oils in long-term tests

# E-Chain System® Design
# Technical Data
# Material Data igumid - Colors

## Material data igumid

| Material data table<br>Mechanical properties | Units of measure | igumid G | igumid NB | igumid ESD | igumid TE | igumid GE |
|---|---|---|---|---|---|---|
| Yield stress (dry/wet) | MPa | 190/130 | 78/40 | * | * | * |
| Elongation at break (dry/wet) | % | 004/006 | 20/210 | * | * | * |
| Elasticity module (tensile test) | MPa | 9000/7000 | 2900/1200 | * | * | * |
| Limit of elasticity (bending) | MPa | 7.800 | 3.000 | 9.500 | 1.290 | 7200 |
| Bending strength | MPa | 240 | 120 | 230 | 55 | 200 |
| Hardness Shore D | – | 79 | 79 | 83 | 72 | 80 |
| **General properties** | | | | | | |
| Density | g/m3 | 1,37 | 1,14 | 1,2 | 1,02 | 1,46 |
| Absorption of humidity 23/50 RF | % by weight | 1,4 | 3,4 | 1,9 | 0,8 | 0,7 |
| Maximum water absorption | % by weight | 5,6 | 7,6 | 7,3 | 1,6 | 4 |
| **Electical properties** | | | | | | |
| Specific transitional resistance | Ω*cm | >1011 | >1011 | <109 | >1011 | >1011 |
| Surface resistance ROA | Ω | >1011 | >1011 | <109 | >1011 | >1011 |
| **Thermal properties** | | | | | | |
| Lower application temperature | °C / °F | -40°C / -40°F | -40°C / -40°F | -40°C / -40°F | -40°C / -40°F | -40°C / -40°F |
| Upper long-term application temp. | °C / °F | 120°C / 248°F | 80°C / 176°F | 80°C / 176°F | 70°C / 158°F | 120°C / 248°F |
| Upper short-term application temp. | °C / °F | 180°C / 356°F | 170°C / 338°F | 150°C / 302°F | 140°C / 284°F | 200°C / 392°F |
| **Material certificates** | | | | | | |
| Fire resistance as per UL94 | – | HB | V2 | HB | HB | HB |
| Silicone-free | – | ++ | ++ | ++ | ++ | ++ |
| Halogen-free | – | ++ | ++ | ++ | ++ | x |
| 2002/95/EG (RoHS) | – | ++ | ++ | ++ | ++ | ++ |
| 2002/96/EG (WEEE) | – | ++ | ++ | ++ | ++ | – |
| **Color** | | | | | | |
| according to RAL, approx. | – | ■ ≈RAL9004 | ■ ≈RAL9004 | ■ ≈RAL7015 | ■ ≈RAL9004 | ■ ≈RAL9004 |

++ = yes  x = no  *Values upon request

## Colors and special solutions

Product prices are always based on the color black. E-Chains® in any color shown in the color selection chart are subject to a percentage based color surcharge. Any other colors that are not shown in the chart are individually calculated depending on the article and quantity, insofar as this is technically possible. As a rule, colored E-Chains® are not available from stock. Delivery lead-time and surcharges for colored E-Chains® are available upon request. As a rule, all specifications related to stability (for instance unsupported lengths) and material characteristics apply only to black E-Chains®. The characteristics of colored E-Chains® may differ. This also applies to all E-Chains® from special materials, such as conducting E-Chains® made from igumid ESD material or other special materials. For technical reasons HT and ESD materials cannot be supplied in other colors.

## E-Chain® color variations with RAL-numbers

| Color | Availability | RAL # | Part No. Suffix | Color | Availability | RAL # | Part No. Suffix |
|---|---|---|---|---|---|---|---|
| **Black** | Standard, from stock | ≈ RAL 9004 | **-0** | **White** | special color | ≈ RAL 9003 | **-1** |
| **Slate grey** | ESD material only | ≈ RAL 7015 | **-ESD** | **Grey white** | special color | ≈ RAL 9002 | **-1S** |
| **Grey brown** | HT material only | ≈ RAL 8019 | **-HT** | **Orange** | special color | ≈ RAL 2003 | **-2** |
| **Grey** | special color, E-Chains® only | ≈ RAL 7023 | **-3** | **Yellow** | special color | ≈ RAL 1018 | **-4** |
| **Dusty grey** | special color, E-Tubes only | ≈ RAL 7037 | **-31** | **Light grey** | special color | ≈ RAL 7035 | **-14** |

**Black E-Chains® available from stock! Delivery time for special colors: Please consult igus®.**

# E-Chain System® Design
# Technical Data
# Chemical Resistance

| Medium | Concentration weight % | igumid G / NB | igumid TE |
|---|---|---|---|
| Acetic acid | 2 | ++ | + |
| Acetone | 100 | ++ | ++ |
| Ammonia (aqueous) | 10 | ++ | ++ |
| Benzole | 100 | ++ | ++ |
| Bitumen | 100 | + | – |
| Boric acid (aqueous) | 10 | ++ | + |
| Butyric acid | 100 | + | – |
| Calcium chloride (aqueous) | Sat. aq. sol. | ++ | ++ |
| Caustic potash | 10 | ++ | ++ |
| Chlorinated hydrocarbons | | ++ | + |
| Chlorine water | Sat. aq. sol. | – | – |
| Chromic acid (aqueous) | 1 | + | – |
| Color | | ++ | ++ |
| Diesel oil | 100 | ++ | ++ |
| Fats, cooking | | ++ | ++ |
| Fluorinated hydrocarbons | | ++ | ++ |
| Formaldehyde (aqueous) | 30 | + | + |
| Formic acid (aqueous) | 2 | + | ++ |
| Gasoline | 100 | ++ | ++ |
| Hydraulic oils | | ++ | + |
| Hydrochloric acid | $pH_2$ | + | – |
| Hydrochloric acid | 2 | – | – |
| Hydrochloric acid | 10 | – | – |
| Ink, printing ink | | ++ | ++ |
| Mercury | | ++ | ++ |
| Methyl acetate | 100 | ++ | ++ |
| Milk | | ++ | ++ |
| Mineral oil | | ++ | ++ |
| Oil, cooking | | ++ | ++ |
| Oil, lubricating oil | | ++ | ++ |
| Oleic acid | 100 | ++ | ++ |
| Paraffin oil | | ++ | ++ |
| Perchlorethylene | 100 | ++ | – |
| Polyester resins (with styrene) | | ++ | ++ |
| Potassium carbonate (aqueous) | 60 | ++ | ++ |
| Potassium sulphate (aqueous) | 100 | ++ | ++ |
| Propane gas | | ++ | ++ |
| Sodium carbonate (aqueous) | 50 | ++ | ++ |
| Tartaric acid | | + | ++ |
| Vaseline | | ++ | ++ |
| Zinc sulfate (aqueous) | 10 | ++ | – |

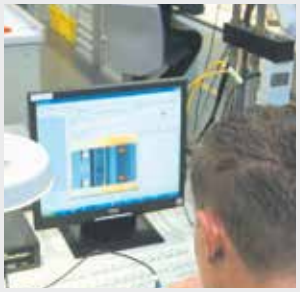
The values specified are values determined by laboratory tests and are material-specific. All specifications apply to black E-Chains®

**Resistance classes**

**++** = resistant
**+** = conditionally resistant
**–** = non-resistant
**Sat. aq. sol.** = saturated aqueous solution

# E-Chain System® Design Standards and Certificates

## Examples for test certificates and approvals of igus® products



Quality inspection of every E-Chain® production

Test location for ESD-E-Chains®

Chainflex® cables with many certificates for e.g. DESINA

Noise level tests in igus® own acoustic laboratory

### ISO 9001:2008

igus® Inc. has been certified since May 2002

### TÜV construction test

igus® E-Chains® and E-Tubes are construction-tested by TÜV Rheinland. igus® E-Chains® were tested and passed by TÜV Rheinland in accordance with the valid machine guidelines. As a result, the user of igus® E-Chains® need not worry about meeting CE requirements through testing for this portion of the machinery. The construction test 2PFG 1036 / 10/97 for protective equipment includes the following:

- Application/safety
- Assembly
- Fatigue strength
- Resistance to external influences
- Sharp corners and edges

### ESD/ATEX

igus® E-Chains® made of standard material igumid G correspond to the German federal office of Physics and Technology (PTB) to classification Ex II 3 GD according to ATEX-RL 94/9/EG. igus® E-Chains® made of igumid ESD correspond according to the German federal office of Physics and Technology (PTB) to classification Ex II 2 GD according ATEX-RL 94/9/EC.

### IPA Cleanroom

Many E-Chains® are suitable for the use in cleanrooms according to DIN EN ISO 14644-1. Confirmed by the IPA Fraunhofer Institute.

### UL, CSA, CEI, CE, VDE

All igumid-materials for E-Chains® and E-Tubes have got the UL-material approval. The material igumid NB has the fire protection class approval IIb according to the test VDE 0304 Part 3/5.70, the approval V2 according UL94 and the construction material class B2 according DIN 4102.

### Interbus, CC-Link and DESINA

Chainflex®- cables are produced according to a variety of international standards. **Interbus certification:** for Interbus certification of certain CF11 bus cables. **CC-Link**: CC Link is a Fieldbus established by Mitsubishi Electric Automation. igus® Chainflex® CFBUS.035 is

### Clearly quieter

igus® E-Chain Systems® are clearly quieter. In the acoustic laboratory of the TÜV and the igus® GmbH different E-Chains® were compared. The igus® System E3, E6 and E4/00 (Series E4/101) are measurably (and clearly) quieter than other products

### igumid

The material igumid is free from toxins, according 2011/65/EU (RoHS2).

### iF Design Award

32 iF Design Awards since 1987

Certified ISO 9001:2008

TÜV Rheinland Product Safety · BAUART GEPRÜFT · TYPE APPROVED

EX

PTB

Fraunhofer IPA TESTED DEVICE

NFPA 79

INTERBUS Certified! No. 141

CC-Link

DESINA

www.tuv.com TÜV Berlin ID: 3111005400

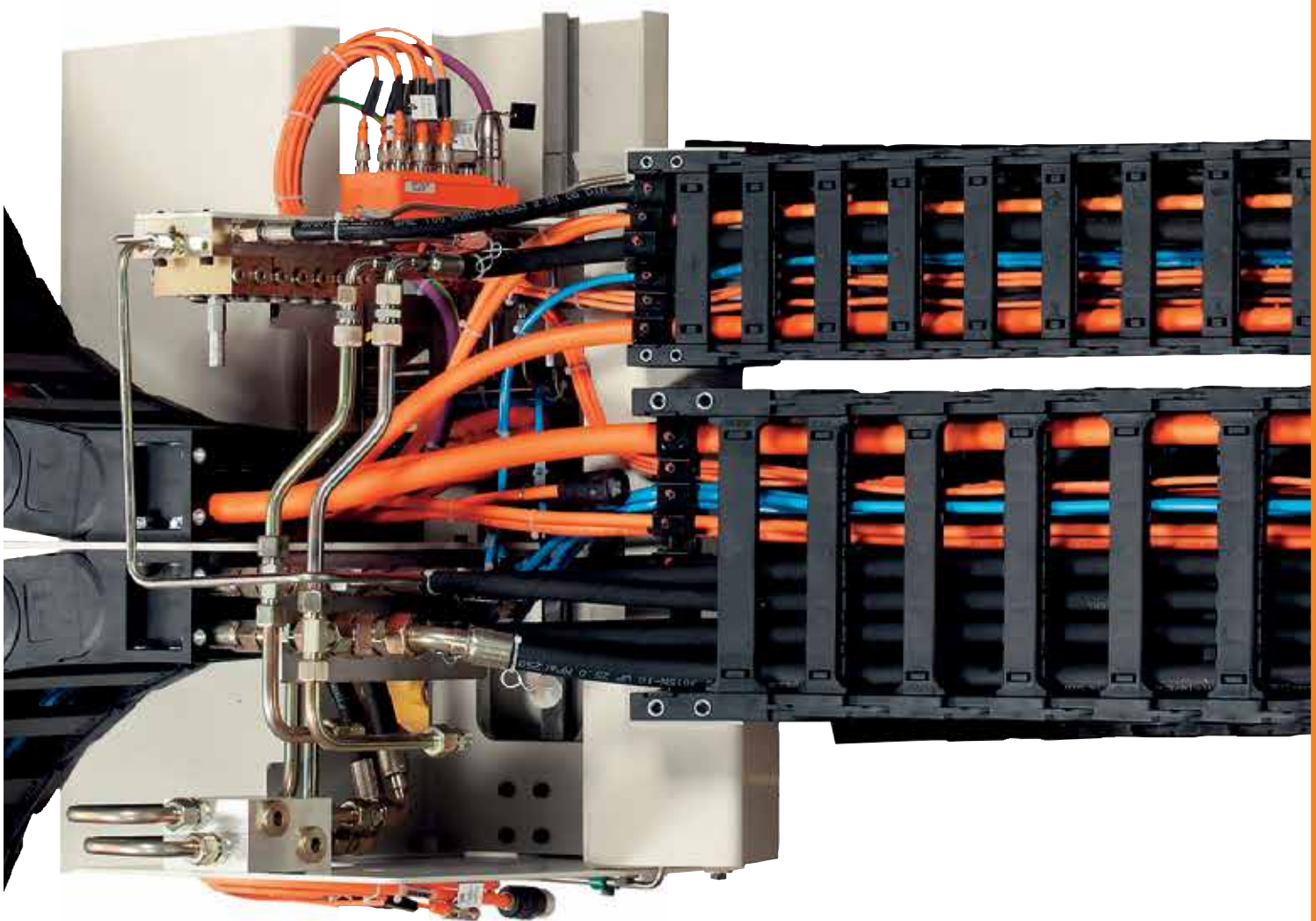
RoHS

iF product design award

igus®

# ReadyChain® & ReadyCable

**Ready-to-install energy supply systems.**
**Cables with connectors.**
**Minimize process costs.**
**Everything from a single source.**



# ReadyChain®
# Ready to install assembled E-Chain Systems®

**Assembled energy supply systems, connectors and cables from igus®. Everything from one source, directly from the manufacturer, delivered quickly to your machine**

**Ready to install systems, from connectors through assembled cables up to complex energy supply modules, delivered in 1-10 days**

## Customer specific production

**ReadyChains® - increase your capacities and cash flow quickly with igus**

- Lower the overhead costs
- Cut your throughput times from days to hours
- Respond flexibly to order variations
- Utilize igus® manufacturing capacities and our know-how in cable assembly

## From one off to mass production

**Reduce the number of suppliers and orders by 75% with igus®**

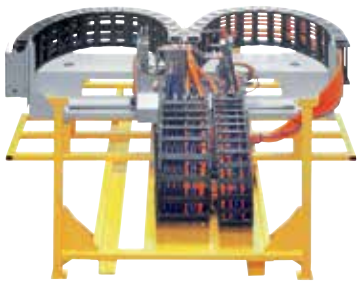
- One order, one invoice, one delivery
- A partner for minimal machine downtimes
- All ReadyChain® components are subject to an extensive quality control and function testing

# ReadyChain®
# You decide, igus® delivers

## You decide the degree of harnessing

**Any degree of harnessing is possible**

We harness from simple E-Chain systems® with inserted Chainflex® cables to complex systems. These systems may include all cables and hoses (pneumatic, hydraulic), patch plugs, inner partitions, connecting elements and connecting parts as requested.



## You decide the size

**Any size is possible**

Because of our up-to date production processes we can deliver fast and inexpensive custom-build or serial production products.

**From batch size 1 .....to serial production**

## You decvide the travel

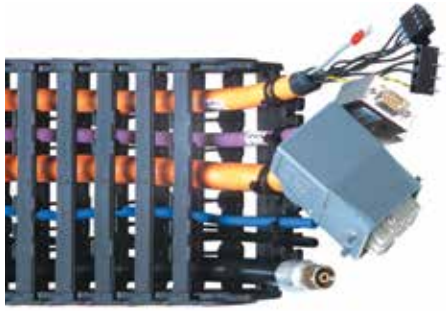
**Choosing the travel**

ReadyChains® offers the whole spectrum of possible travels of the igus® E-Chains®. We harness anything from extremely short to long travels. Safe transportation guarantees damage-free delivery of all lengths.

**From short .....to long travel**

## Standardized ReadyChain® packages help you get started

ReadyChain® Basic



ReadyChain® Standard

ReadyChain® Project

More Information ➤ www.igus.com

# The igus® ReadyChain® Factory

**Up to 1,000 orders/week, over 9,843 ft² floor space, “chain-cable-guarantee” since 1989.
More than 13 project engineers and over 127 dedicated ReadyChain® assembly employees.**

In igus® ReadyChain® factories, we assemble customized E-Chain Systems®.

Up-to-date production processes, custom-build or serial production

Full service from system acceptance to installation

11 ReadyChain® factories worldwide

Customized cable assembling at igus® Inc.

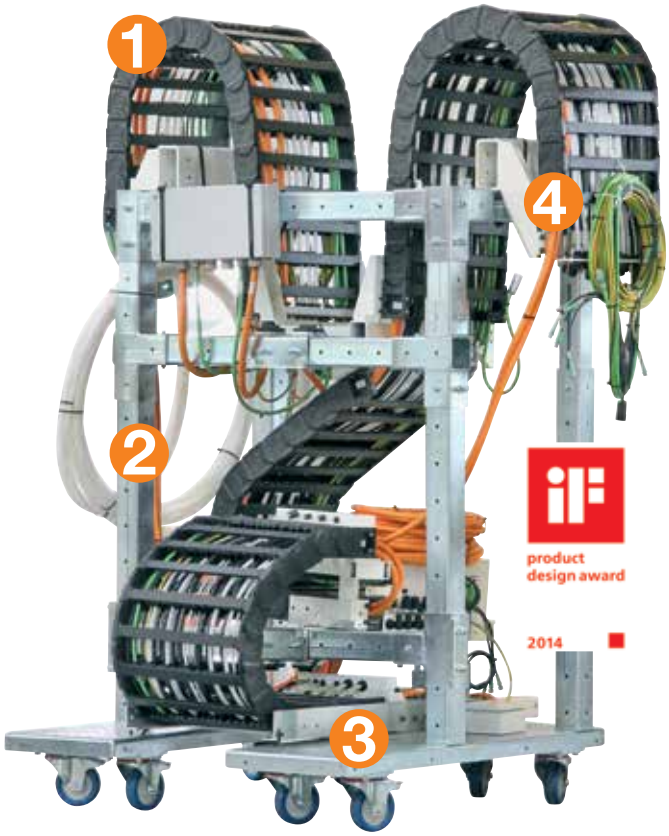
# ReadyChain®
# Modular, quick and ready-to-install

## 1 Everything from one source

The ReadyChain® system includes pre-assembled, customized E-Chain Systems®. The "plug-and-play" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting rack can yield benefits even at low volumes.

## 2 Flexible components

The telescoping supports and braces of the ReadyChain® rack allow flexible adaptation to the installation needs on site. Changes in mass production can be easily undertaken. By using modular parts, additional components can also be easily attached to the rack.



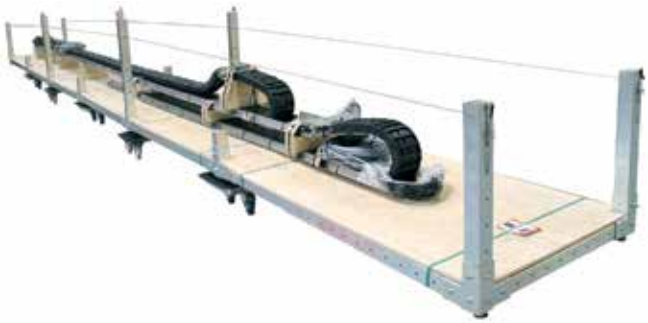

**Save 80% at prototyping. Assembly transport rack for ready-to-install energy supply systems.**

## 3 Sustainable use

The components of the readychain® rack are galvanized and thus designed for a long life. Each rack is constructed within a few hours. The individual elements can be reused at any time removing the need to dispose of custom made parts, such as conventional welded transport racks.

## 4 Precise fitting "Plug & Play"

All interfaces and attachments are designed in such a way that the installation of the E-Chain® can be managed quickly and easily. The complete package includes the matching plugs and connectors, plates, sensor actuator boxes, linear bearings, links to the central lubrication, etc., all reducing the installation time considerably.



# ReadyChain®
# Connectors, cables and accessories

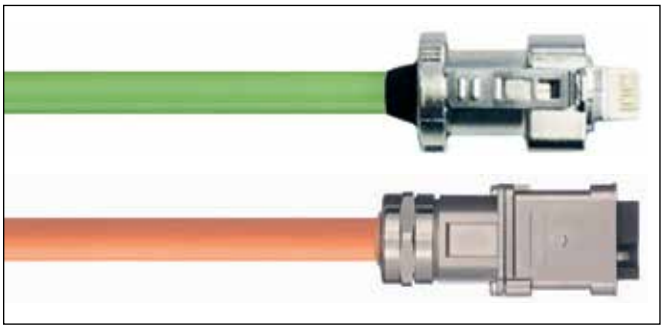
## igus® connectors

Round plug connector kit

Square plug connector kit

Tools and accessories

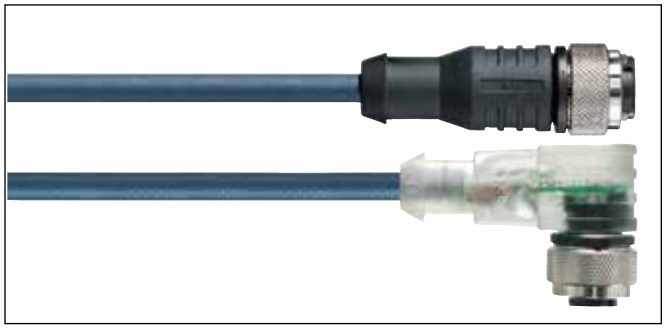
## igus® ReadyCable



Drive systems: 3,200 cables

Catalog standards: video/vision/bus technology

Catalog standards: network/ethernet/FOC/Field bus



Catalog standards: CF-INI initiator cables up to 4 x d

## igus® hoses and attachments

Configured online with hose cable configurator...

...to meet your needs

# ReadyChain®
# Configured, fitted, with System Guarantee

1 System acceptance
2 Project phase
3 Initial acceptance of prototype
4 igus® installation

## ReadyChain® Service

- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule

System acceptance on your machine

## ReadyChain® service

- Component selection
- Interface optimizations
- Documentation
- Integrated project management
- Cost optimization

Project planning

## ReadyChain® Skype service*

- Initial acceptance from your work place
- Build your prototype with an igus® project engineer, live in your meeting
- Your requests for changes explained with a model or visit us for acceptance in production

Prototype including transport rack

## ReadyChain® installation

- System installation by igus® specialists
- igus® supervision service for own installation
- Transparent, fixed price

Installation on site

*only available in Germany

More Information ➤ www.igus.com

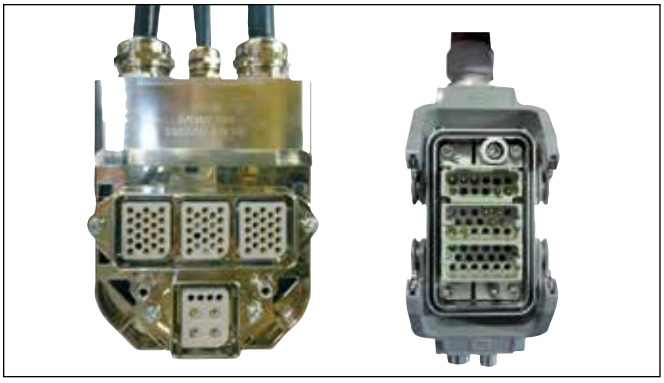
# ReadyChain®
# Cable assembly

## Capacity for 600,000 assembled cables a year, more than 18,000 test programs, 1,800 test adapters

Lean, automated manufacturing processes ensure a reliable system with short lead times

Computer-based high-voltage testing and inspection of all assembled cables

Modern machinery - automatic stripper-crimper



Special cable assemblies

System guarantee

Cable guarantee

## E-Chains® ...

More than 90,000 E-Chain® components

## ... Chainflex® cables...

Over 9 million feet of cable in stock

## ... ReadyChain®

3,500 connector components

Hundreds of feet of guide trough

18,840 ft² test lab - more than 15,000 tests every year

Quickly within reach

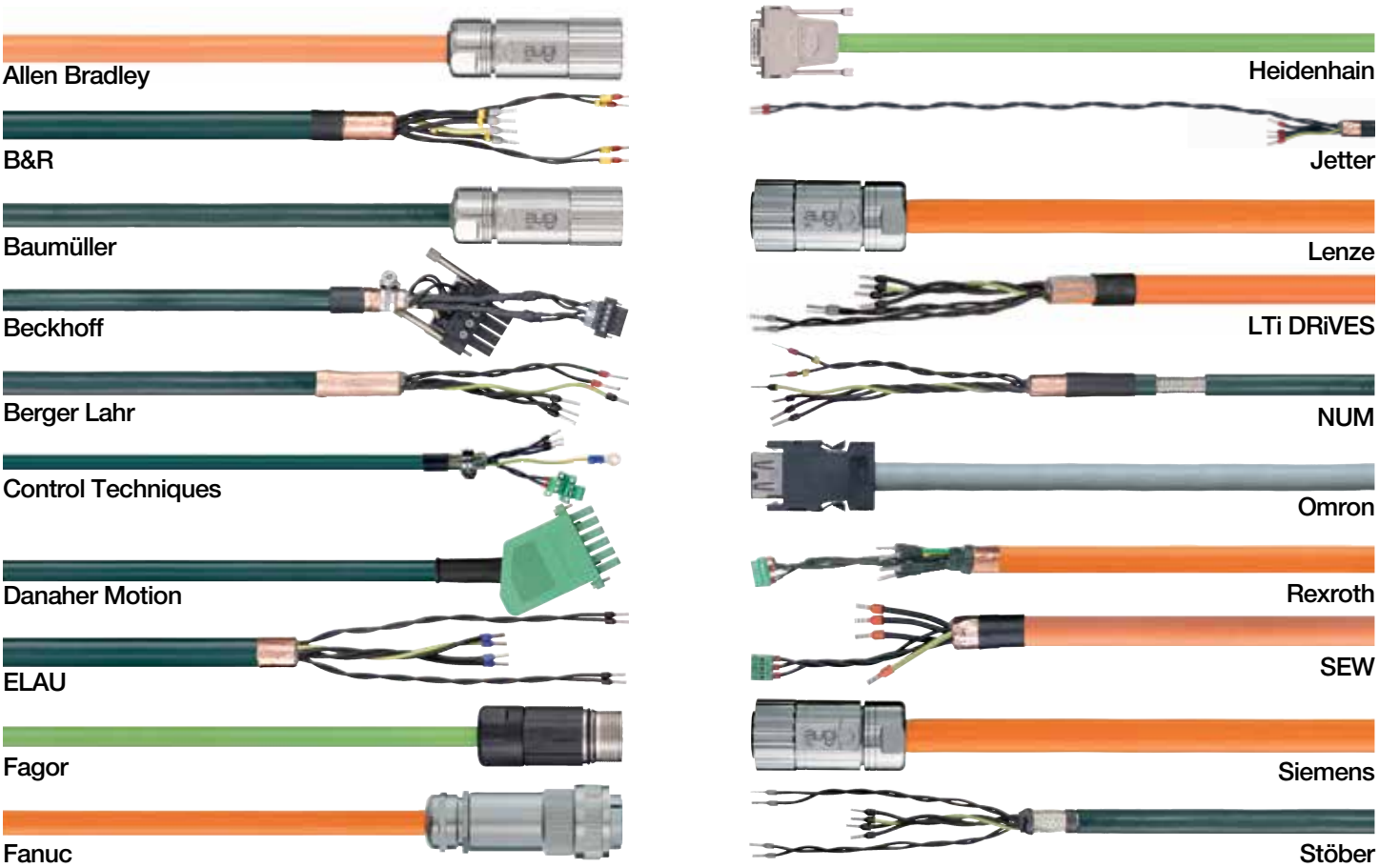
Numerous strain relief solutions

More than 8,000 cable assemblies per week

Just in time supply

# ReadyCable
# Harnessed Cables in 24 to 48 hours*

## Harnessed cables according to 20 manufacturer standards



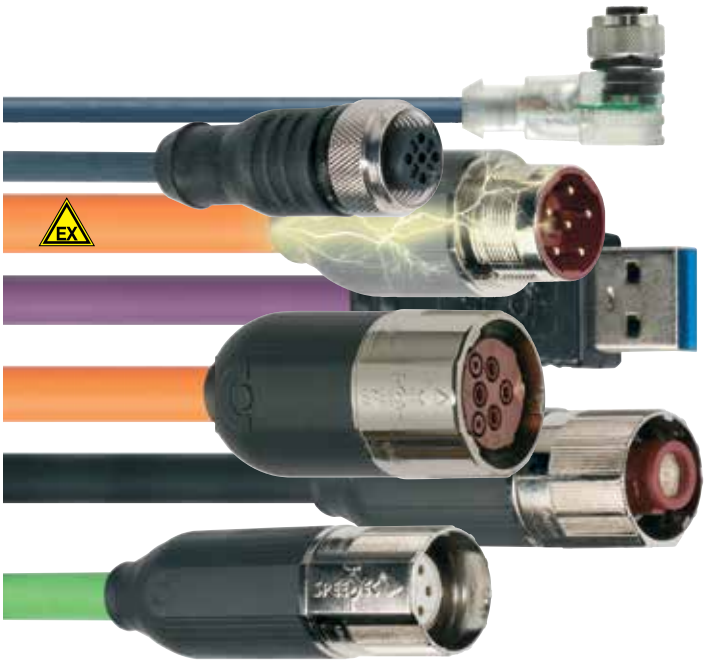

- igus® offers more than 3,200 harnessed cables for drive systems according to 20 different manufacturers
- Servo, Power and Signal/encoder cables
- No cutting costs, no minimum order quantity, no costs for packaging
- Cable length according to customer requirements
- Smallest bend radius from 7.5 x d
- Reduce storage cost and increase cash-flow

*Harnessed according to Allen Bradley, Fanuc and Siemens. For lead times on other manufacturer standards please consult igus®

## Electrical cables with connectors according to your needs with QuickPin 2.0

QuickPin 2.0
Connector-cable configurator
➤ www.igus.com/quickpin

# ReadyChain®
# igus® - Everything from stock




## As individual as your project - injection-molded connectors from igus®

- Various sizes: M8, M12, M23, M40, USB 3.0 etc.
- Sizes M23+M40 with SpeedTec® quick release fastener
- Angled versions
- According to UL/CSA standard
- Individual customer logo possible
- ESD material for ATEX-areas
- Tamper-proof
- Tight according to IP66/67 already before the molding process
- 360° shielded
- Space and weight saving

Professionally injection molded - molding M23

Assembled to your specifications

100% tested: test field

100% tested - digital continuity test

# igus
# Assembly service with warranty

## Improve technology and reduce costs with complete igus® systems

# Assembly Service
# Save time and money

## Installation

- Installation of your Energy Chain Systems® solution
- On-site supervision and as-built documentation
- Design and delivery of custom brackets and other accessories
- Installation inspections to ensure proper operation
- Full system performance warranty

## Modernization / Retrofit

- Complete modernization solutions for your existing energy supply system
- Upgrade performance in speed and length of travel
- Increase system service life
- Minimize downtime and increase machine safety
- Reduce operation costs with an energy saving solution

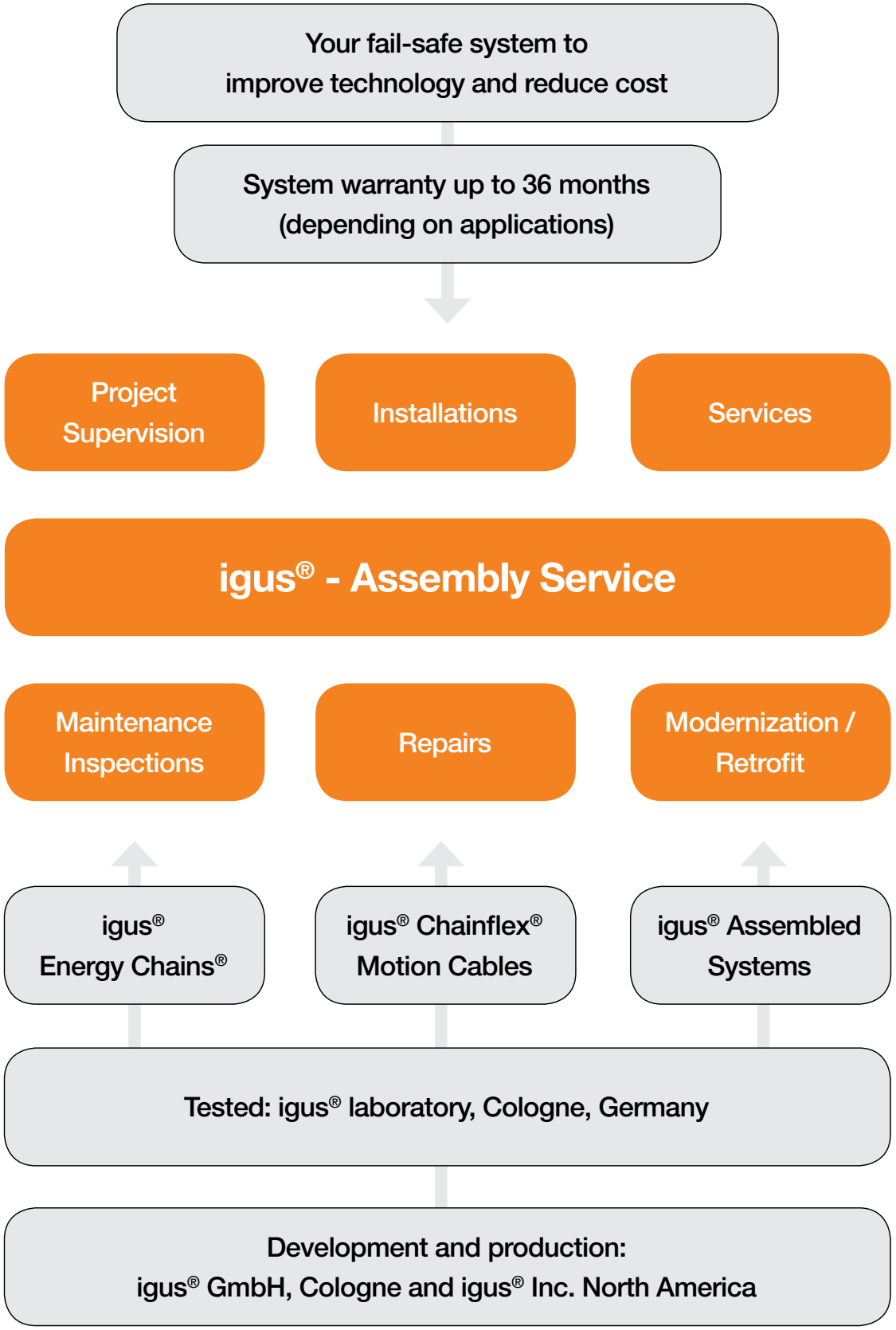
## Failure Inspection Services

- Services to survey and report on the conditions of your current system
- Report of serviceable items and adjustments to prolong life
- Proposals for upgrades and optimizations

## Maintenance Inspections

- Full system inspections to comply with warranty documentation
- Identification of problem areas and anticipated life expectancy of parts
- Adjustment of cables, chain, and trough components
- Repair or replacement of system components that are damaged or worn

## From a single source - components, service and reliability



# Assembly Service
# Save time and money

**igus® certified installation personnel**
Reduces installation time and costs, ensures long system life and prevents failures caused by installation error.

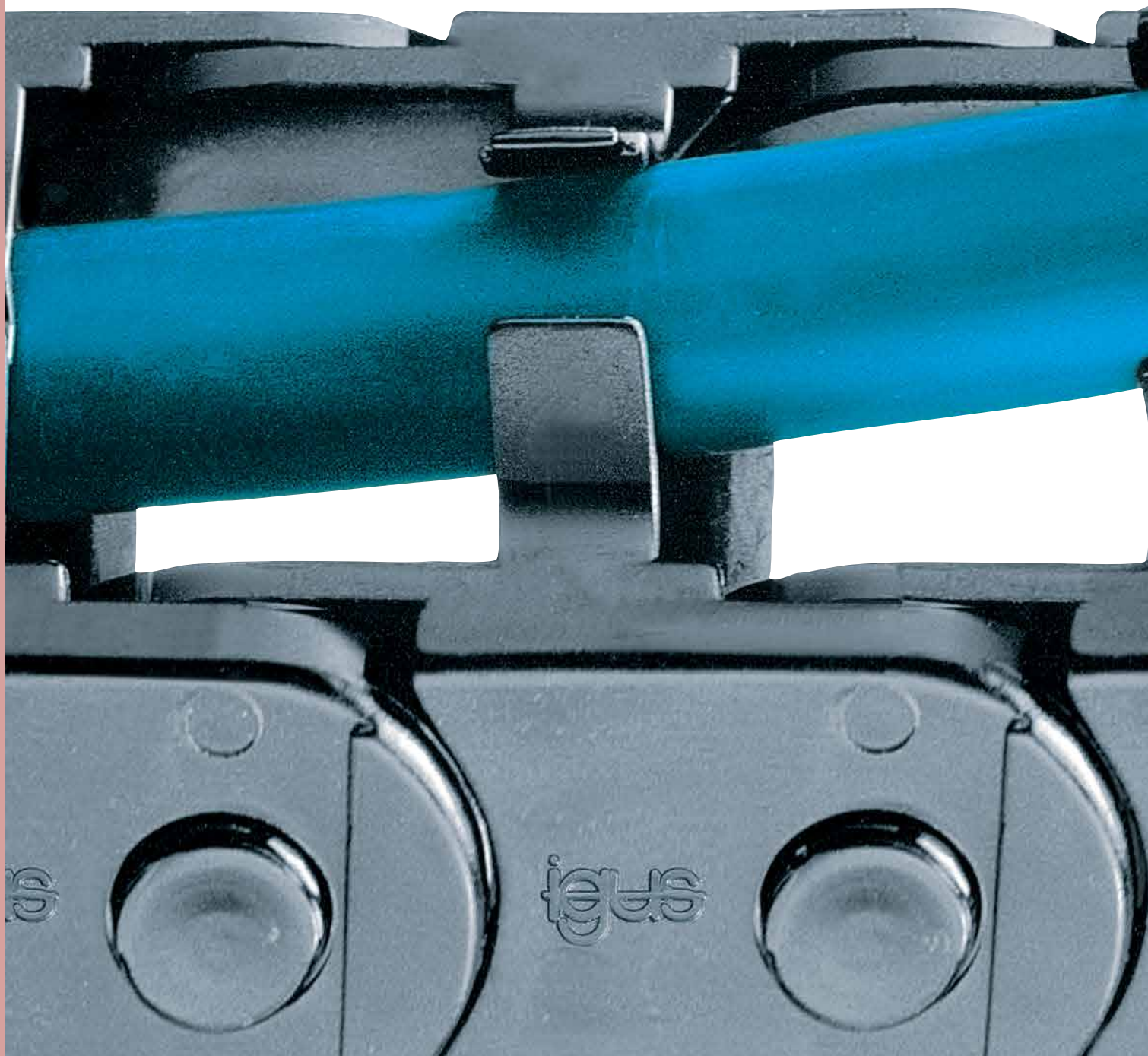
**Fixed costs for assembly and maintenance**
Offers savings in administrative costs with purchasing and planning.

**Accurate estimates for resource planning**
Systems are installed correctly, and on schedule

**Our network of installers minimizes costs by providing local**
Keeps travel and reaction times short and saves installation costs.

**Flexible availability when you need us**
Support available, even during nights and weekends.

**Everything from a single source - including warranty!**
From the design stage through delivery and installation, we will support you from start to finish.


igus

igus®

# E-Z Chain

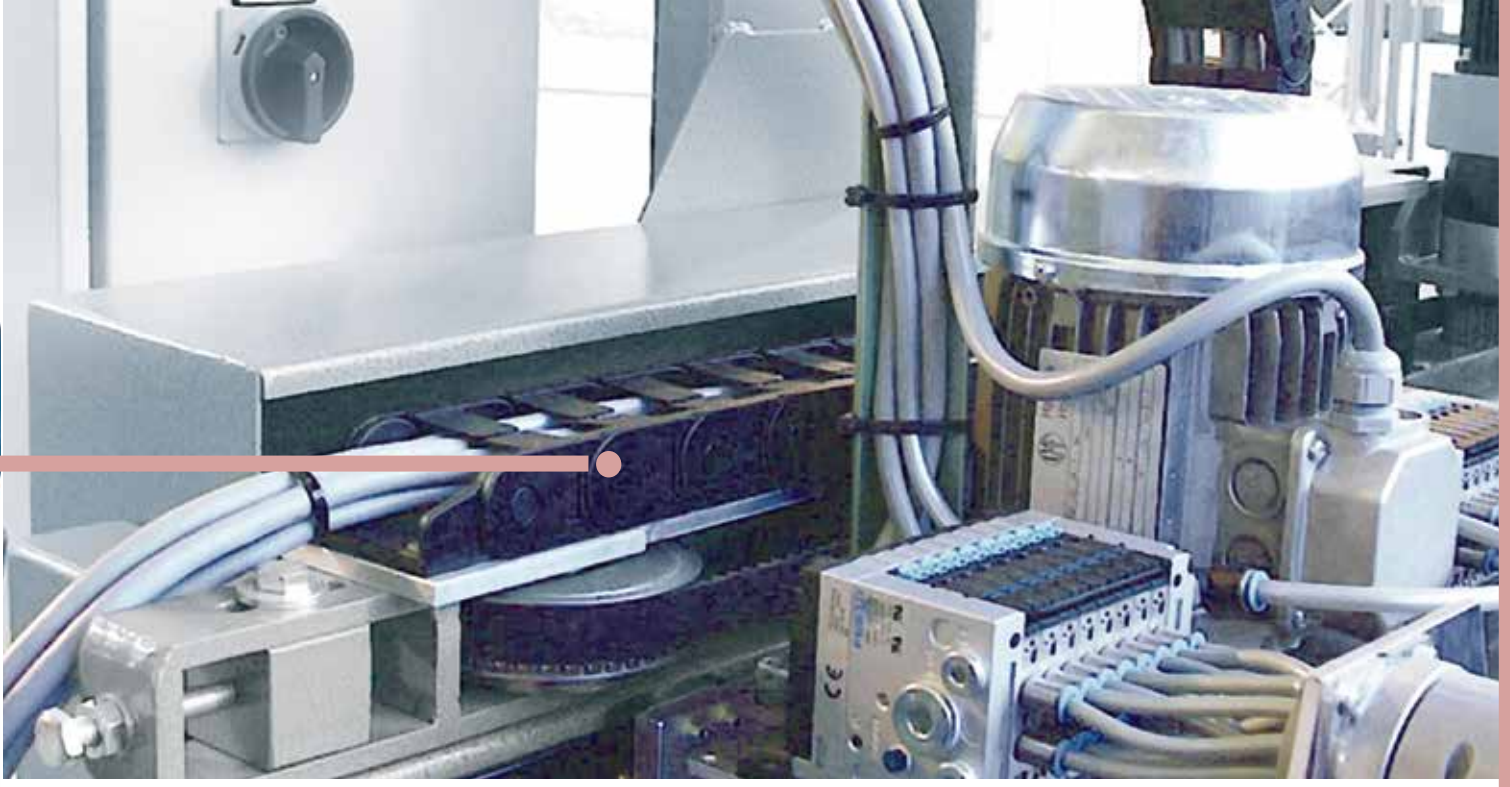
## Easy to fill

# E-Z Chain® - easy to fill and very cost-effective

**E-Z Chain** – cost effective cable carrier offers easy access to cables and hoses. E-Z Chain cable carriers are designed with a split crossbar along the outer radius for fast installation or removal of cables and hoses—without any tools. The split crossbars are flexible, but retain their shape and strength to provide secure protection and easy cable accessibility.

**Typical industries and applications**

- General machinery
- Cleanroom applications
- Electronic apparatus
- Office equipment
- Vending machines
- Packaging machines



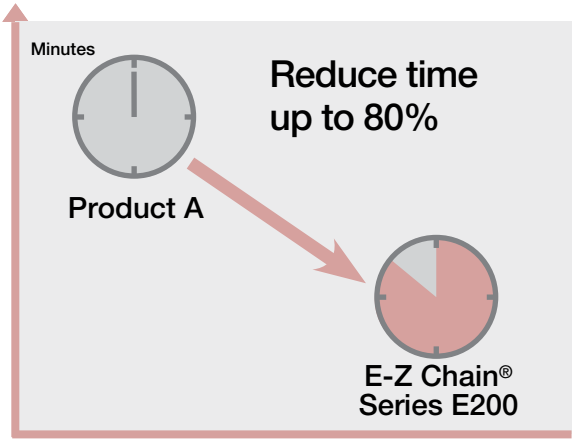
**Machinery of all kinds feature igus® E-Z Chains® - reduces assembly times**

**Clean room test acc. to Fraunhofer Institute IPA**
Standard material - ISO Class 2 acc. to ISO 14644-1
Speed: v = 3.28 ft/s (1.0 m/s) and a = 6.56 ft/s (2.0 m/s) - Series E14-3-038

Special equipment: Electrically conductive ESD/ATEX version upon request.

Flammability Class
VDE 0304 IIC UL94 V2

With E-Z Chain® rotary and torsional motions are possible

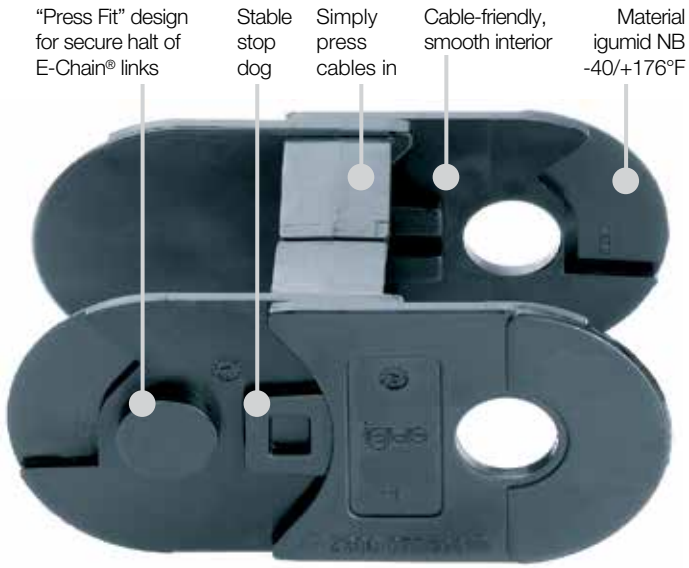



**Assembly time: Insertion of 2 cables Ø .24" and .39" (6 and 10 mm).**
We can provide you with more details about this and other tests.

**E-Z Chain® Series E14 on server unit, removable for maintenance purposes Cleanroom Class 2 ISO is standard**

**E-Z Chain® on adjustable office furniture with UL94 - V2 Classification**

# E-Chain System®
# E-Z Chain Series




## E-Z Chain®: "E" and "Z" makes "Easy"

- Easy to fill from the outer (exterior) radius (Version "E") or inner radius (Version "Z")
- Fast cable accessibility without opening and closing lids
- Easy to lengthen and shorten at any point
- Low price with one-piece design
- Dirt-repellent, contoured exterior
- Mounting brackets available with integrated strain relief
- Limited torsion tolerance
- Available with interior separation (some types)
- Flammability rating UL94-V2
- Suitable for clean-room applications
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1, Design**

## Selection table

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **E03** | .20 | (5) | .20 -.39 | (5-10) | .34 -.54 | (8.7-13.7) | .31 | (8) | .39 - 1.10 | (10 - 28) |
| **E04** | .28 | (7) | .28 | (7) | .51 | (13) | .39 | (10) | .59 - 1.89 | (15 - 48) |
| **E045/Z045** | .37 | (9.4) | .39 - 1.06 | (10-27) | .63 -1.46 | (16 - 37) | .49 | (12.5) | .71 - 1.50 | (18 - 38) |
| **E06/Z06** | .41/.42 | (10.5 / 10.7) | .39 - .79 | (10-20) | .65 -1.04 | (16.5-26.5) | .59 | (15) | .71 - 1.50 | (18 - 38) |
| **E065** | .44 | (11.3) | .63 - 1.42 | (16-36) | .98 -1.94 | (24.8-49.3) | .59 | (15) | .71 - 1.50 | (18 - 38) |
| **E08/Z08** | .57/.58 | (14.6 / 14.7) | .39 - 1.97 | (10-50) | .72 -2.29 | (18.2-58.2) | .76 | (19.3) | 1.10 - 1.89 | (28 - 48) |
| **E14/Z14** | .75 | (19) | .59 - 1.97 | (15-50) | 1.06 -2.44 | (27-62) | .98 | (25) | 1.10 - 4.92 | (28 - 125) |
| **E200/Z200** | .96 | (24.3) | 1.46 - 2.24 | (37-57) | 2.93 -4.74 | (74.4-120.4) | 1.38 | (35) | 2.17 - 7.87 | (55 - 200) |
| **E16/Z16** | 1.26 | (32) | .91 - 3.94 | (23-100) | 1.48 -4.54 | (37.5-115.3) | 1.54 | (39) | 1.57 - 3.94 | (40 - 100) |
| **E26/Z26** | 1.44/1.46 | (36.5 / 37.1) | 1.85 - 2.95 | (47-75) | 3.62 -6.57 | (92-167) | 1.97 | (50) | 2.48 - 9.84 | (63 - 250) |
| **E300/Z300** | 1.91 | (48.5) | 1.81 - 2.95 | (46 - 75) | 3.74 -6.69 | (95-170) | 2.52 | (64) | 2.95 - 11.81 | (75 - 300) |


# Quick assembly with ESD!

**E-Z Chain® now available as ESD version**

- Easy to fill on the outer-/inner radius
- Accessible to the cables without opening and closing of lids
- Cost-effective one-piece design E-Chain®
- Mounting brackets available

**More information ➤ www.igus.com**

## **Assembling** | **Separating** | **Filling** | Series E03 · E04 · E/Z045

Twist and click or twist and devide

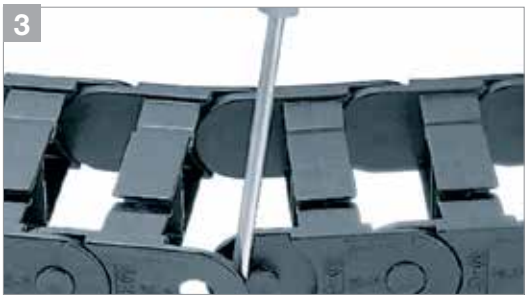
Press in cable

## **Assembling** | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

Push and click...

Snap in pin

## **Separating** | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300




Release side link

Twist and pull apart

## **Filling** | Series E/Z06 · E065 · E/Z08 · E/Z14 · E/Z200 · E/Z16 · E/Z26 · E/Z300

Press in cable

Pull out cable

# E-Chain System® E-Z Chain Series E03

.20

## Price Index

Series E03

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Smallest inner heights .20" (5 mm)
Series E03 E-Z Chain

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 03 E2 Micro**

## Features & Benefits

1. Smallest E-Chain® - interior dimensions .20" x .20" (5 x 5 mm)
2. Small pitch for low-noise and smooth operation
3. Very easy to fill - ideal for harnessed cable assemblies, without opening and closing lids
4. Mounting bracket with integrated strain relief
5. Very lightweight - ideal for low fill weight
6. Patented push button design holds the links together
7. For smallest bending radii Chainflex® CF98/CF99 - 4 x d

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E03-05-010-0** | **E-Chain®** |
| 1 Set **E03-05-12Z** | **Mounting Bracket** |

# E-Chain System® E-Z Chain Series E03 Installation Dimensions



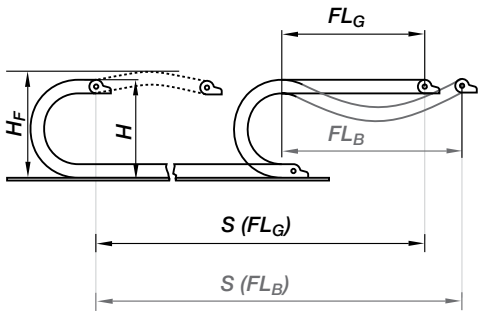


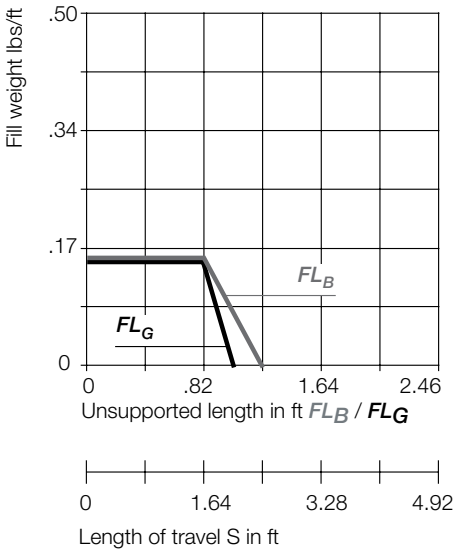
## Short travel, unsupported length

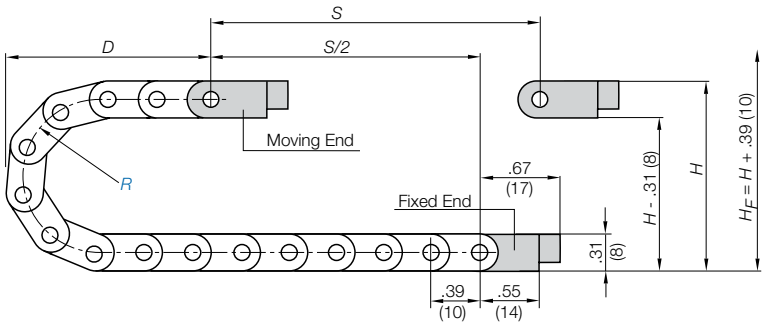
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .39" (10 mm)
**Links per ft (m): =** 30.47 (100)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***$H_F$ = H* + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | .39 (010) | .47 (012) | .59 (015) | .71 (018) | 1.10 (028) |
|---|---|---|---|---|---|
| H | 1.10 (28) | 1.26 (32) | 1.50 (38) | 1.73 (44) | 2.52 (64) |
| D | 1.14 (29) | 1.22 (31) | 1.34 (34) | 1.46 (37) | 1.85 (47) |
| K | 2.17 (55) | 2.36 (60) | 2.76 (70) | 3.15 (80) | 4.33 (110) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

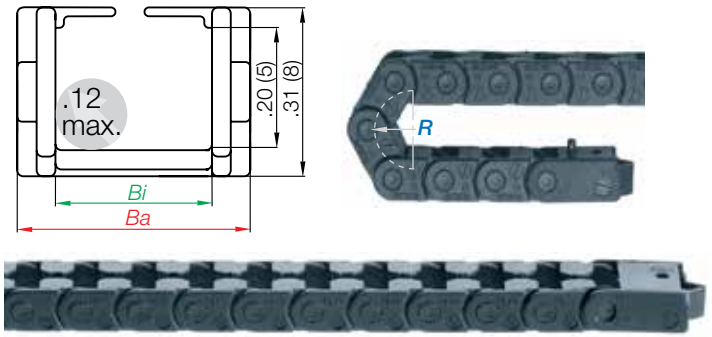
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E03

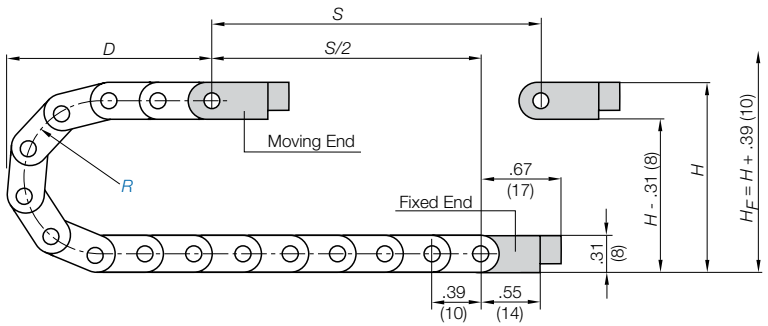
## Series E03 - Split crossbar along the outer radius






Part Number Structure

| E03- | 05- | 010- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: E03-05-[028]-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) | Crossbar gap in. (mm) |
|---|---|---|---|---|---|---|
| E03-05- | [ ] | -0* | .20 (5) | .34 (8.7) | ≈ 0.020 (0.03) | .04 (1) |
| E03-07- | [ ] | -0* | .28 (7) | .42 (10.7) | ≈ 0.026 (0.04) | .08 (2) |
| E03-10- | [ ] | -0* | .39 (10) | .54 (13.7) | ≈ 0.033 (0.05) | .08 (2) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 03-05-[028]-0

| | 010 | 012 | 015 | 018 | 028 |
|---|---|---|---|---|---|
| *R* | .39 (010) | .47 (012) | .59 (015) | .71 (018) | 1.10 (028) |
| H | 1.10 (28) | 1.26 (32) | 1.50 (38) | 1.73 (44) | 2.52 (64) |
| D | 1.14 (29) | 1.22 (31) | 1.34 (34) | 1.46 (37) | 1.85 (47) |
| K | 2.17 (55) | 2.36 (60) | 2.76 (70) | 3.15 (80) | 4.33 (110) |

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

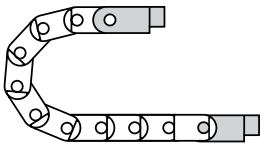
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E-Z Chain
# Series E03
# Mounting Brackets

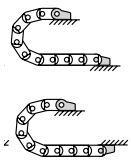
## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Adaptor plate for rapid installation

**Moving end with bore**
**03 ...1Z**

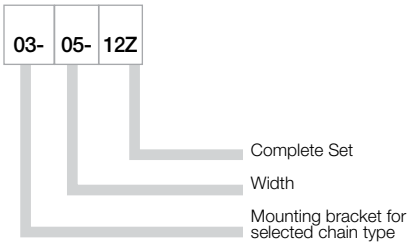


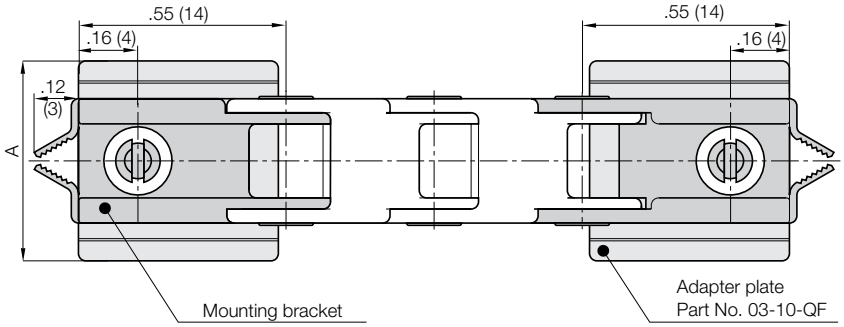
**Fixed end with pin**
**03...2Z**



Possible installation configurations -

**Part Number Structure**



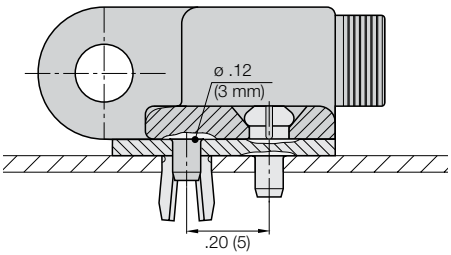




**Full set, for both ends:**
03- 05- 12Z Full set, **each part with pin/bore**
**Single-part order:**
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**

| Width Index | Part No. Full Set | Dimension A in. | (mm) |
|---|---|---|---|
| -05 | **03-05-12PZ** | .34 | (8.7) |
| -07 | **03-07-12PZ** | .42 | (10.7) |
| -10 | **03-10-12PZ** | .54 | (13.7) |

## Additional Accessories

**03-10-QF = Adapter plate for all sizes**
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.




PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain Series E04

.28

## Price Index

Series E04

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

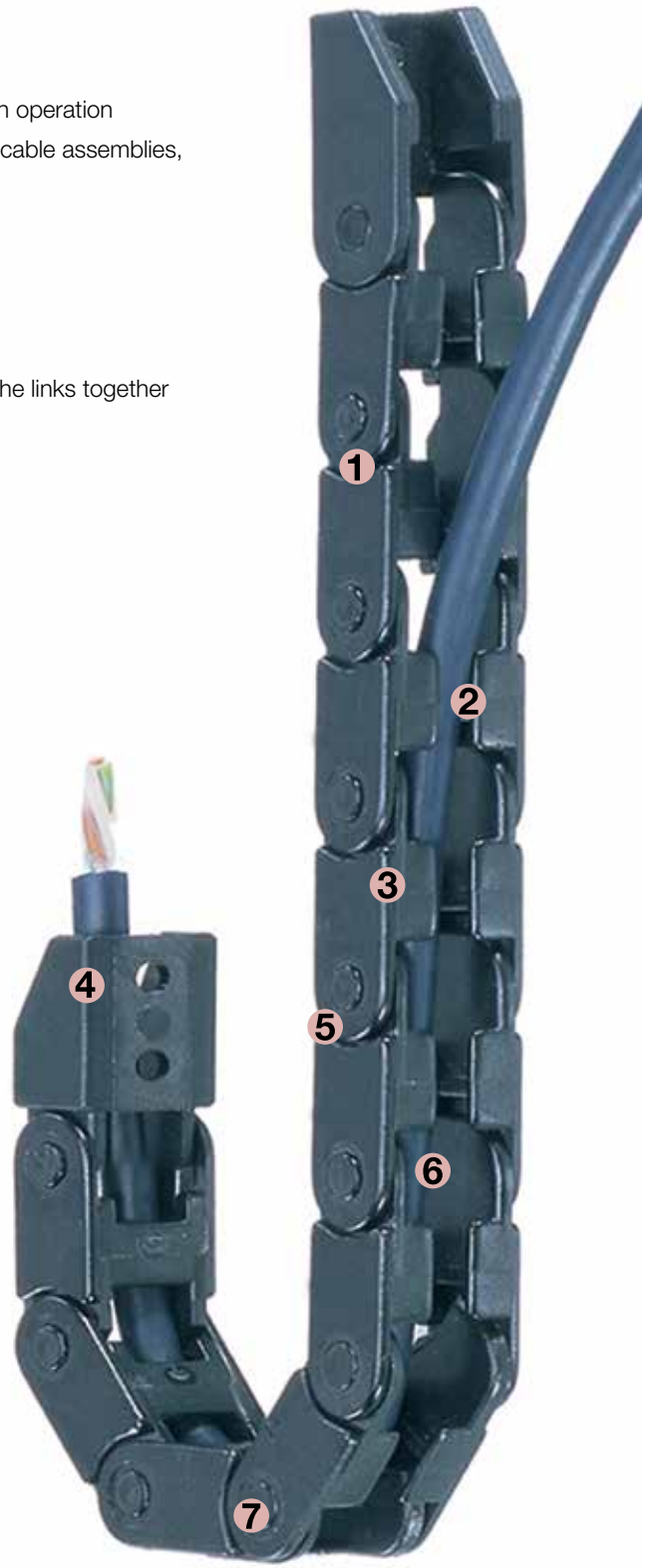
## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Very easy to fill - ideal for harnessed cable assemblies, without opening and closing lids
3. For high acceleration
4. Mounting brackets available
5. Limited torsion tolerance
6. Cable friendly smooth interior
7. Patented push button design holds the links together

Special solution:
opening gap (0.8 mm)
**Part No. E04-07-015-S**




## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a non-opening Energy is needed
  ➤ **Series 04 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E04-07-038-0** | **E-Chain®** |
| 1 Set **040-07-12** | **Mounting Bracket** |

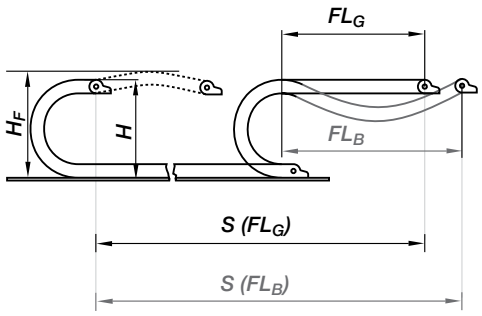
# E-Chain System® E-Z Chain Series E04 Installation Dimensions

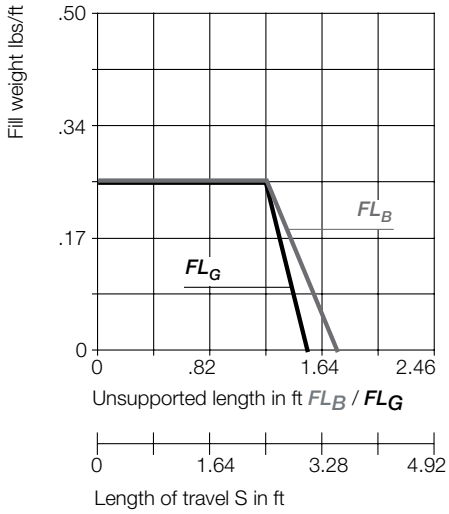
**Short travel, unsupported length**

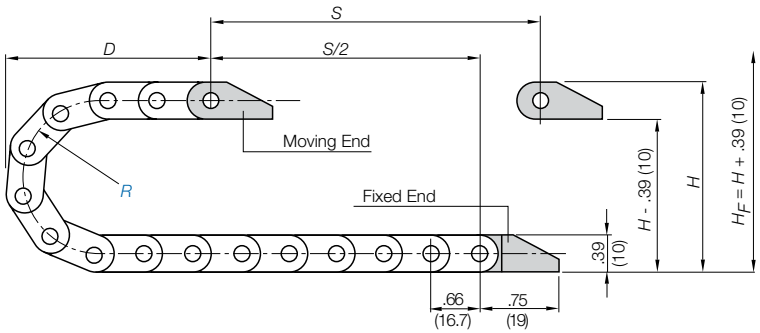
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .66" (16.7 mm)
**Links per ft (m): =** 18.28 (60)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .59 (015) | .71 (018) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|---|---|
| H | 1.57 (40) | 1.81 (46) | 2.60 (66) | 3.39 (86) | 4.17 (106) |
| D | 1.77 (45) | 1.89 (48) | 2.28 (58) | 2.68 (68) | 3.07 (78) |
| K | 3.35 (85) | 3.54 (90) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G | VDE 0304 IIC UL94 HB |

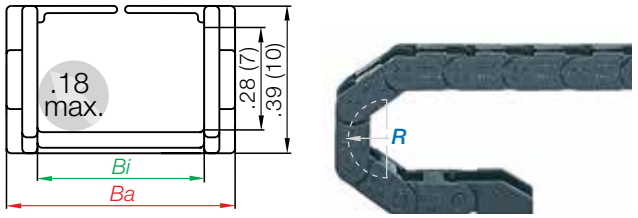
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

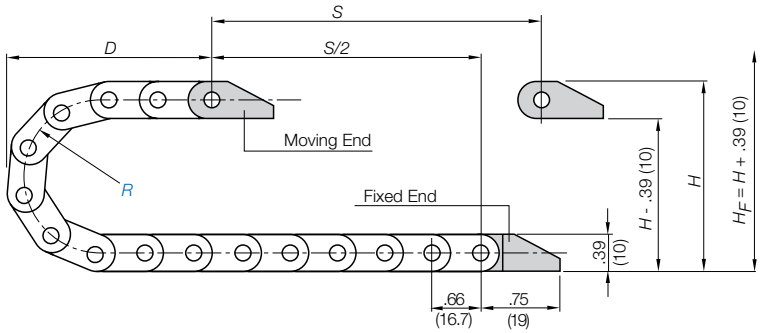
# E-Chain System® E-Z Chain
# Series E04

## Series E04 - Split crossbar along the outer radius



Part Number Structure

| E04- | 07- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: E04-07-[038]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) | Crossbar Gap in. (mm) |
|---|---|---|---|---|---|---|
| E04-07- | [ ] | -0* | .28 (7) | .51 (13) | ≈ 0.053 (0.08) | .10 (2.5) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E04-07-[038]-0

| | 015 | 018 | 028 | 038 | 048 |
|---|---|---|---|---|---|
| R | .59 (015) | .71 (018) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H | 1.57 (40) | 1.81 (46) | 2.60 (66) | 3.39 (86) | 4.17 (106) |
| D | 1.77 (45) | 1.89 (48) | 2.28 (58) | 2.68 (68) | 3.07 (78) |
| K | 3.35 (85) | 3.54 (90) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

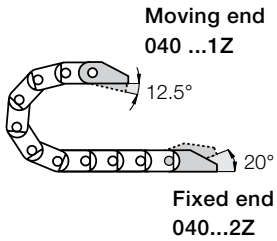
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

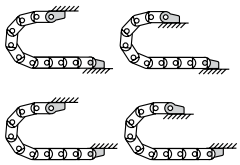
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E-Z Chain
# Series E04
# Mounting Brackets

## Polymer, one-piece

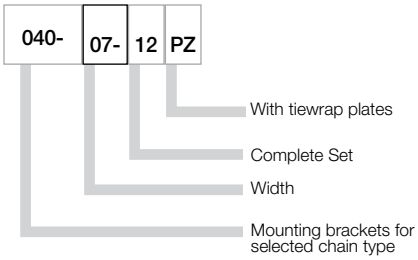
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled

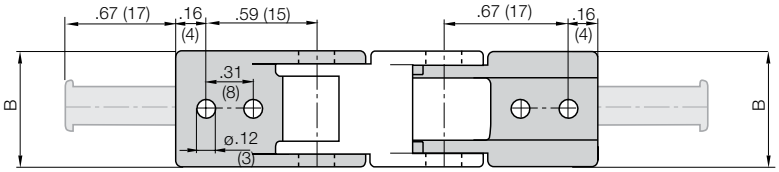




Possible installation configurations -

**Part Number Structure**




**Full set, for both ends:**

040-07-12 Full set, **each part with pin/bore**

**Single-part order:**

040-07-1 Mounting bracket **with bore**

040-07-2 Mounting bracket **with pin**

| Chain Type | Part No. Full set without Tiewrap Plate | Part No. Full set with Tiewrap Plate | Dimension B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|
| E04-07 | **040-07-12** | **040-07-12PZ** | .47 | (12) | 1 |

## Additional accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
Only available for the 040-07 E-Chain - **Part No. 040-07-QS**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E045/Z045

.37 .37

## Price Index

Series E045

## Special Features / Options

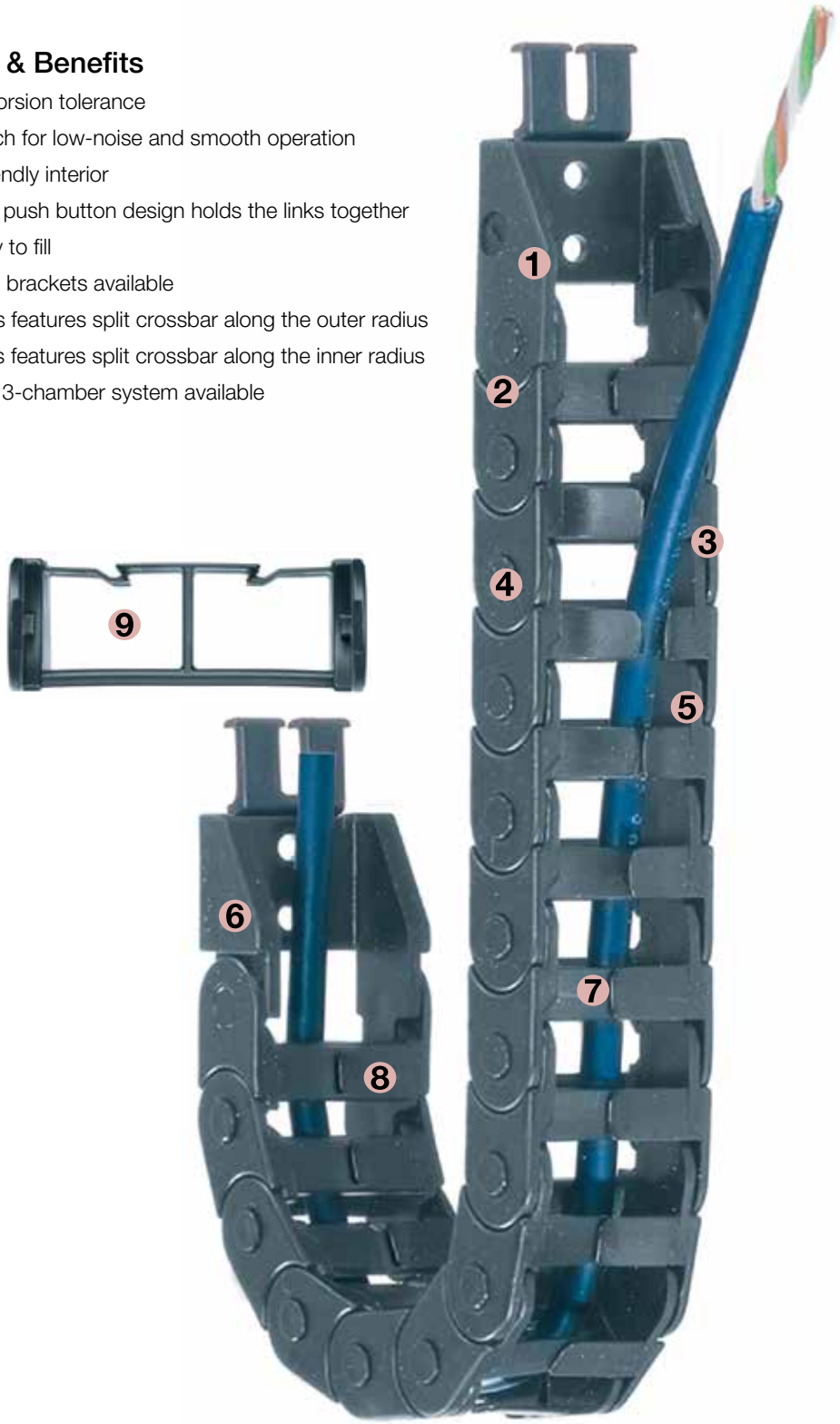
IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Features & Benefits

1. Limited torsion tolerance
2. Small pitch for low-noise and smooth operation
3. Cable friendly interior
4. Patented push button design holds the links together
5. Very easy to fill
6. Mounting brackets available
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. 1-, 2-, or 3-chamber system available




## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Usage Guidelines

- If filling is required without opening and closing
- If a very small pitch is required

- If smooth operation is required
  ➤ **Series 045 E2 Micro**
- If high stability is required
  ➤ **Series 06 E2 Micro**
- If non-opening is required
  ➤ **Series 045 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

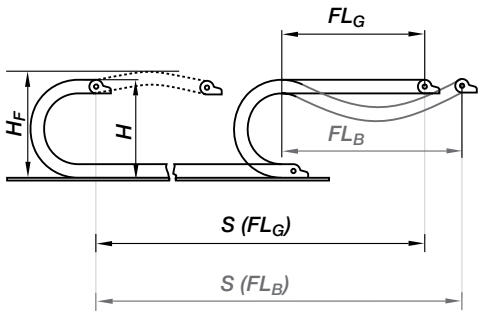
| | |
|---|---|
| 3.28 ft (1 m) **E045-16-038-0** | **E-Chain®** |
| 1 Set **0450-16-12** | **Mounting Bracket** |

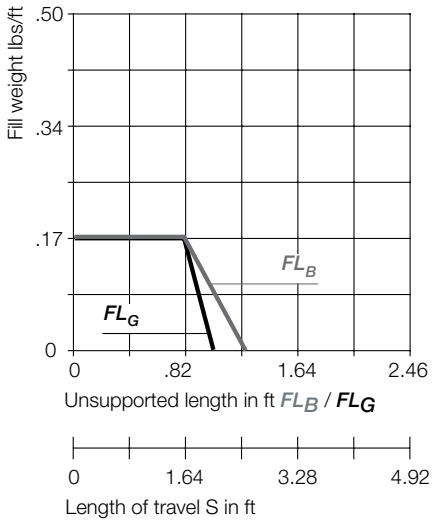
# E-Chain System® E-Z Chain Series E045/Z045 Installation Dimensions

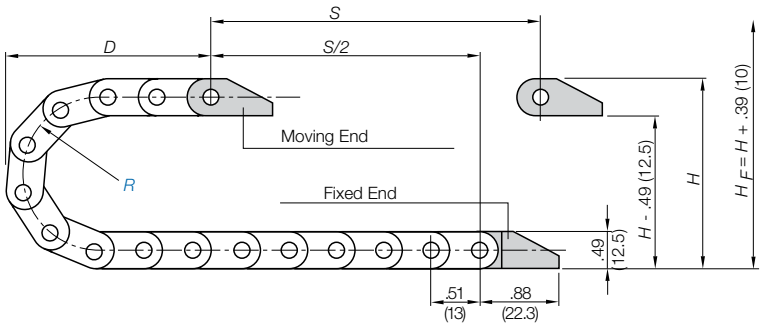
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .51" (13 mm)
**Links per ft (m): =** 23.47 (77)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F$ **= H + .39 in. (10 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

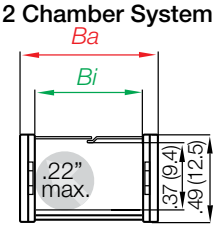
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E045/Z045

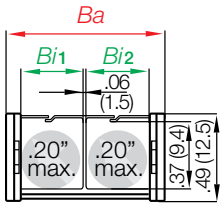
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

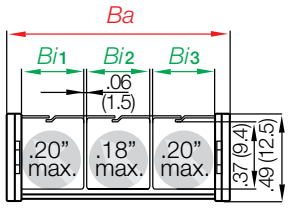
## Series E045 - Split crossbar along the outer radius

Single Chamber System
2 Chamber System

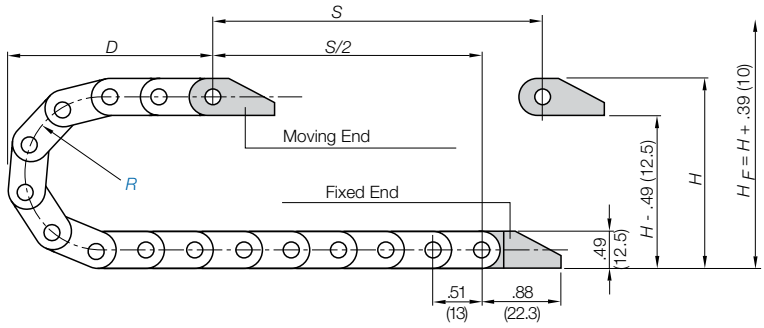



3 Chamber System

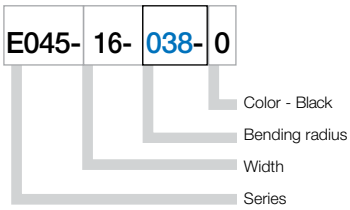


Supplement part number with required radius. Example: E045-16-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)




Part Number Structure




| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) | Crossbar Gap in. (mm) |
|---|---|---|---|---|
| **Single Chamber System** | | | | |
| E045-10-□-0* | .39 (10) | .63 (16) | ≈ 0.06 (0.09) | .08 (2) |
| E045-16-□-0 | .63 (16) | .91 (23) | ≈ 0.07 (0.11) | - |
| **2 Chamber System** | | | | |
| E045-2/7-□-0* | .28/.28 (7/7) | .91 (23) | ≈ 0.09 (0.13) | .09 (2.25) |
| E045-2/9-□-0* | .35/.35 (9/9) | 1.06 (27) | ≈ 0.09 (0.14) | .09 (2.25) |
| **3 Chamber System** | | | | |
| E045-3/9-□-0* | .35/.35/.35 (9/9/9) | 1.46 (37) | ≈ 0.11 (0.17) | .09 (2.25) |

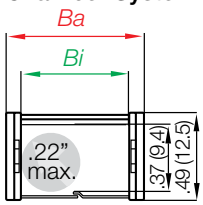
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E045-16-038-0

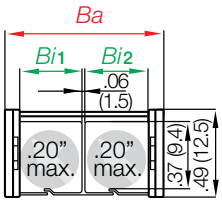
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

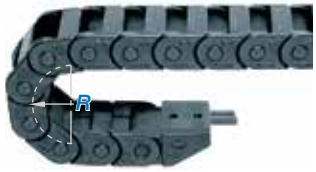
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

## Series Z045 - Split crossbar along the inner radius

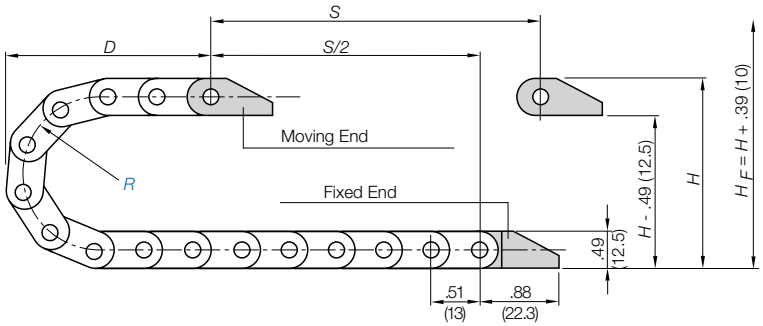
Single Chamber System
2 Chamber System



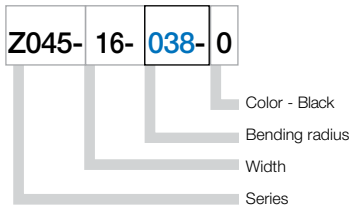



Supplement part number with required radius. Example: Z045-16-038-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23..47 (77)




Part Number Structure




| Part Number<br>Single Chamber System | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) | Crossbar Gap<br>in. (mm) |
|---|---|---|---|---|
| Z045-16-☐ -0* | .63 (16) | .91 (23) | ≈ 0.07 (0.11) | .08 (2) |
| 2 Chamber System | | | | |
| Z045-2/7-☐ -0* | .28/.28 (7/7) | .91 (23) | ≈ 0.09 (0.13) | .09 (2.25) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: Z045-16-038 -0

| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain Series E045/Z045 Mounting Brackets

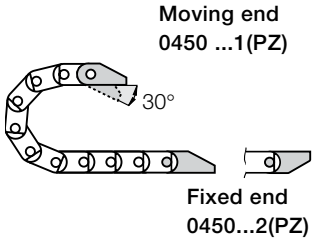


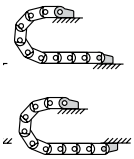
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Polymer, one-piece

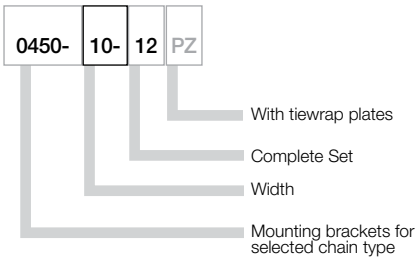
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled





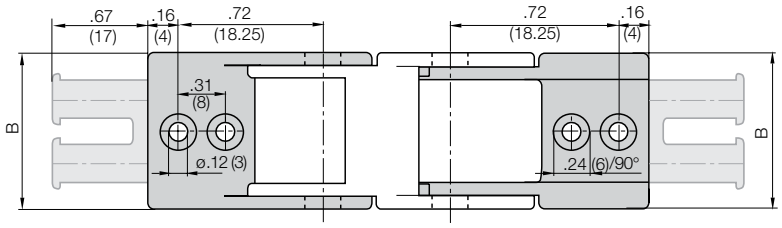
Possible installation configurations -

### Part Number Structure

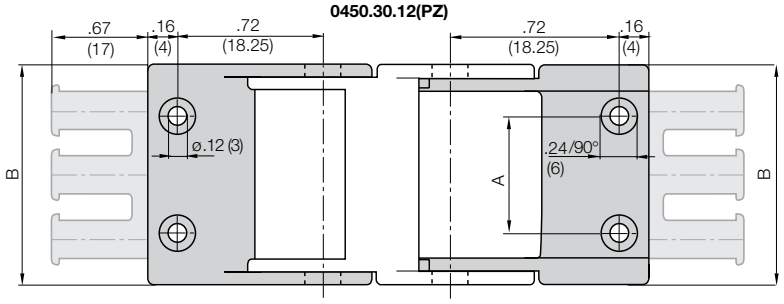



**Full set, for both ends:**
0450-10-12PZ
Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
0450-10-1PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2PZ
Mounting bracket **with pin + tiewrap plate**

**0450.10.12(PZ) – 0450.20.12(PZ)**



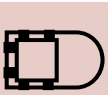

**0450.30.12(PZ)**




| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| E045/Z045-10 | **0450-10-12PZ** | **0450-10-12** | — | — | .63 | (16) | 1 |
| E045/Z045-16 | **0450-16-12PZ** | **0450-16-12** | — | — | .87 | (22) | 2 |
| E045/Z045-2/7 | **0450-16-12PZ** | **0450-16-12** | — | — | .87 | (22) | 2 |
| E045/Z045-2/9 | **0450-20-12PZ** | **0450-20-12** | — | — | 1.02 | (26) | 2 |
| E045/Z045-3/9 | **0450-30-12PZ** | **0450-30-12** | .87 | (22) | 1.42 | (36) | 3 |

## Additional Accessories

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**0450-16-12Q**



# E-Chain System® E-Z Chain Series E06/Z06

.42 .41

## Price Index

Series E06/Z06

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable friendly - smooth interior
3. Very lightweight
4. Patented push button design holds the links together
5. Very easy to fill - ideal for harnessed cable assemblies
6. Integrated strain relief option
7. "E" Series features split crossbar along the outer radius
8. "Z" Series features split crossbar along the inner radius
9. Limited torsion tolerance

Special solution -
opening gap 0.14 (3.5 mm)
**Part No. E06-10-018S3**

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- "Z" Series is unsuitable for gliding applications
  ➤ **Series 07 Zipper**
- If non-opening is required
  ➤ **Series 06 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E06-10-038-0** | **E-Chain®** |
| 1 Set **060-10-12** | **Mounting Bracket** |

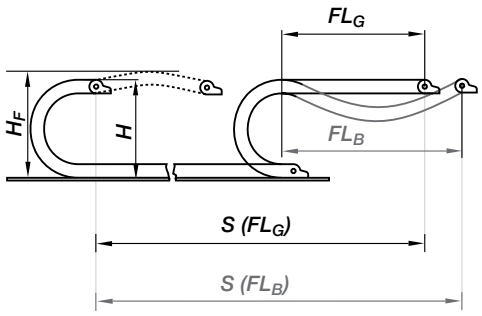
# E-Chain System® E-Z Chain Series E06/Z06 Installation Dimensions

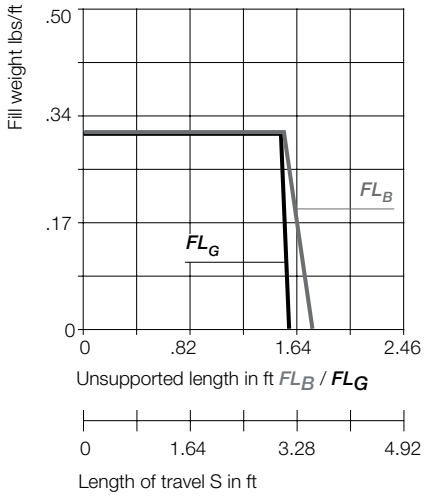
**Short travel, unsupported length**

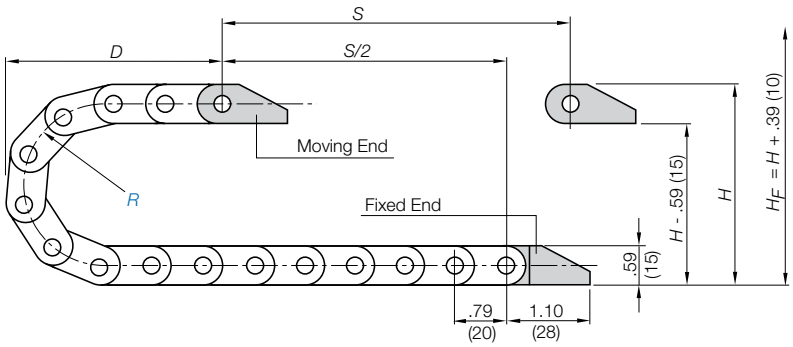
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
HF = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

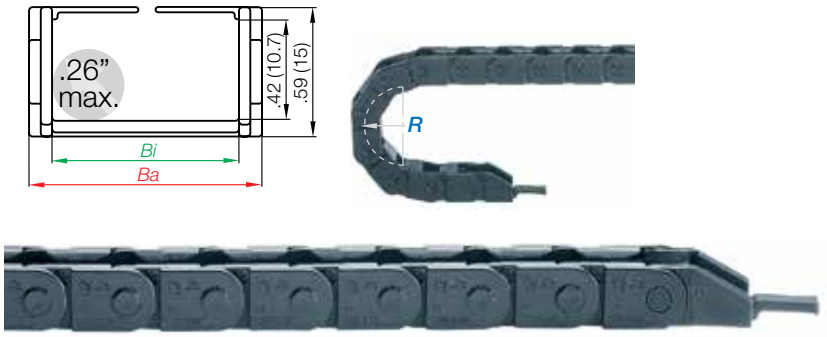
Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

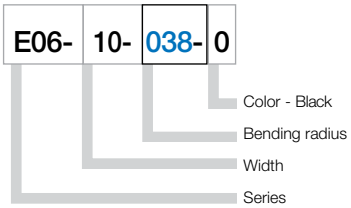
# E-Chain System® E-Z Chain
# Series E06/Z06

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

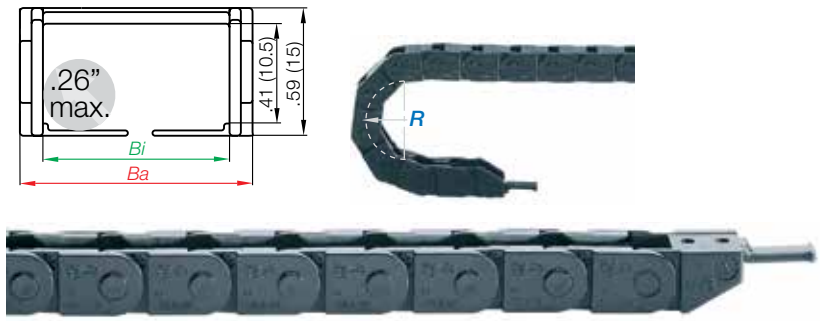
## Series E06 - Split crossbar along the outer radius



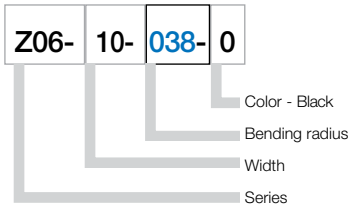

**Part Number Structure**

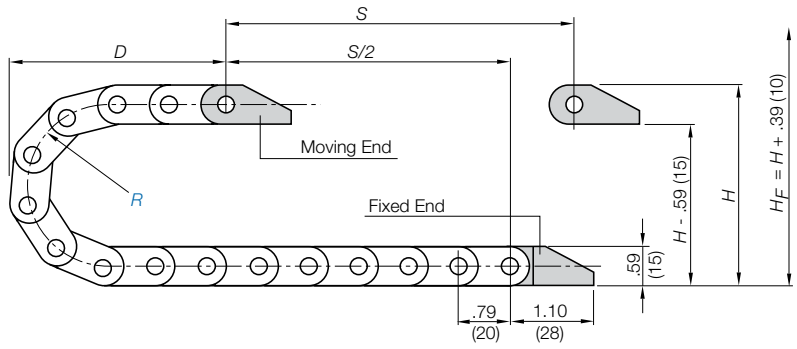



## Series Z06 - Split crossbar along the inner radius




**Part Number Structure**




Supplement part number with required radius. Example: E06-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number Split Crossbar Outer Radius | Split Crossbar Inner Radius | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) | Crossbar Gap in. (mm) |
|---|---|---|---|---|---|---|
| E06-10 | Z06-10* | [ ] -0 | .39 (10) | .65 (16.5) | ≈ 0.09 (0.14) | .22 (5.5) |
| E06-16- | Z06-16* | [ ] -0 | .63 (16) | .86 (22.5) | ≈ 0.11 (0.16) | .22 (5.5) |
| E06-20- | Z06-20 | [ ] -0 | .79 (20) | 1.04 (26.5) | ≈ 0.12 (0.18) | - |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E06-10-[038]-0

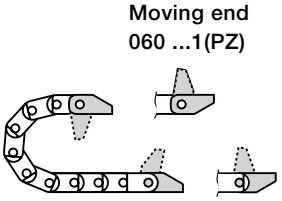
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

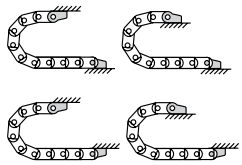
0=Standard color black. For other colors see Chapter 1
*Please note: For this series the crossbars do not overlap. Please see table for gap amount.

# E-Chain System® E-Z Chain
# Series E06/Z06
# Mounting Brackets

## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates



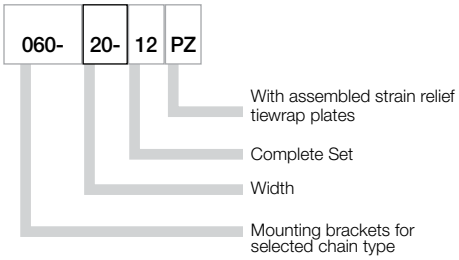


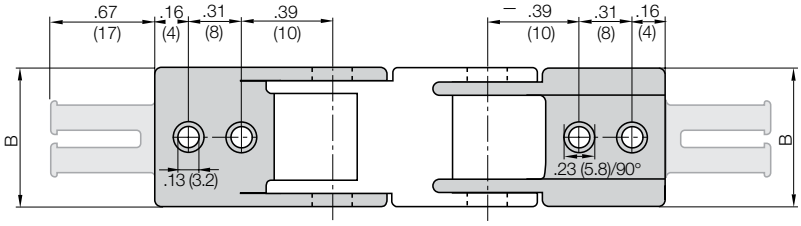
Possible installation configurations -

## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

**Part Number Structure**




**Full set, for both ends:**

060- 20- 12 PZ Full set, **each part with pin/bore**

**Single-part order:**

060- 20- 1 PZ Mounting bracket **with bore**

060- 20- 2 PZ Mounting bracket **with pin**

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|
| E06/Z06-10 | **060-10-12PZ** | **060-10-12** | .65 | (16.5) | 1 |
| E06/Z06-16 | **060-16-12PZ** | **060-16-12** | .89 | (22.5) | 2 |
| E06/Z06-20 | **060-20-12PZ** | **060-20-12** | 1.06 | (27.0) | 2 |

# Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**060-10-QS**
**060-16-QS**
**060-20-QS**

**Quickfix -** mounting bracket with dowel, upon request
**Part No. 060-20-34QZ**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E065/Z065

.45

## Price Index

Series E065/Z065

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Torsional motion possible

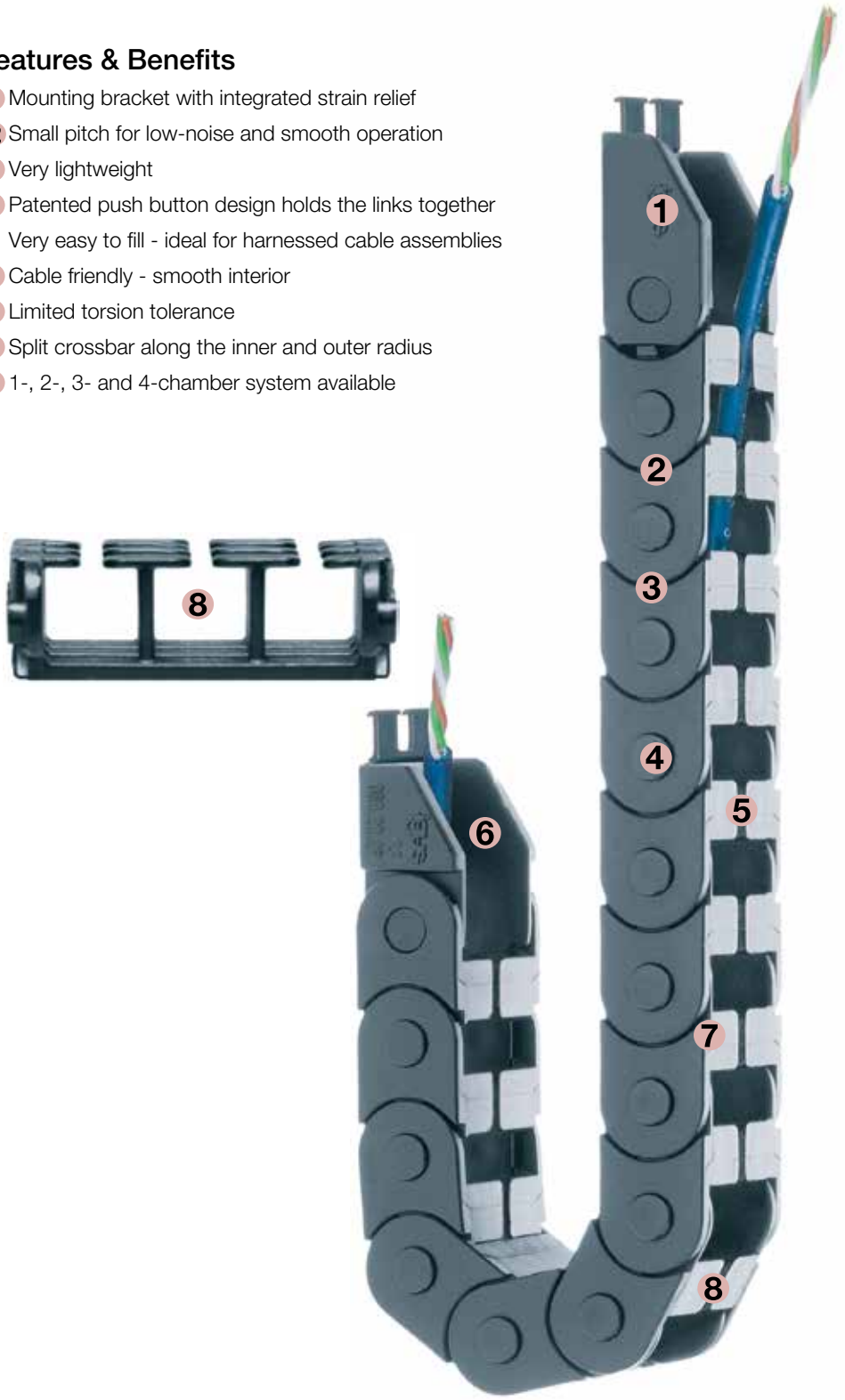
Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise and smooth operation
3. Very lightweight
4. Patented push button design holds the links together
   Very easy to fill - ideal for harnessed cable assemblies
5. Cable friendly - smooth interior
6. Limited torsion tolerance
7. Split crossbar along the inner and outer radius
8. 1-, 2-, 3- and 4-chamber system available




## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 06 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

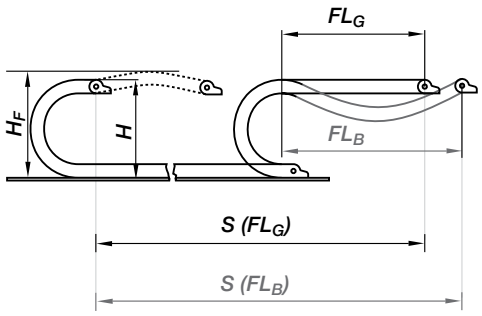
| | |
|---|---|
| x.xx ft (1 m) **E065-16-038-0** | **E-Chain®** |
| 1 Set **0650-16-12PZ** | **Mounting Bracket** |

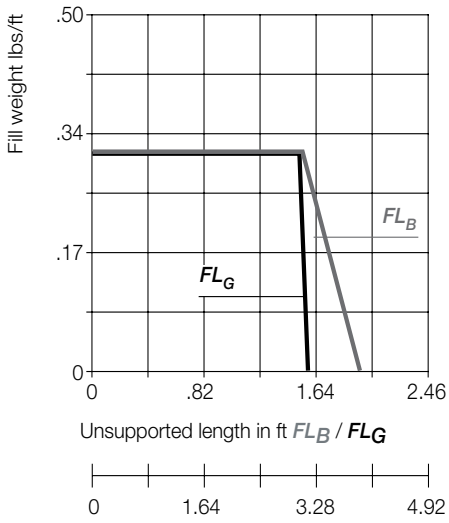
# E-Chain System® E-Z Chain Series E065/Z065 Installation Diemnsions

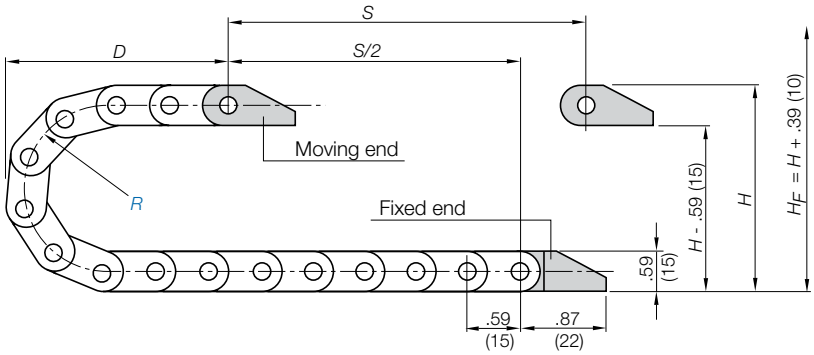
**Short travel, unsupported length**

- ● $FL_B$ = unsupported with permitted sag
- ● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 1.89 (48) | 2.28 (58) | 3.68 (68) |
| K | 3.54 (90) | 4.72 (120) | 5.91 (150) |

**Pitch per link: =** .59" (15 mm)
**Links per ft (m): =** 20.34 (67)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

## Technical Data

Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E065/Z065

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

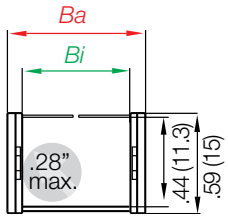
## Series E065
## Split crossbar along the outer radius

**Part Number Structure**

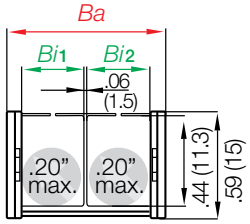
E065- 16- 038- 0

- Color - Black
- Bending radius
- Width
- Series

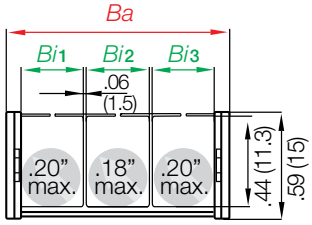
**1 Chamber System**



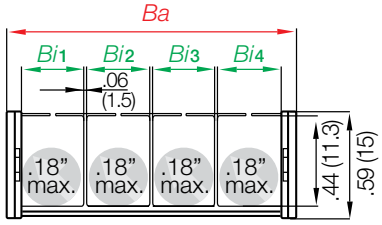

**2 Chamber System**



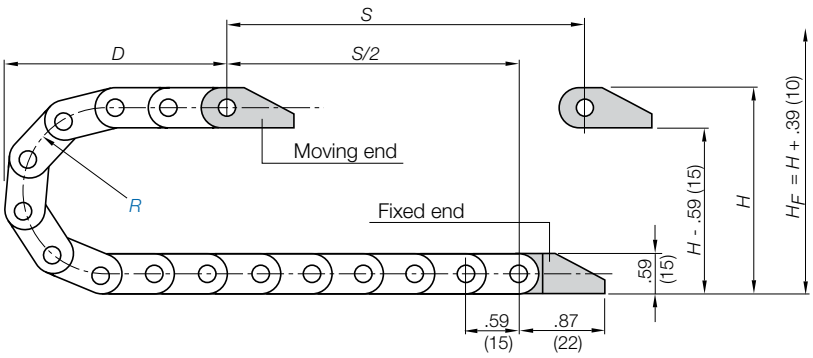

**3 Chamber System**




**4 Chamber System**




Supplement part number with required radius. Example: E065-16-038-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20.34 (67)



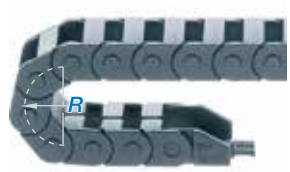

| Part Number 1 Chamber System | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E065-16-☐-0* | .63 (16) | .98 (24.8) | ≈ 0.11 (0.17) |
| **2 Chamber System** | | | |
| E065-2/9-☐-0* | .35/.35 (9/9) | 1.15 (29.3) | ≈ 0.13 (0.19) |
| **3 Chamber System** | | | |
| E065-3/9-☐-0* | .35/.35/.35 (9/9/9) | 1.55 (39.3) | ≈ 0.15 (0.22) |
| **4 Chamber System** | | | |
| E065-4/9-☐-0* | .35/.35/.35/.35 (9/9/9/9) | 1.94 (49.3) | ≈ 0.17 (0.25) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E065-16-038-0

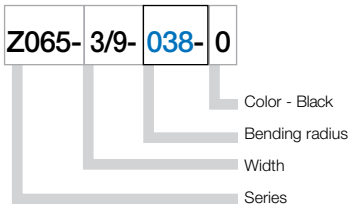
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 1.89 (48) | 2.28 (58) | 3.68 (68) |
| K | 3.54 (90) | 4.72 (120) | 5.91 (150) |

* Crossbars do not overlap. There is a gap of .10" (2.5mm)

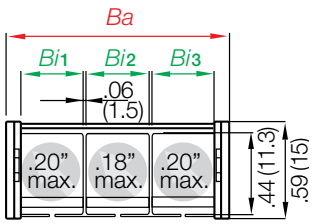
## Series Z065
## Split crossbar along the inner radius



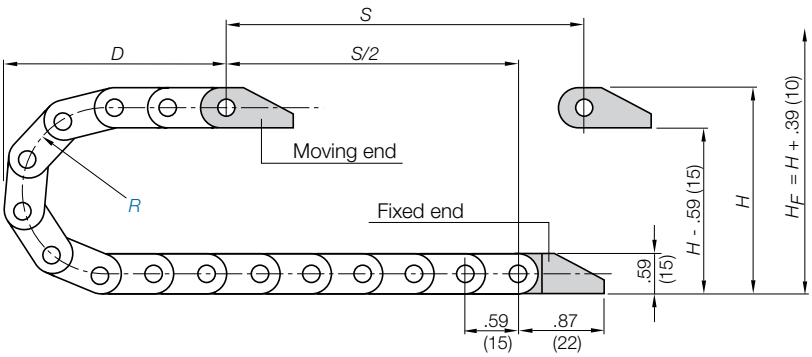
**Part Number Structure**




**3 Chamber System**




Supplement part number with required radius. Example: Z065-3/9-038-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)




| Part Number<br>3 Chamber System | Bi<br>in. (mm) | Ba<br>in. (mm) | Weight<br>lbs/ft (kg/m) |
|---|---|---|---|
| Z065-3/9-[ ]-0 | .35/.35/.35 (9/9/9) | 1.55 (39.3) | ≈ 0.15 (0.22) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: Z065-3/9-038-0

| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 1.89 (48) | 2.28 (58) | 3.68 (68) |
| K | 3.54 (90) | 4.72 (120) | 5.91 (150) |

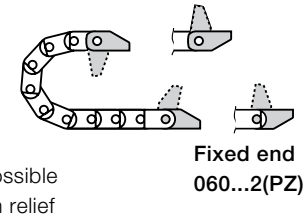
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

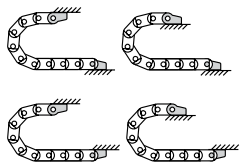
# E-Chain System® E-Z Chain
# Series E065/Z065
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with integrated strain relief tiewrap plates





Possible installation configurations -

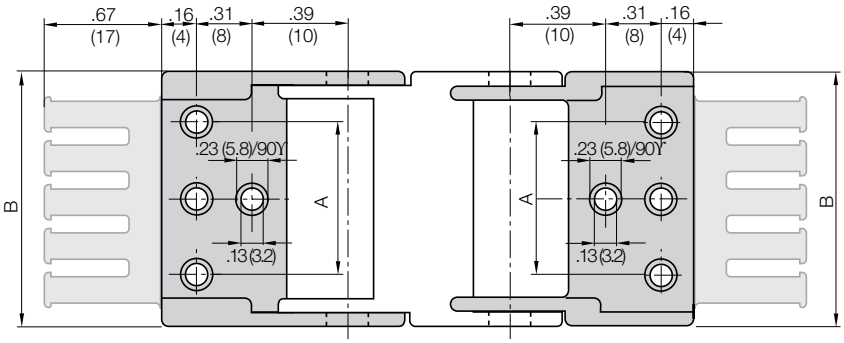
## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

**Part Number Structure**

| 0650- | 3/99- | 12 | PZ |
|---|---|---|---|

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 3/99-: Width
- 0650-: Mounting brackets for selected chain type




**Full set, for both ends:**

0650- 3/9- 12 PZ Full set, **each part with pin/bore**

**Single-part order:**

0650- 3/9- 1 PZ Mounting bracket **with bore**

0650- 3/9- 2 PZ Mounting bracket **with pin**

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimensions A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| E065-16- | **0650-16-12PZ** | **0650-16-12** | | — | .89 | (22.5) | 2 |
| E065-2/9 | **0650-2/9-12PZ** | **0650-2/9-12** | | — | 1.06 | (27) | 2 |
| E065/Z065-3/9 | **0650-3/9-12PZ** | **0650-3/9-12** | .87 | (22) | 1.46 | (37) | 3 |
| E065-4/9 | **0650-4/9-12PZ** | **0650-4/9-12** | 1.26 | (32) | 1.85 | (47) | 4 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request

**Quickfix -** mounting bracket with dowel, upon request

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E-Z Chain Series E08/Z08

.57 .58

## Price Index

Series E08/Z08

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Cable-friendly interior
2. Small pitch for low-noise and smooth operation
3. Lightweight
4. Patented push button design holds the links together
5. Integrated strain relief option
6. Very easy to fill - ideal for harnessed cable assemblies
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius
9. Limited torsion tolerance

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- “Z” Series is unsuitable for gliding applications
  ➤ **Series 09 Zipper**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E08-30-038-0** | **E-Chain®** |
| 1 Set **080-30-12PZ** | **Mounting Bracket** |

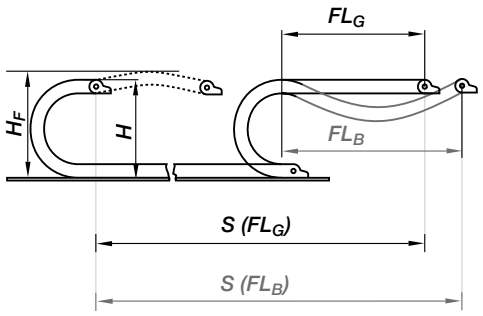
# E-Chain System® E-Z Chain Series E08/Z08 Installation Dimensions

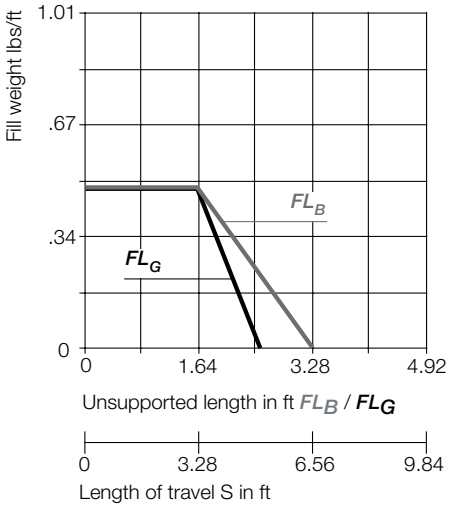


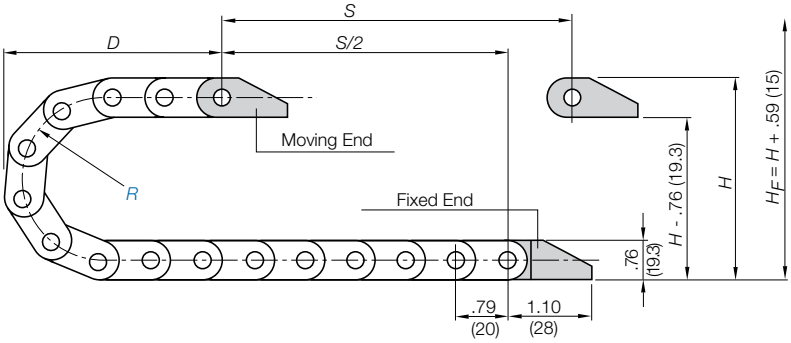
### Short travel, unsupported length

- ● $FL_B$ = unsupported with permitted sag
- ● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: ***HF = H + .59 in. (15 mm)*** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|
| H | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) |

**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
HF = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

## Technical Data

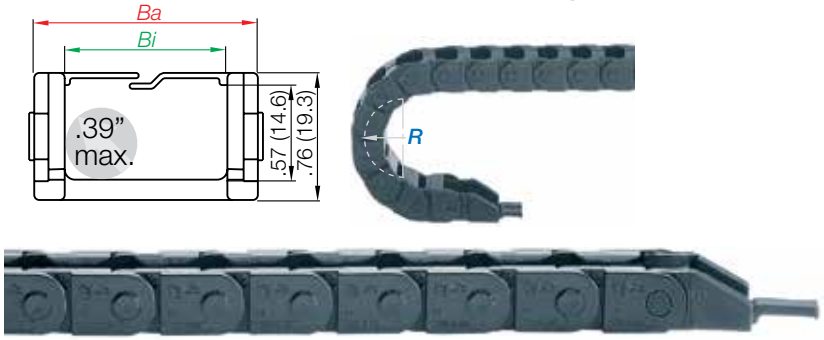
Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E08/Z08

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E08 - Split crossbar along the outer radius

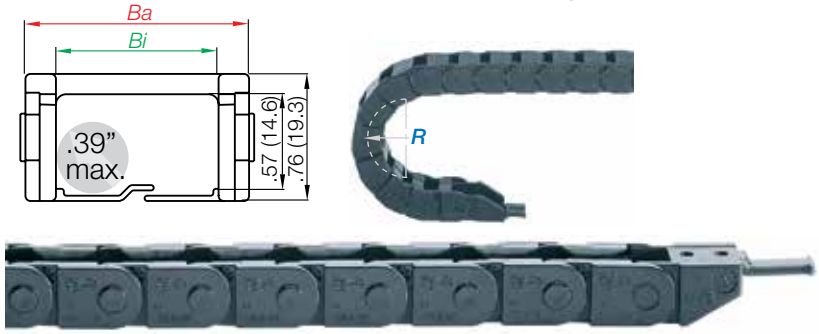



Part Number Structure

| E08- | 30- | 038- | 0 |
|---|---|---|---|

- 038- : Color - Black
- 038- : Bending radius
- 30- : Width
- E08- : Series

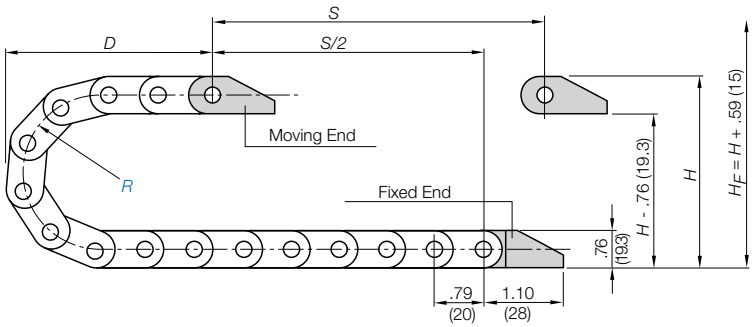
## Series Z08 - Split crossbar along the inner radius




Part Number Structure

| Z08- | 30- | 038- | 0 |
|---|---|---|---|

- 038- : Color - Black
- 038- : Bending radius
- 30- : Width
- Z08- : Series




Supplement part number with required radius. Example: E08-10-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number Split Crossbar Outer Radius | Split Crossbar Inner Radius | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| E08-10 | Z08-10 | | -0 | .39 (10) | .72 (18.2) | ≈ 0.14 (0.21) |
| E08-16- | Z08-16 | | -0 | .63 (16) | .95 (24.2) | ≈ 0.16 (0.24) |
| E08-20- | Z08-20 | | -0 | .79 (20) | 1.11 (28.2) | ≈ 0.17 (0.25) |
| E08-30- | Z08-30 | | -0 | 1.18 (30) | 1.50 (38.2) | ≈ 0.19 (0.28) |
| E08-40- | Z08-40 | | -0 | 1.57 (40) | 1.90 (48.2) | ≈ 0.21 (0.31) |
| E08-50- | Z08-50 | | -0 | 1.97 (50) | 2.29 (58.2) | ≈ 0.25 (0.37) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E08-10-[038]-0

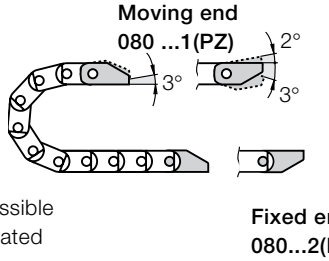
| | 028 | 038 | 048 |
|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) |

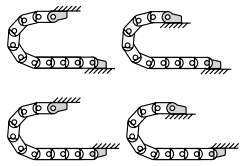
0=Standard color black. For other colors see Chapter 1

# E-Chain System® E-Z Chain
# Series E08/Z08
# Mounting Brackets

## Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates

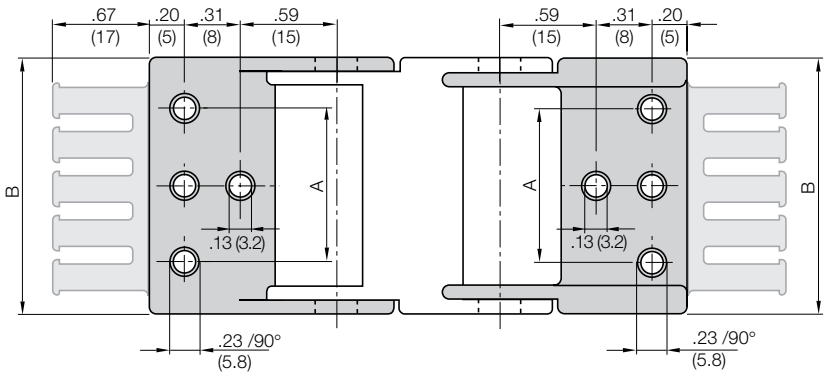




Possible installation configurations -

## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.




**Part Number Structure**

| 080- | 20- | 12 | PZ |
|---|---|---|---|

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20: Width
- 080-: Mounting brackets for selected chain type

**Full set, for both ends:**
080- 20- 12 PZ Full set, **each part with pin/bore**

**Single-part order:**
080- 20- 1 PZ Mounting bracket **with bore**
080- 20- 2 PZ Mounting bracket **with pin**

**080-10-12 - 080-20-12:**
Center bores only
**080-30-12 – 080-50-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| E08/Z08-10 | **080-10-12PZ** | **080-10-12** | — | — | .72 | (18.2) | 1 |
| E08/Z08-16 | **080-16-12PZ** | **080-16-12** | — | — | .95 | (24.2) | 2 |
| E08/Z08-20 | **080-20-12PZ** | **080-20-12** | — | — | 1.11 | (28.2) | 2 |
| E08/Z08-30 | **080-30-12PZ** | **080-30-12** | .87 | (22) | 1.50 | (38.2) | 3 |
| E08/Z08-40 | **080-40-12PZ** | **080-40-12** | 1.26 | (32) | 1.90 | (48.2) | 4 |
| E08/Z08-50 | **080-50-12PZ** | **080-50-12** | 1.65 | (42) | 2.29 | (58.2) | 5 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**080-20-QS**
**080-30-QS**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E14/Z14

.75 .75

## Price Index

Series E14/Z14

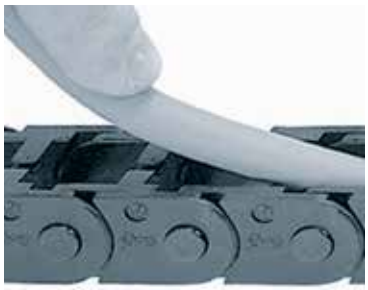
## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

IPA Qualification Certificate: ESD Classification Level 1 (for Series E14-3-038). Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips



Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Small pitch for low-noise and smooth operation
2. Cable-friendly interior
3. Limited torsion tolerance
4. Very easy to fill - ideal for harnessed cable assemblies
5. Integrated strain relief option
6. Patented push button design holds the links together
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- “Z” Series is unsuitable for gliding applications
  ➤ **Series B15 E2 Mini**
- If a long unsupported length is required
  ➤ **Series B15 E2 Mini**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E14-3-038-0** | **E-Chain®** |
| 1 Set **114-3-12PZ** | **Mounting Bracket** |

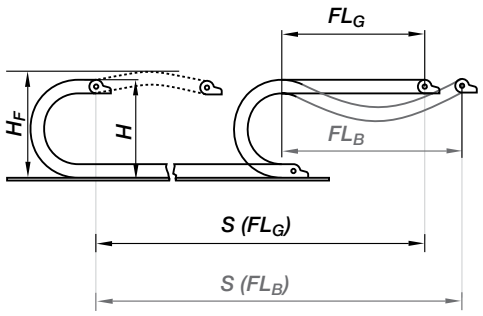
# E-Chain System® E-Z Chain Series E14/Z14 Installation Dimensions

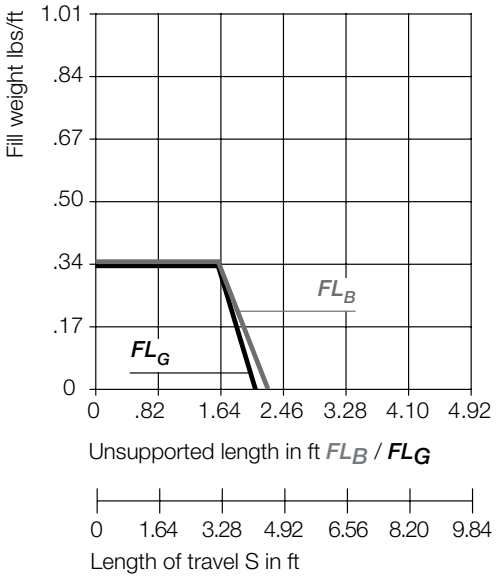
**Short travel, unsupported length**

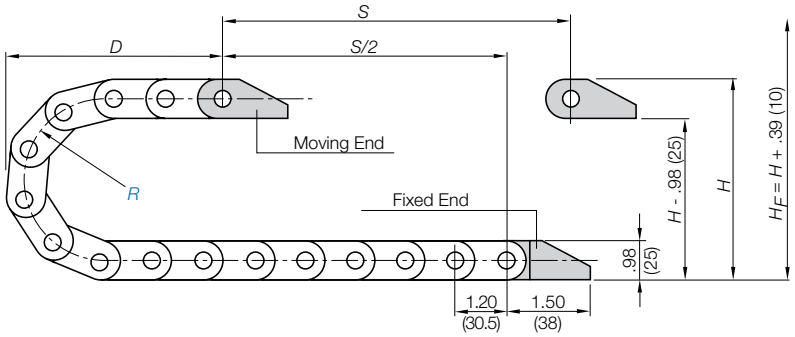
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
|---|---|---|---|---|---|---|
| H | 3.19 (81) | 3.98 (101) | 4.76 (121) | 6.89 (175) | 8.86 (225) | 10.83 (275) |
| D | 3.35 (86) | 3.78 (96) | 4.17 (106) | 5.24 (133) | 6.22 (158) | 7.20 (183) |
| K | 5.91 (150) | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

## Technical Data

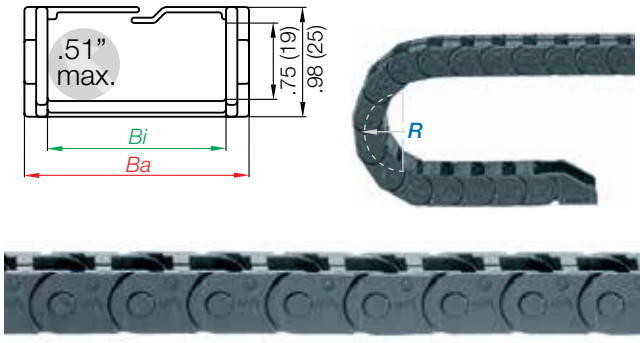
Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E14/Z14

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E14 - Split crossbar along the outer radius

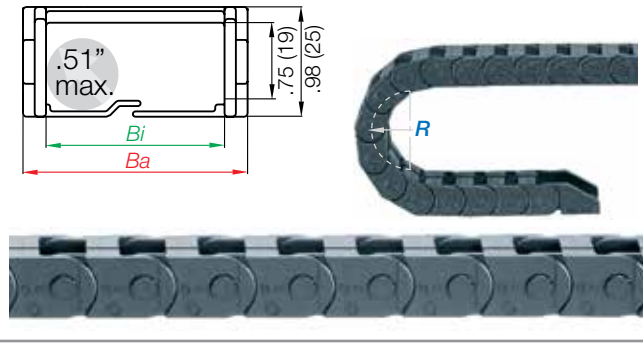


Part Number Structure

E14- 3- 038- 0

- Color - Black
- Bending radius
- Width
- Series

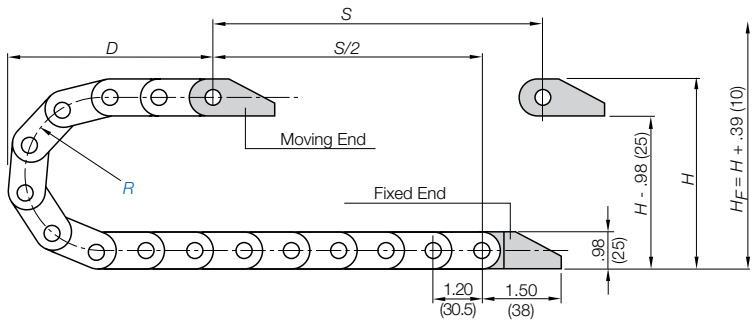
## Series Z14 - Split crossbar along the inner radius



Part Number Structure

Z14- 3- 038- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: E14-3-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number Split Crossbar Outer Radius | Split Crossbar Inner Radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| E14-1- | Z14-1- | [ ] -0 | .59 (15) | 1.06 (27) | ≈ 0.21 (0.31) |
| E14-2- | Z14-2- | [ ] -0 | .98 (25) | 1.46 (37) | ≈ 0.22 (0.32) |
| E14-3- | Z14-3- | [ ] -0 | 1.50 (38) | 1.97 (50) | ≈ 0.27 (0.40) |
| E14-4- | Z14-4- | [ ] -0 | 1.97 (50) | 2.44 (62) | ≈ 0.30 (0.44) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E14-3-[038]-0

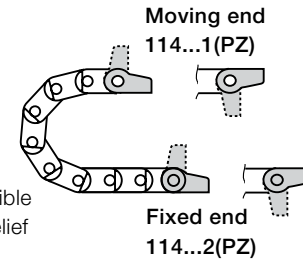
| | 028 | 038 | 048 | 075 | 100 | 125 |
|---|---|---|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
| H | 3.19 (81) | 3.98 (101) | 4.76 (121) | 6.89 (175) | 8.86 (225) | 10.83 (275) |
| D | 3.35 (86) | 3.78 (96) | 4.17 (106) | 5.24 (133) | 6.22 (158) | 7.20 (183) |
| K | 5.91 (150) | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

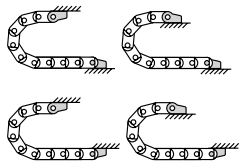
0=Standard color black. For other colors see Chapter 1

# E-Chain System® E-Z Chain
# Series E14/Z14
# Mounting Brackets

## Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates





Possible installation configurations -

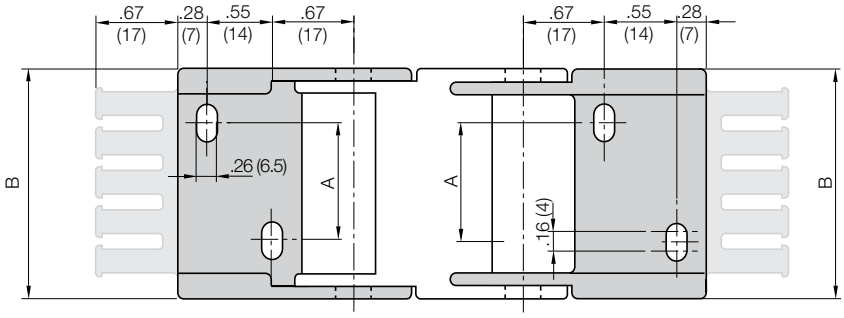
## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

**Part Number Structure**

| 114- | 20- | 12 | P | PZ |
|---|---|---|---|---|

- PZ: With assembled strain relief tiewrap plates
- P: Without assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 114-: Mounting brackets for selected chain type




**Full set, for both ends:**

114- 20- 12 PZ

Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

114- 20- 1 PZ

Mounting bracket **with bore + tiewrap plate**

114- 20- 2 PZ

Mounting bracket **with pin + tiewrap plate**

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| E14/Z14-1 | **114-1-12PZ** | **114-1-12P** | — | — | 1.04 | (26.3) | 2 |
| E14/Z14-2 | **114-2-12PZ** | **114-2-12P** | .39 | (10) | 1.43 | (36.3) | 3 |
| E14/Z14-3 | **114-3-12PZ** | **114-3-12P** | .91 | (23) | 1.94 | (49.3) | 4 |
| E14/Z14-4 | **114-4-12PZ** | **114-4-12P** | 1.38 | (35) | 2.45 | (62.3) | 5 |

## Additional Accessories

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**114-3-12QZ**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E200/Z200

.96 .96

## Price Index

Series E200/Z200

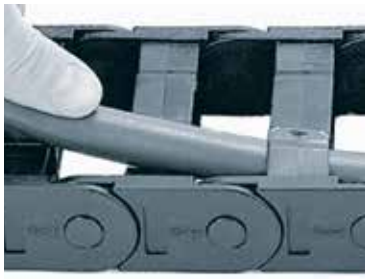
## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips



Just push the cables into the E-Chain using your thumb

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 32.8 ft (10 m) |
| Vertical, standing ≤ 4.92 ft (1.5 m) |
| Side-mounted, unsupp. ≤ 1.64 ft (0.5 m) |
| Rotary requires further calculation |

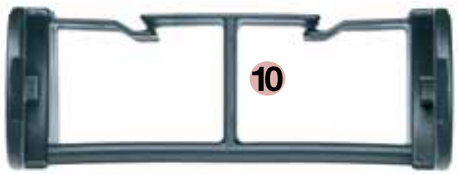
## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 200/240/250 E2 Medium**
- If single extrusion crossbars are required
  ➤ **Series 200/240/250 E2 Medium**

## Features & Benefits

1. Mounting bracket with integrated strain relief
2. Large pins for long service life
3. Patented push button design holds the links together
4. Limited torsion tolerance
5. “E” Series features split crossbar along the outer radius
6. Dirt-repellant exterior
7. Cable-friendly interior
8. “Z” Series features split crossbar along the inner radius
9. Very easy to fill - cables only have to be pushed in
10. 1- or 2-chamber system available



## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E200-05-100-0** | **E-Chain®** |
| 1 Set **2050-34PZB** | **Mounting Bracket** |

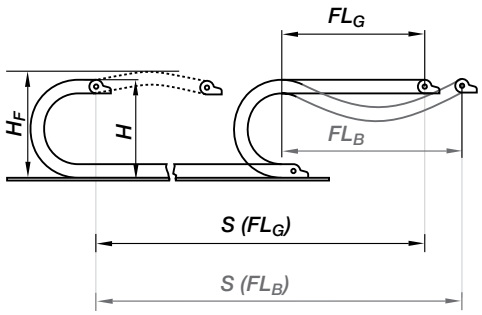
# E-Chain System® E-Z Chain Series E200/Z200 Installation Dimensions

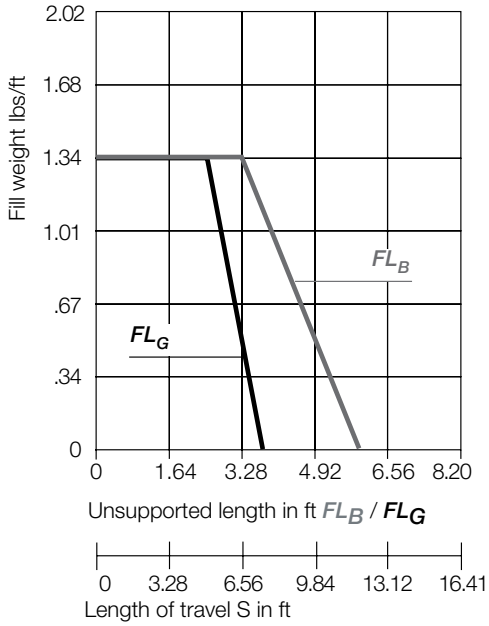


**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



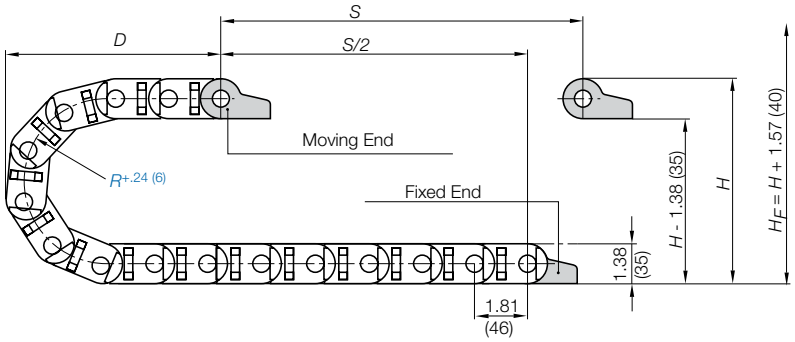




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: ***$H_F$ = H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.16 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|---|
| H +4 | 5.71 (145) | 7.28 (185) | 9.25 (235) | 13.19 (335) | 17.12 (435) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 9.33 (237) | 11.30 (287) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 22.24 (565) | 28.54 (725) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

## Technical Data

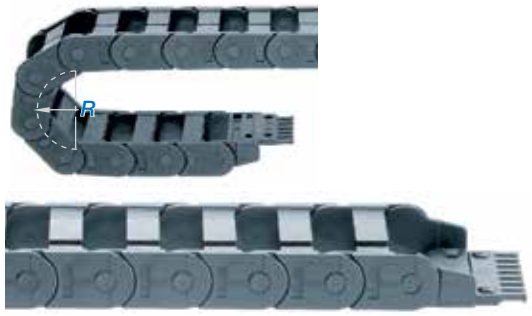
Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

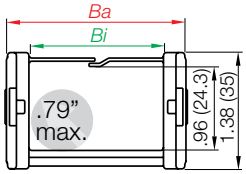
# E-Chain System® E-Z Chain
# Series E200/Z200

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

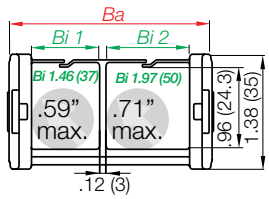
## Series E200
## Split crossbar along the outer radius



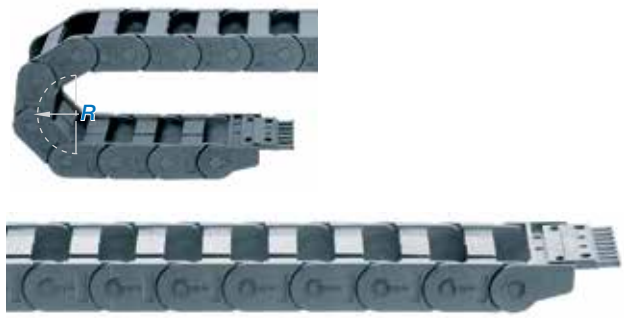

### Single Chamber System



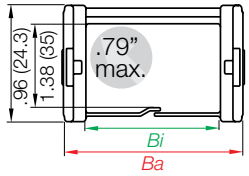

### 2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.



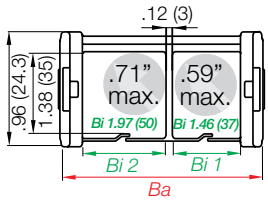

## Series Z200
## Split crossbar along the inner radius



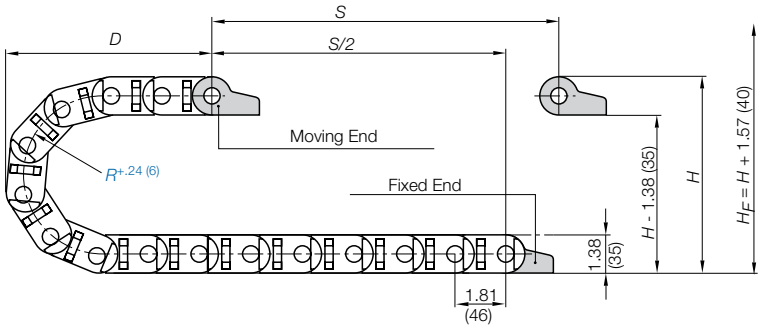

### Single Chamber System



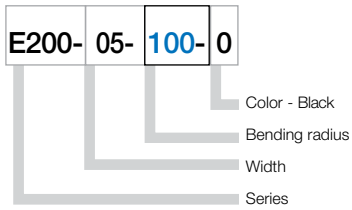

### 2 Chamber System
1 chamber from each width is shown
Actual carrier will have 2 chambers of the same size.




Supplement part number with required radius. Example: E200-05-100-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)




### Part Number Structure




### Part Number
### Single Chamber System

| Split Crossbar Outer radius | Split Crossbar Inner Radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| E200-05- | Z200-05- | -0 | 2.24 (57) | 2.93 (74.4) | ≈ 0.47 (0.70) |

### Part Number
### 2 Chamber System

| Split Crossbar Outer radius | Split Crossbar Inner Radius | | Bi 1 in. (mm) | Bi 2 in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| E200-2/35- | Z200-2/35- | -0 | 1.46 (37) | 1.46 (37) | 3.72 (94.4) | ≈ 0.53 (0.79) |
| E200-2/50- | Z200-2/50- | -0 | 1.97 (50) | 1.97 (50) | 4.74 (120.4) | ≈ 0.55 (0.82) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E200-05-100-0

| | 055 | 075 | 100 | 150 | 200 |
|---|---|---|---|---|---|
| R | 2.16 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) |
| H +4 | 5.71 (145) | 7.28 (185) | 9.25 (235) | 13.19 (335) | 17.12 (435) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 9.33 (237) | 11.30 (287) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 22.24 (565) | 28.54 (725) |

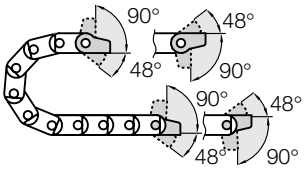
0=Standard color black. For other colors see Chapter 1

# E-Chain System® E-Z Chain
# Series E200/Z200
# Mounting Brackets

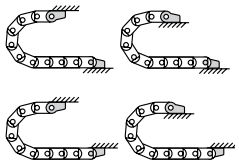
Standard

## Option 1: pivoting

Short and long travels
Space-restricted conditions
Corrosion resistant



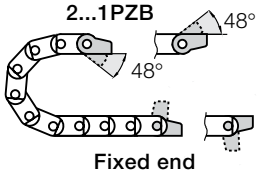

Fixed end
2...4PZB



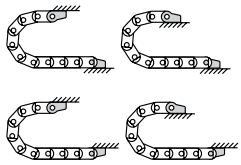
Possible installation configurations -

- Vertical hanging/standing travels
- High accelerations
- Corrosion resistant

Moving end
2...1PZB




Fixed end
2...2PZB



Possible installation configurations -

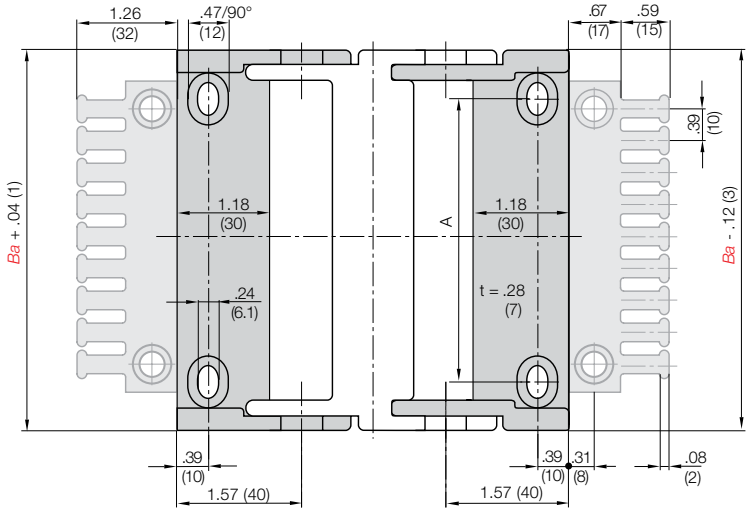
## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

### Part Number Structure

| 2050- | 34 | PZ | B | K1 |
|---|---|---|---|---|

- K1: Mounting brackets for selected chain type
- B: With 10 cable tiewraps
- PZ: With tiewrap plates
- Without tiewrap plates
- 34: Complete Set
  34 = Pivoting
  12 = Locking




**Full set, for both ends:**

2050- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

2050- 3 PZB Mounting bracket **with bore + tiewrap plate**

2050- 4 PZB Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Number of teeth |
|---|---|---|---|---|---|---|
| E200/Z200-05 | 2050- ☐ PZB | 2050- ☐ PZBK1 | 2050- ☐ PZ | 1.73 | (44) | 6 |
| E200/Z200-2/35 | 2070- ☐ PZB | 2070- ☐ PZBK1 | 2070- ☐ PZ | 2.52 | (64) | 8 |
| E200/Z200-2/50 | 2100- ☐ PZB | 2100- ☐ PZBK1 | 2100- ☐ PZ | 3.54 | (90) | 10 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2050- 34 PZB

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

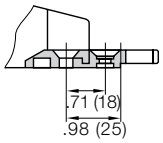
# E-Chain System® E-Z Chain
# Series E200/Z200
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

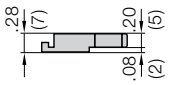
## Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

## Tiewrap Plates




Shown assembled

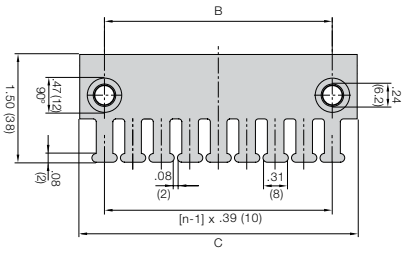



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |




**For more information please refer to strain relief section of Chapter 10**

## Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

## Cable tiewraps as individual parts

| Cable tiewraps 100 pieces/bag | Width x Length in. | (mm) | Maximum Ø in. | (mm) | Tensile Strength lbs | (N) |
|---|---|---|---|---|---|---|
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

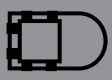
### Option 2:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| **2050-Z** | 6 | 2.44 | (62) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E-Z Chain
# Series E16/Z16

1.26 1.26

## Price Index

Series E16/Z16

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Features & Benefits

1. Cable-friendly interior
2. Limited torsion tolerance
3. Small pitch for low-noise and smooth operation
4. Very easy to fill - cables only have to be pushed in
5. Mounting bracket with integrated strain relief
6. Patented push button design holds the links together
7. “E” Series features split crossbar along the outer radius
8. “Z” Series features split crossbar along the inner radius

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 26/27/27i E2 Medium**
- If an E-Chain with a high locking crossbar is needed
  ➤ **Series 26/27/27i E2 Medium**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

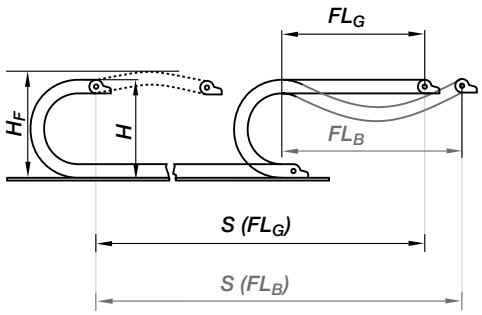
| | |
|---|---|
| 3.28 ft (1 m) **E16-3-060-0** | **E-Chain®** |
| 1 Set **117-3-12PZ** | **Mounting Bracket** |

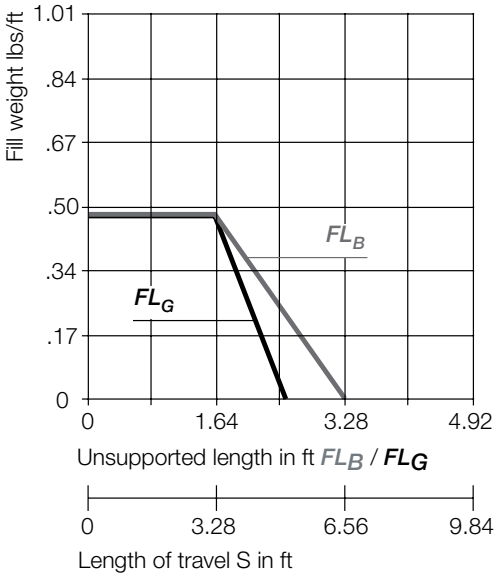
# E-Chain System® E-Z Chain Series E16/Z16 Installation Dimensions

**Short travel, unsupported length**

- ● $FL_B$ = unsupported with permitted sag
- ● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**



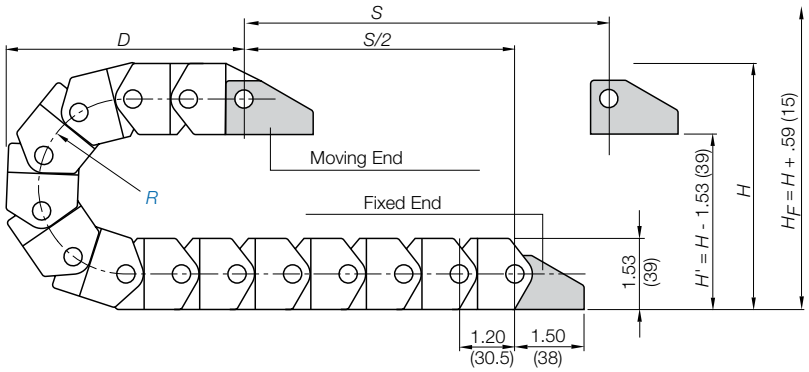




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .59$ **in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.57 (040)* | 2.36 (060) | 2.95 (075) | 3.94 (100) |
|---|---|---|---|---|
| H | 4.69 (119) | 6.26 (159) | 7.44 (189) | 9.41 (239) |
| D | 4.13 (105) | 4.92 (125) | 5.51 (140) | 6.50 (165) |
| K | 7.48 (190) | 9.84 (250) | 11.81 (300) | 14.96 (380) |

*This radius is only available for the E16-2, Z16-3, Z16-4 Series

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

## Technical Data

Details of material properties
**➤ Chapter 1**

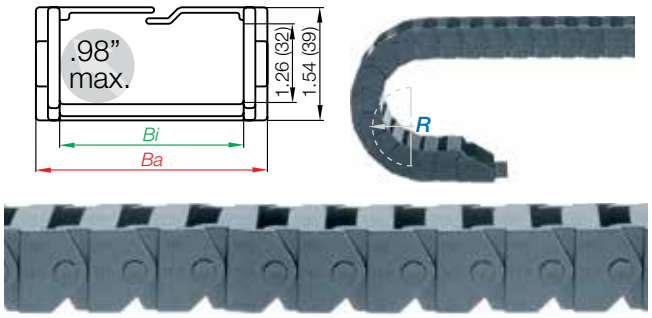
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E16/Z16

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

STANDARD

## Series E16 - Split crossbar along the outer radius

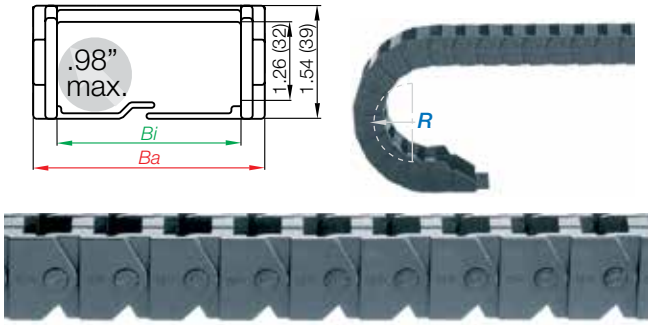



Part Number Structure

E16- | 3- | 060- | 0

- Color - Black
- Bending radius
- Width
- Series

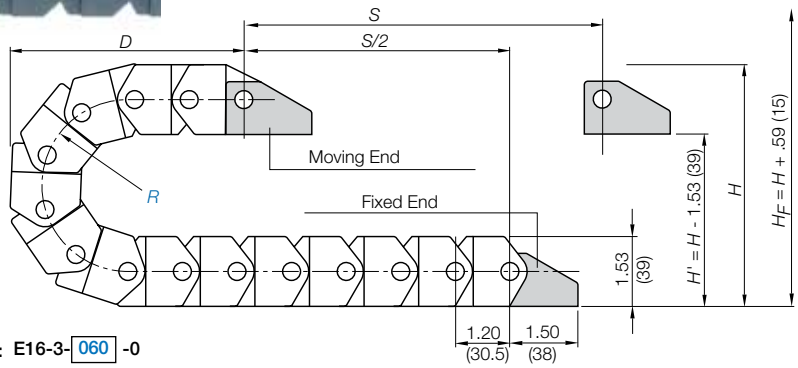
## Series Z16 - Split crossbar along the inner radius




Part Number Structure

Z16- | 3- | 060- | 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: E16-3-[060]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number Split Crossbar Outer radius | Part Number Split Crossbar Inner radius | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| E16-2- | Z16-2- | -0 | .91 (23) | 1.48 (37.5) | ≈ 0.34 (0.51) |
| E16-3- | Z16-3- | -0 | 1.42 (36) | 1.99 (50.5) | ≈ 0.38 (0.57) |
| E16-4- | Z16-4- | -0 | 1.89 (48) | 2.46 (62.5) | ≈ 0.42 (0.62) |
| E16-5- | Z16-5- | -0 | 2.48 (63) | 3.09 (78.5) | ≈ 0.50 (0.75) |
| E16-6- | Z16-6- | -0 | 3.15 (80) | 3.76 (95.5) | ≈ 0.56 (0.83) |
| E16-7- | Z16-7- | -0 | 3.94 (100) | 4.54 (115.3) | ≈ 0.61 (0.91) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E16-3-[060]-0

| | 040* | 060 | 075 | 100 |
|---|---|---|---|---|
| R | 1.57 (040) | 2.36 (060) | 2.95 (075) | 3.94 (100) |
| H | 4.69 (119) | 6.26 (159) | 7.44 (189) | 9.41 (239) |
| D | 4.13 (105) | 4.92 (125) | 5.51 (140) | 6.50 (165) |
| K | 7.48 (190) | 9.84 (250) | 11.81 (300) | 14.96 (380) |

0=Standard color black. For other colors see Chapter 1

*This radius is only available for the E16-2, Z16-3, Z16-4 Series

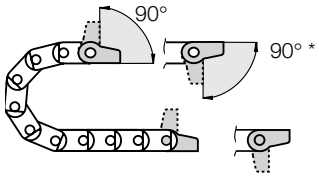
# E-Chain System® E-Z Chain
# Series E16/Z16
# Mounting Brackets

**Standard**

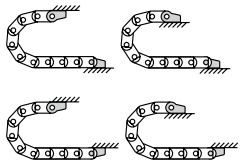
## Option 1: pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

**Moving end**
**117...1P(Z)**



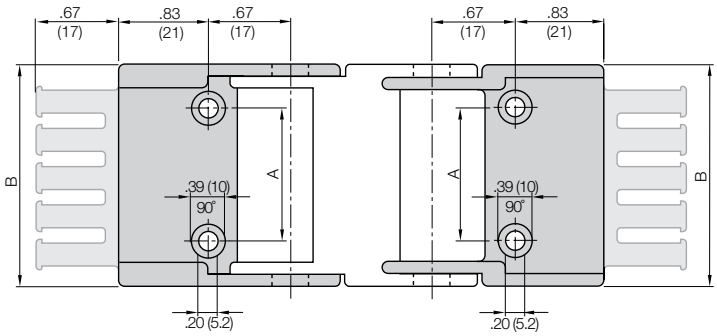

**Fixed end**
**117...2P(Z)**



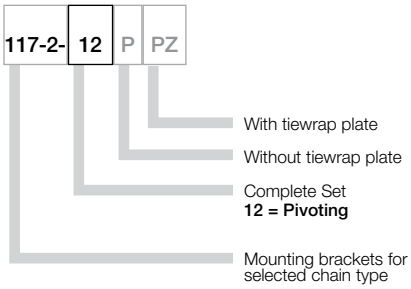
Possible installation configurations -

## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.




**Part Number Structure**




**Full set, for both ends:**

117-2-12-PZ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

117-2-1-PZ Mounting bracket **with bore + tiewrap plate**

117-2-2-PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Number of Teeth | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|---|---|
| E16/Z16-2 | **117-2-12PZ** | **117-2-12P** | 3 | .47 | (12) | 1.40 | (35.5) |
| E16/Z16-3 | **117-3-12PZ** | **117-3-12P** | 4 | .98 | (25) | 1.91 | (48.5) |
| E16/Z16-4 | **117-4-12PZ** | **117-4-12P** | 5 | 1.46 | (37) | 2.38 | (60.5) |
| E16/Z16-5 | **117-5-12PZ** | **117-5-12P** | 6 | 1.89 | (48) | 2.99 | (76.0) |
| E16/Z16-6 | **117-6-12PZ** | **117-6-12P** | 8 | 2.56 | (65) | 3.66 | (93.0) |
| E16/Z16-7 | **117-7-12PZ** | **117-7-12P** | 10 | 3.35 | (85) | 4.45 | (113.0) |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request

**Quickfix -** mounting bracket with dowel, upon request

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E26/Z26

1.44 1.44

## Price Index

Series E26/Z26

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Features & Benefits

1. Integrated strain relief option
2. Very easy to fill - cables only have to be pushed in
3. Cable-friendly interior
4. Limited torsion tolerance
5. Large pins for long service life
6. "E" Series features split crossbar along the outer radius
7. Dirt-repellent exterior
8. Patented push button design holds the links together
9. "Z" Series features split crossbar along the inner radius
10. 1-, 2- or 3-chamber system available

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 32.8 ft (10 m) |
| Vertical, standing ≤ 4.92 ft (1.5 m) |
| Side-mounted, unsupp. ≤ 1.64 ft (0.5 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If a long unsupported length is required
  ➤ **Series 26/27/27i E2 Medium**
- If an E-Chain with a high locking crossbar is needed
  ➤ **Series 26/27/27i E2 Medium**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

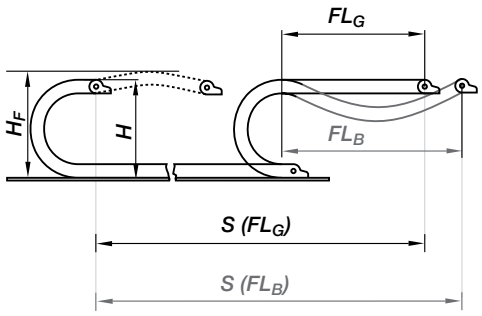
| | |
|---|---|
| 3.28 ft (1 m) **E26-07-150-0** | **E-Chain®** |
| 1 Set **2607-34PZB** | **Mounting Bracket** |

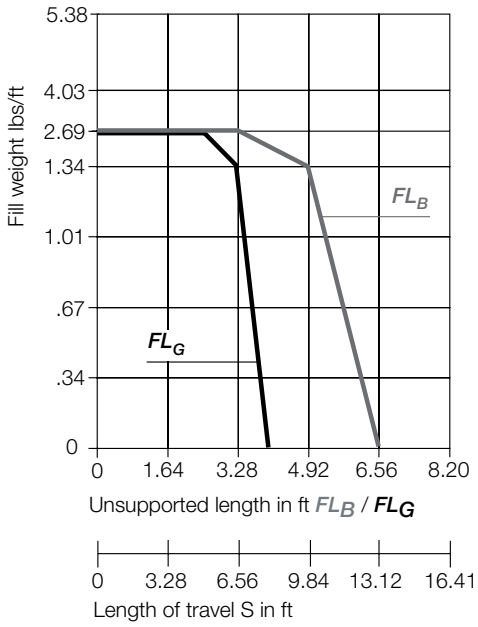
# E-Chain System® E-Z Chain Series E26/Z26 Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



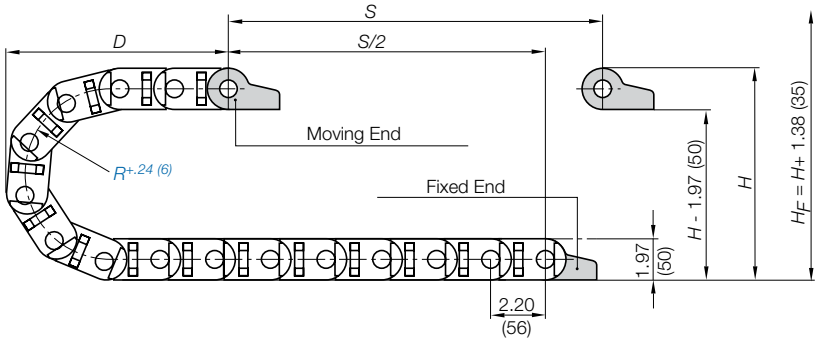




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.38$ in. (35 mm) (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H +5 | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.90 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E26/Z26

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

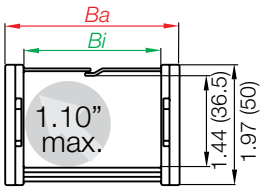
## Series E26
## Split crossbar along the outer radius

**Part Number Structure**

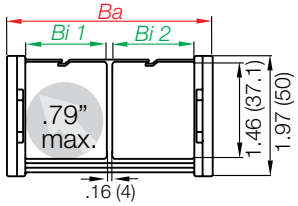
| E26- | 07- | 150- | 0 |
|---|---|---|---|

- 150 – Bending radius
- 07 – Width
- E26 – Series
- 0 – Color - Black

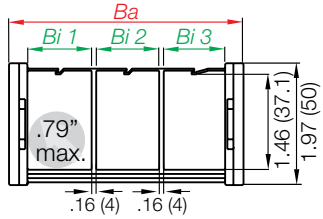
**1 Chamber System**



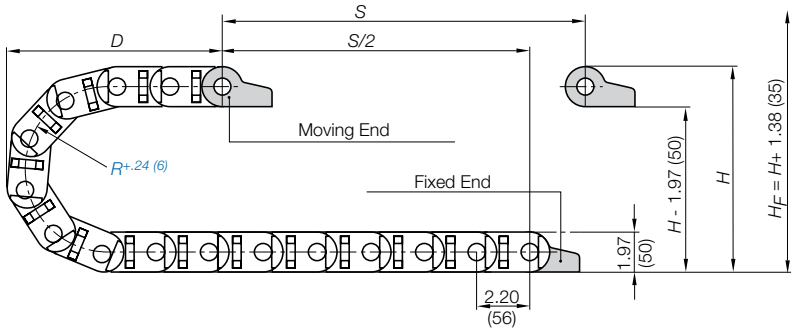

**2 Chamber System**




**3 Chamber System**




Supplement part number with required radius. Example: E26-07-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)



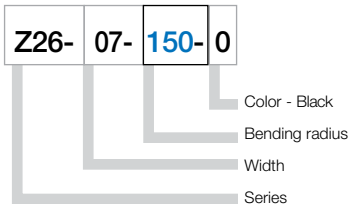

| Part Number 1 Chamber System | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E26-07-☐-0 | 2.95 (75) | 3.62 (92) | ≈ 0.65 (0.96) |
| **Part Number 2 Chamber System** | | | |
| E26-2/45-☐-0 | 1.89/1.89 (48/48) | 4.61 (117) | ≈ 0.77 (1.14) |
| **Part Number 3 Chamber System** | | | |
| E26-3/45-☐-0 | 1.85/1.89/1.85 (47/48/47) | 6.57 (167) | ≈ 0.87 (1.30) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E26-07-100-0

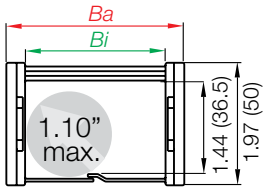
| | 063 | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H +5 | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

## Series Z26
## Split crossbar along the inner radius

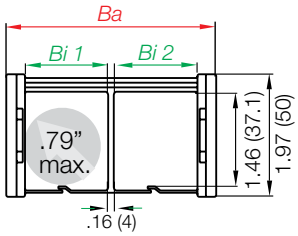
**Part Number Structure**



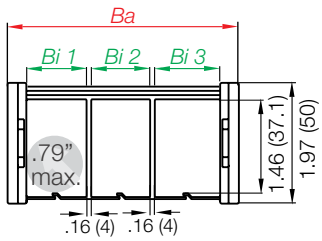

### 1 Chamber System



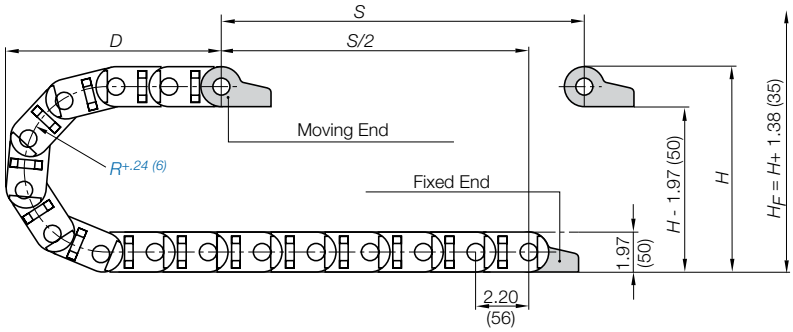

### 2 Chamber System




### 3 Chamber System




**Supplement part number with required radius. Example: Z26-07-150-0**
**Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)**




| Part Number<br>1 Chamber System | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) |
|---|---|---|---|
| Z26-07-☐-0 | 2.95 (75) | 3.62 (92) | ≈ 0.65 (0.96) |
| **Part Number<br>2 Chamber System** | | | |
| Z26-2/45-☐-0 | 1.89/1.89 (48/48) | 4.61 (117) | ≈ 0.77 (1.14) |
| **Part Number<br>3 Chamber System** | | | |
| Z26-3/45-☐-0 | 1.85/1.89/1.85 (47/48/47) | 6.57 (167) | ≈ 0.87 (1.30) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: Z26-07-100-0

| | 063 | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H +5 | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E26/Z26
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

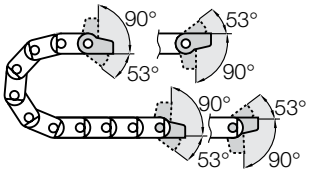


Standard

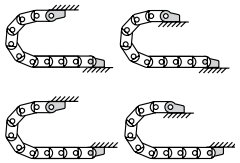
## Option 1: pivoting

- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant

**Moving end**
**26...3PZB**




**Fixed end**
**26...4PZB**

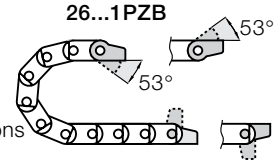


Possible installation configurations -

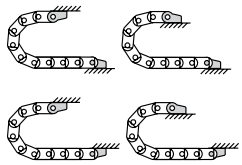
## Option 2: locking

- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant

**Moving end**
**26...1PZB**




**Fixed end**
**26...2PZB**



Possible installation configurations -

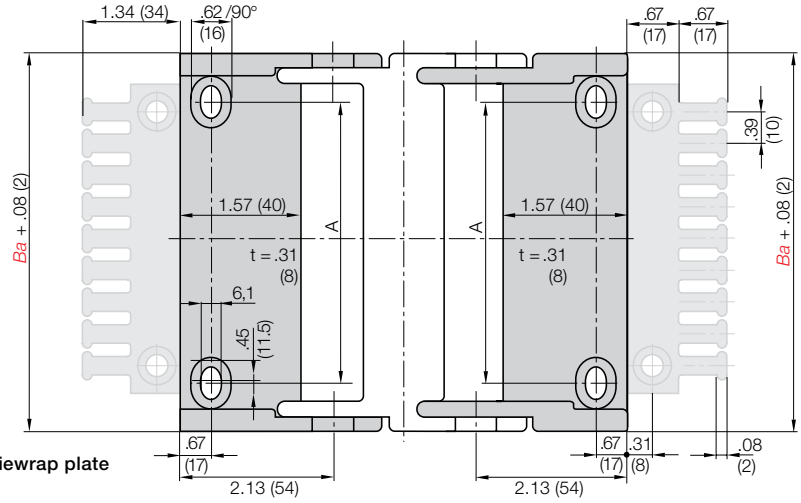
## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

**Part Number Structure**

| 2607- | 34 | PZB | K1 |
|---|---|---|---|

- K1: With 10 cable tiewraps
- PZB: With tiewrap plates
- 34: Complete Set **34 = Pivoting** **12 = Locking**
- 2607-: Mounting brackets for selected chain type




**Full set, for both ends:**
2607- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
2607- 3 PZB Mounting bracket **with bore + tiewrap plate**
2607- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series E26/Z26:**
**2607-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series E26/Z26:**
**2607-34PZBK1**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series E26/Z26:**
**2607-34PZ**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| E26/Z26-07 | 2607- ☐ PZB | 2607- ☐ PZBK1 | 2607- ☐ PZ | 2.17 | (55) | 7 |
| E26/Z26-2/45 | 2610- ☐ PZB | 2610- ☐ PZBK1 | 2610- ☐ PZ | 3.15 | (80) | 10 |
| E26/Z26-3/45 | 2615- ☐ PZB | 2615- ☐ PZBK1 | 2615- ☐ PZ | 5.12 | (130) | 15 |

34 or 12

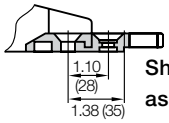
For pivoting brackets choose 34
For locking brackets choose 12
Example: 2607- 34 PZB

# E-Chain System® E-Z Chain
# Series E26/Z26
# Strain Relief

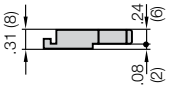
## Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

## Tiewrap Plates




Shown assembled

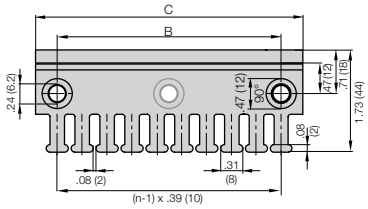



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E300/Z300

1.91 1.91

## Price Index

Series E300/Z300

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 2
(at v = 3.28 ft/s) upon request

Flammability Class
VDE 0304 IIC UL94 V2

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Just push the cables into the E-Chain using your thumb

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 32.8 ft (10 m) |
| Vertical, standing ≤ 4.92 ft (1.5 m) |
| Side-mounted, unsupp. ≤ 1.64 ft (0.5 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If filling is required without opening and closing
- If price is an issue
- If quiet operation is required

- If high loads and long unsupported lengths are present
  ➤ **Series 340/350 E2 Medium**

## Features & Benefits

1. Limited torsion tolerance
2. Cable-friendly interior
3. Large pins for long service life
4. Very easy to fill - cables only have to be pushed in
5. Dirt-repellent exterior
6. "E" Series features split crossbar along the outer radius
7. Integrated strain relief option
8. Patented push button design holds the links together
9. "Z" Series features split crossbar along the inner radius
10. Interior separation possible
11. 1-, 2- or 3-chamber system available

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

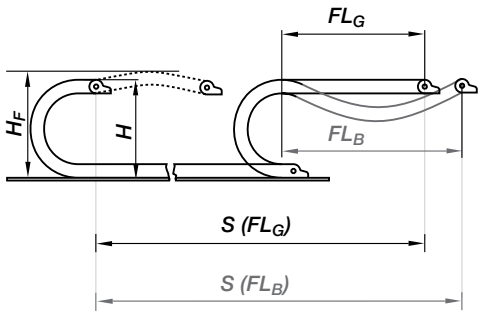
| | |
|---|---|
| 3.28 ft (1 m) **E300-075-100-0** | **E-Chain®** |
| 1 Set **3075-34PZB** | **Mounting Bracket** |

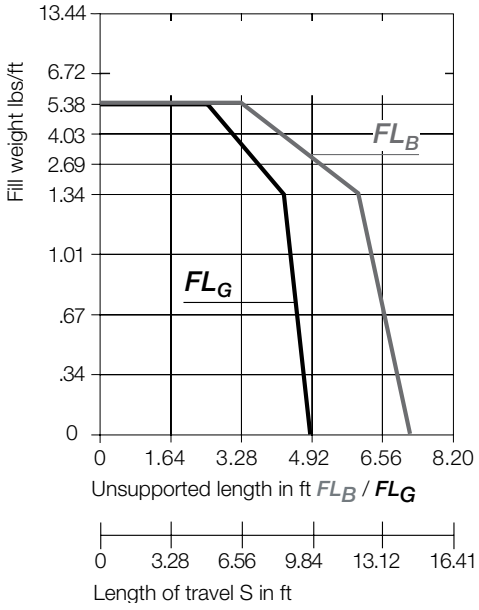
# E-Chain System® E-Z Chain Series E300/Z300 Installation Dimensions

**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



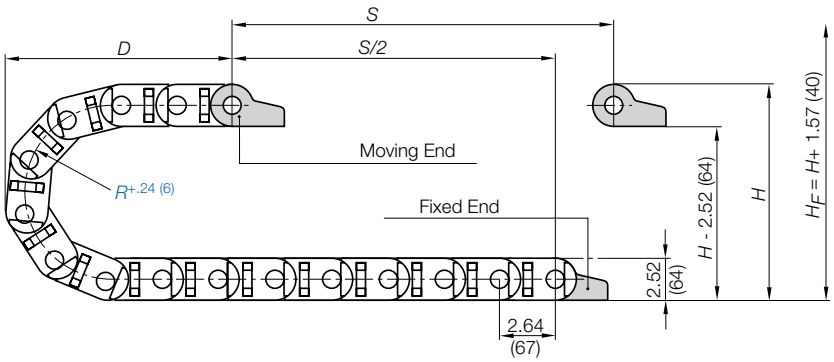




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| H +4 | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.12 (765) | 36.22 (920) | 42.52 (1080) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material (E-Chain®) - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Material (mounting brackets)* - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |
| Flammability Class (mounting brackets), igumid G* | VDE 0304 IIC UL94 HB |

*Available in igumid NB upon request, please consult igus® for delivery time

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E300/Z300

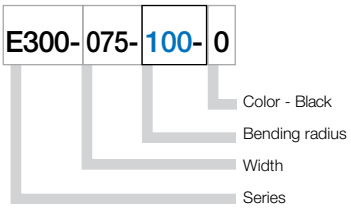


Telephone 1-800-521-2747
Fax 1-401-438-7270

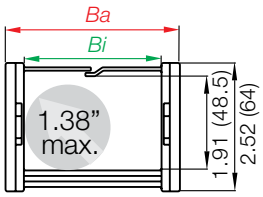
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E300
## Split crossbar along the outer radius

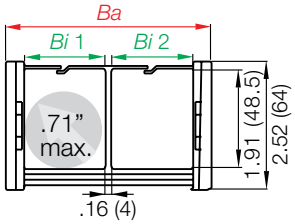
**Part Number Structure**



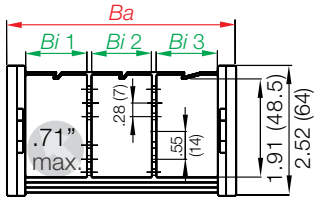

**Single Chamber System**



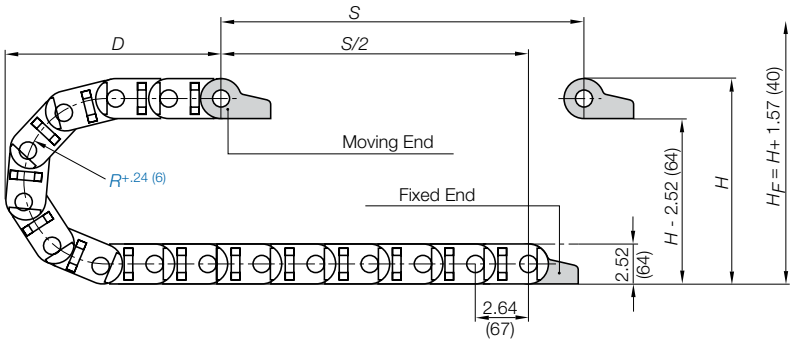

**2 Chamber System**




**3 Chamber System with optional shelving**

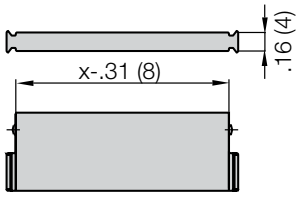



Supplement part number with required radius. Example: E300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)




**Shelving**

| | |
|---|---|
| Unassembled | |
| **Part number** | **386-54** |
| Assembled | |
| **Part number** | **387-54** |




| Part Number 1 Chamber System | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E300-075-☐-0 | 2.95 (75) | 3.74 (95) | ≈ 1.08 (1.60) |
| **Part Number 2 Chamber System** | | | |
| E300-2/45-☐-0 | 1.89/1.89 (48/48) | 4.72 (120) | ≈ 1.20 (1.78) |
| **Part Number 3 Chamber System** | | | |
| E300-3/45-☐-0 | 1.85/1.81/1.85 (47/46/47) | 6.69 (170) | ≈ 1.29 (1.92) |

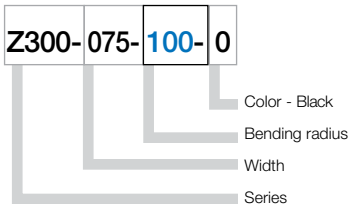
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: E300-075-100-0

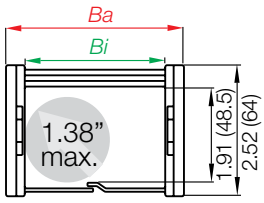
| | 075 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| H +5 | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.12 (765) | 36.22 (920) | 42.52 (1080) |

## Series Z300
## Split crossbar along the inner radius

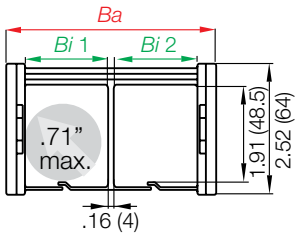
**Part Number Structure**



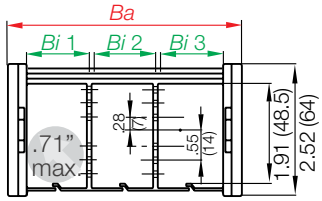

### Single Chamber System



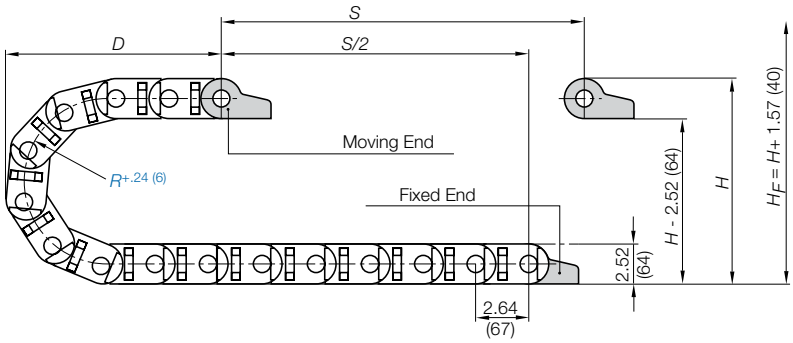

### 2 Chamber System




### 3 Chamber System



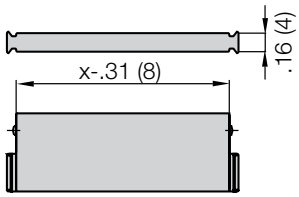

Supplement part number with required radius. Example: Z300-075-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)




**Shelving**

Unassembled
**Part number 386-54**

Assembled
**Part number 387-54**




| Part Number 1 Chamber System | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| Z300-075-[ ]-0 | 2.95 (75) | 3.74 (95) | ≈ 1.08 (1.60) |
| **Part Number 2 Chamber System** | | | |
| Z300-2/45-[ ]-0 | 1.89/1.89 (48/48) | 4.72 (120) | ≈ 1.20 (1.78) |
| **Part Number 3 Chamber System** | | | |
| Z300-3/45-[ ]-0 | 1.85/1.81/1.85 (47/46/47) | 6.69 (170) | ≈ 1.29 (1.92) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: Z300-075-100-0

| | 075 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| H +5 | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.12 (765) | 36.22 (920) | 42.52 (1080) |

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E-Z Chain
# Series E300/Z300
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

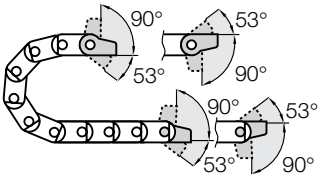


Standard

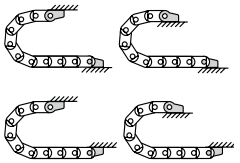
## Option 1: pivoting

- Recommended for unsupported and gliding applications
- Space-restricted conditions
- Available with or without strain relief tiewrap plates
- Corrosion resistant

Moving end
3...3PZB




Fixed end
3...4PZB

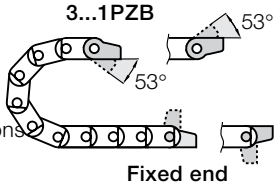


Possible installation configurations -

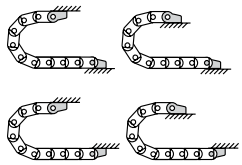
## Option 2: locking

- Recommended for unsupported and gliding applications
- For high speed and/or accelerations
- Corrosion resistant

Moving end
3...1PZB




Fixed end
3...2PZB



Possible installation configurations -

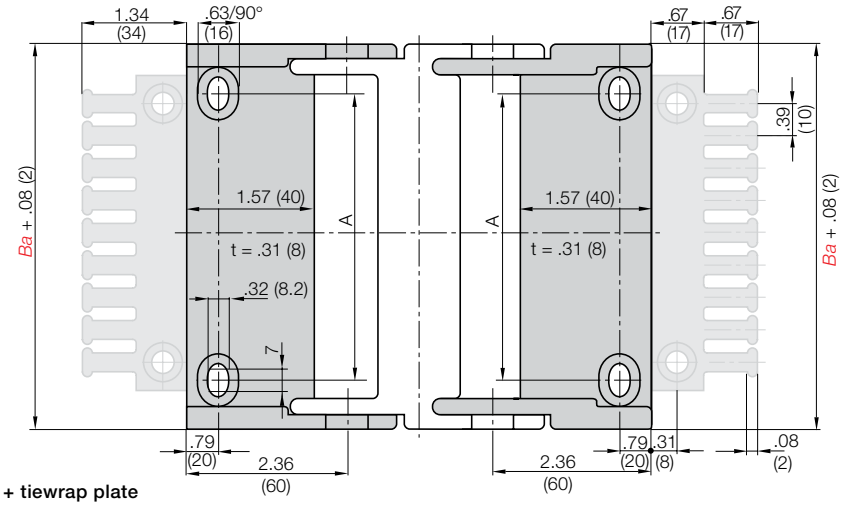
## Dimensions and order configurations

Strain relief is possible on the moving end and/or the fixed end.

Part Number Structure

3075- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  **34 = Pivoting**
  **12 = Locking**
- Mounting brackets for selected chain type




**Full set, for both ends:**
3075- | 34 | PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
3075- | 3 | PZB Mounting bracket **with bore + tiewrap plate**
3075- | 4 | PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series E300, Z300:**
**3075-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series E300, Z300:**
**3075-34PZBK1**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series E300, Z300:**
**3075-34PZ**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| E300/Z300-075 | 3075- [ ] PZB | 3075- [ ] PZBK1 | 3075- [ ] PZ | 2.09 | (53) | 7 |
| E300/Z300-2/45 | 3100- [ ] PZB | 3100- [ ] PZBK1 | 3100- [ ] PZ | 3.07 | (78) | 10 |
| E300/Z300-3/45 | 3150- [ ] PZB | 3150- [ ] PZBK1 | 3150- [ ] PZ | 5.04 | (128) | 15 |

[34] or [12]

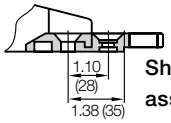
For pivoting brackets choose [34]
For locking brackets choose [12]
Example: 3075- [34] PZB

# E-Chain System® E-Z Chain
# Series E300/Z300
# Strain Relief

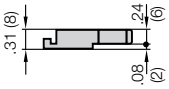
## Strain relief for polymer mounting brackets (pivoting or locking)

The strain relief tiewrap plates can be snapped directly onto the mounting bracket. After bolting the mounting brackets to the machine, the strain relief tiewrap plates are firmly connected to the base. There is no need to bolt them on separately. Cable tiewraps secured to the cable and the tiewrap plate (teeth) provide proper strain relief and save time.

## Tiewrap Plates




Shown assembled

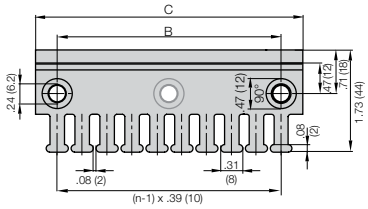



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |

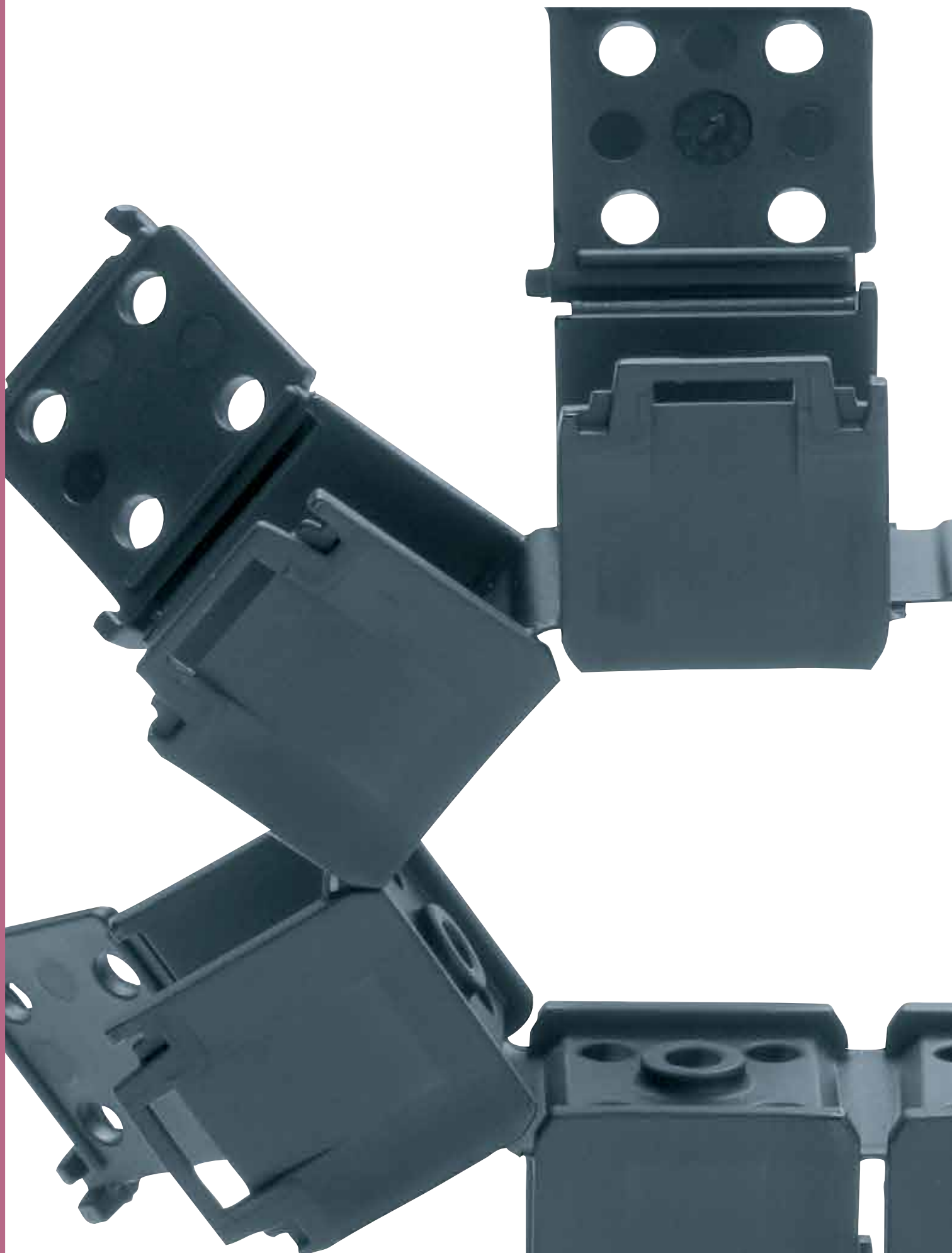



**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS



igus®

# System E-1

## E-Chain® Band, Modular

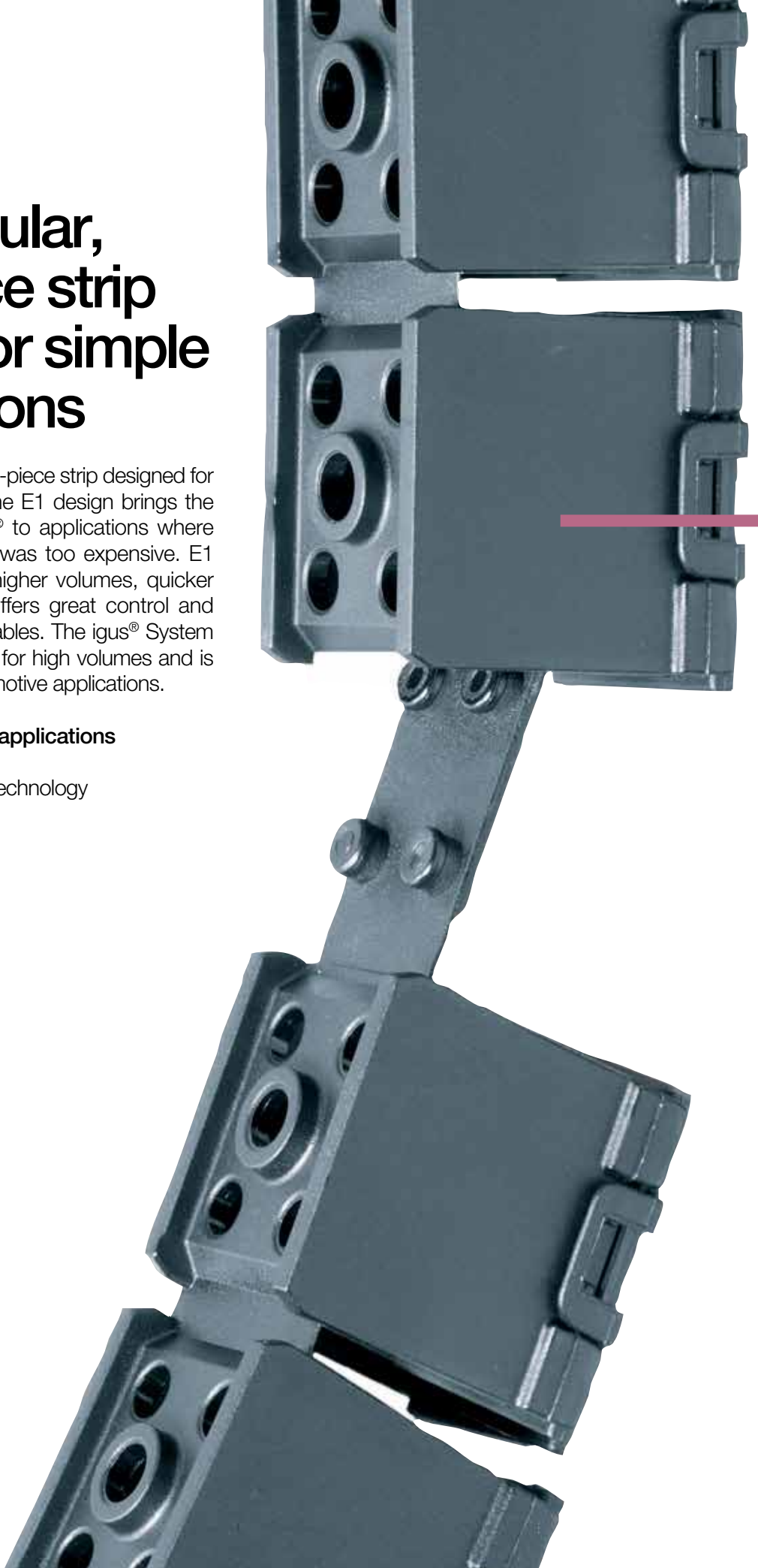
# E1- Modular, one-piece strip design for simple applications

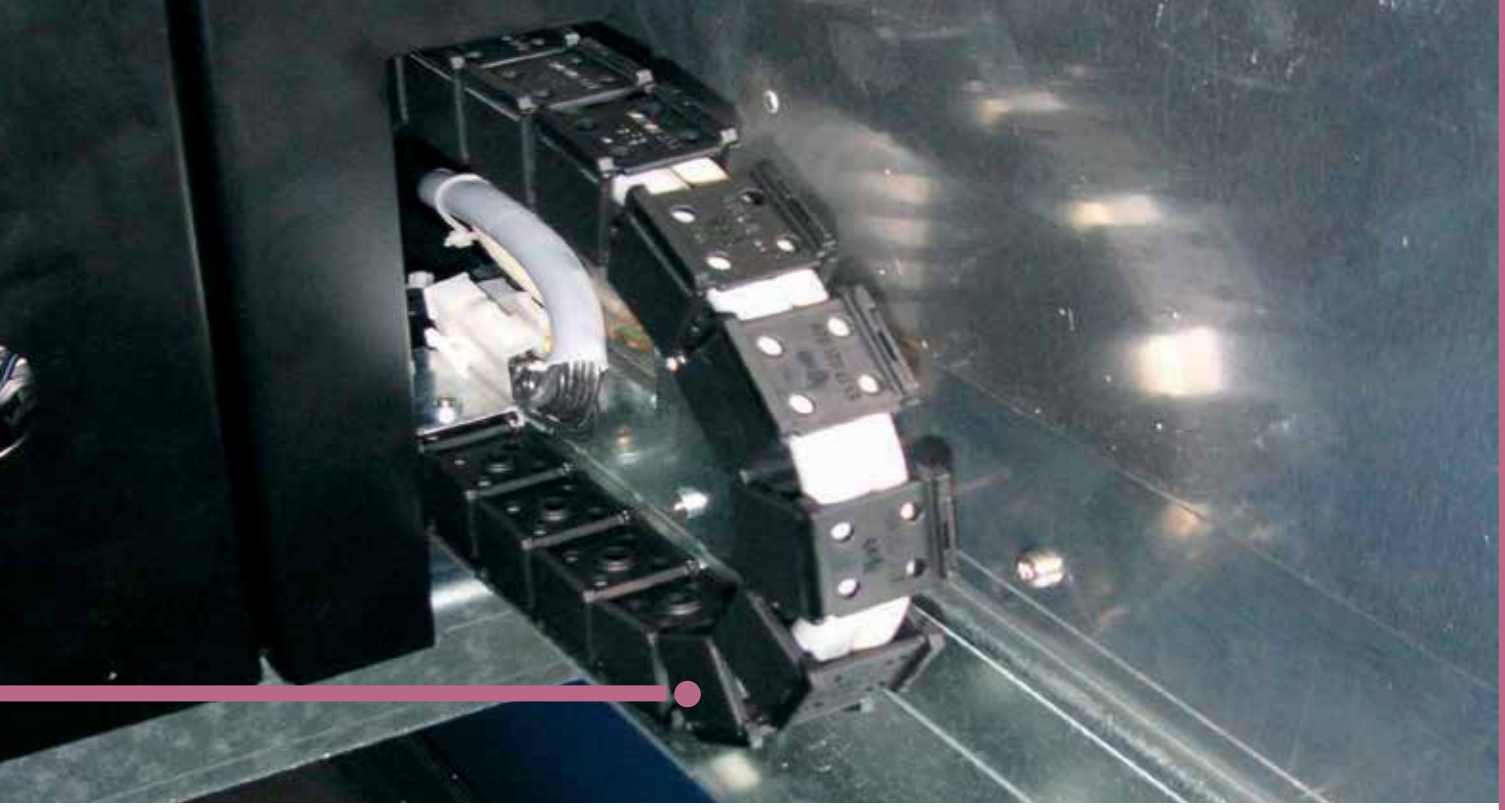
E1: E-Chain® modular, 1-piece strip designed for simple applications - The E1 design brings the benefits of an E-Chain® to applications where this solution previously was too expensive. E1 is more economic for higher volumes, quicker to assemble and still offers great control and protection for moving cables. The igus® System E1 is very cost effective for high volumes and is especially ideal for automotive applications.

**Typical industries and applications**

- Automotive
- Office Solutions and technology
- Automation
- Electric equipment
- Machine-building

UL94-V2 classifications

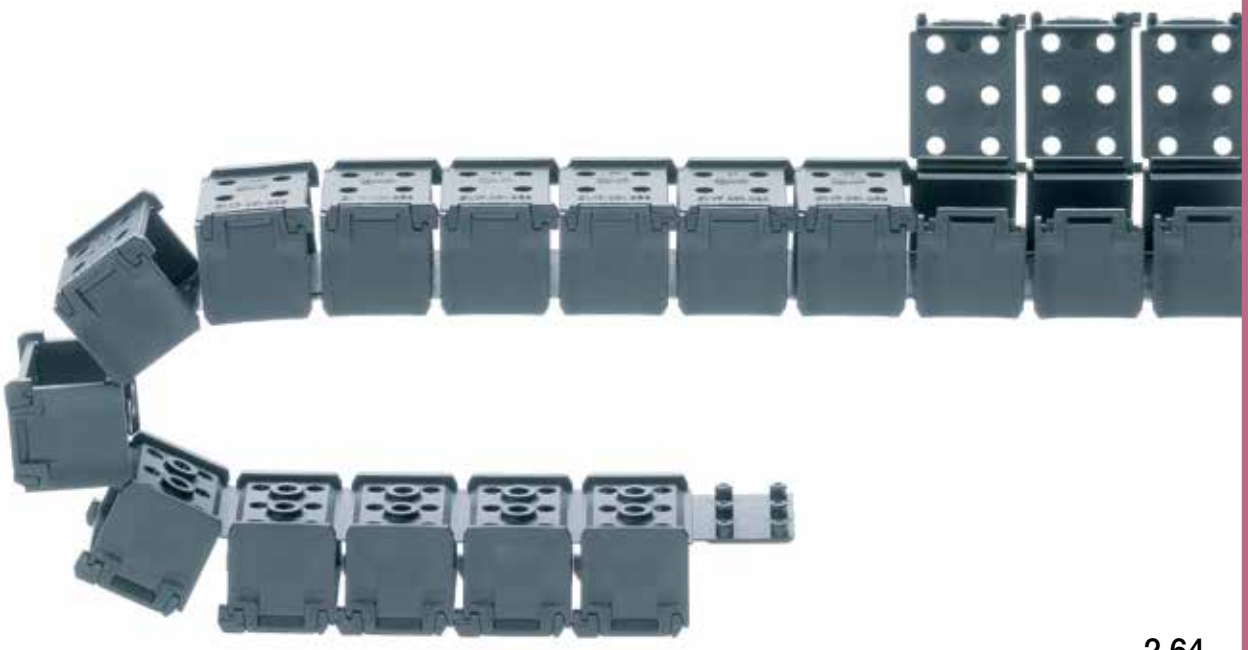




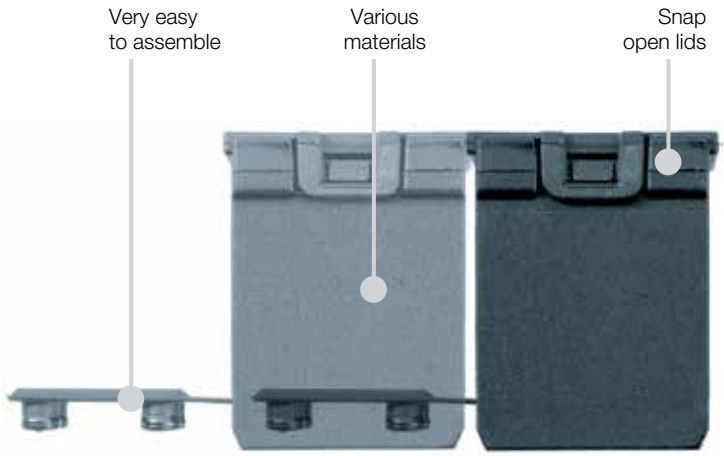
Harnessed igus® System E1 in a bottle deposit machine

Series E1-17-021-028 in an electric wheelchair - cable supply on the scissor lifting system

The igus®-System E1 is very cost-effective at high quantities and ideal for automotive applications



# E-Chain System®
# System E1




**Modular, 1-piece strip**
**design for simple applications**

- Economic solution for high volumes
- A universal and easily adaptable E-Chain® concept
- E1: E-Chain® on one strip
- Easy shortening/lengthening through modular strip design
- Easy to snap open
- Strip connectors
- Easy attachment at each end
- Various materials available
- You can find more technical data about the material, chemical resistance, temperatures

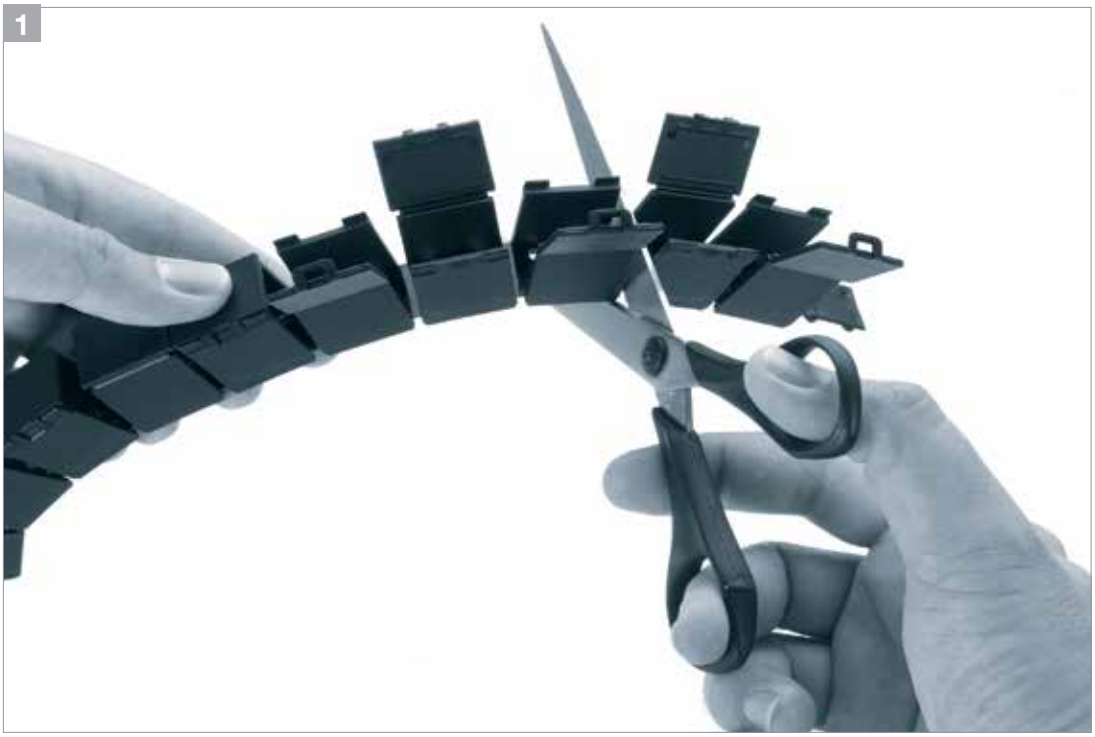
➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | | Segment length |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) | mm |
| **E1-10-013-** | .39 | 10 | .51 | 13 | .65 | 16.5 | .61 | 15.5 | .71 | 18 | 200 |
| **E1-17-021-** | .67 | 17 | .83 | 21 | 1.02 | 26 | .98 | 25 | 1.10 | 28 | 255 |
| **E1-17-031-** | .67 | 17 | 1.22 | 31 | 1.42 | 36 | .98 | 25 | 1.10 | 28 | 204 |
| **E1-17-044-** | .67 | 17 | 1.73 | 44 | 1.93 | 49 | .98 | 25 | 1.10 | 28 | 255 |
| **E1-18-015-** | .71 | 18 | .59 | 15 | .79 | 20 | 1.02 | 26 | 1.10 | 28 | 127.5 |
| **E1-20-015-** | .79 | 20 | .59 | 15 | .87 | 22 | 1.06 | 27 | 1.10 | 28 | 250 |

System E1 - E-Chain® - snap-open along outer radius

## Shortening

1



Push and click...

## Lengthening

2

Press in cable

# E-Chain System® E1
# Series E1-10, E1-17, E1-18, E1-20

.39 .67 .71 .79

## Price Index

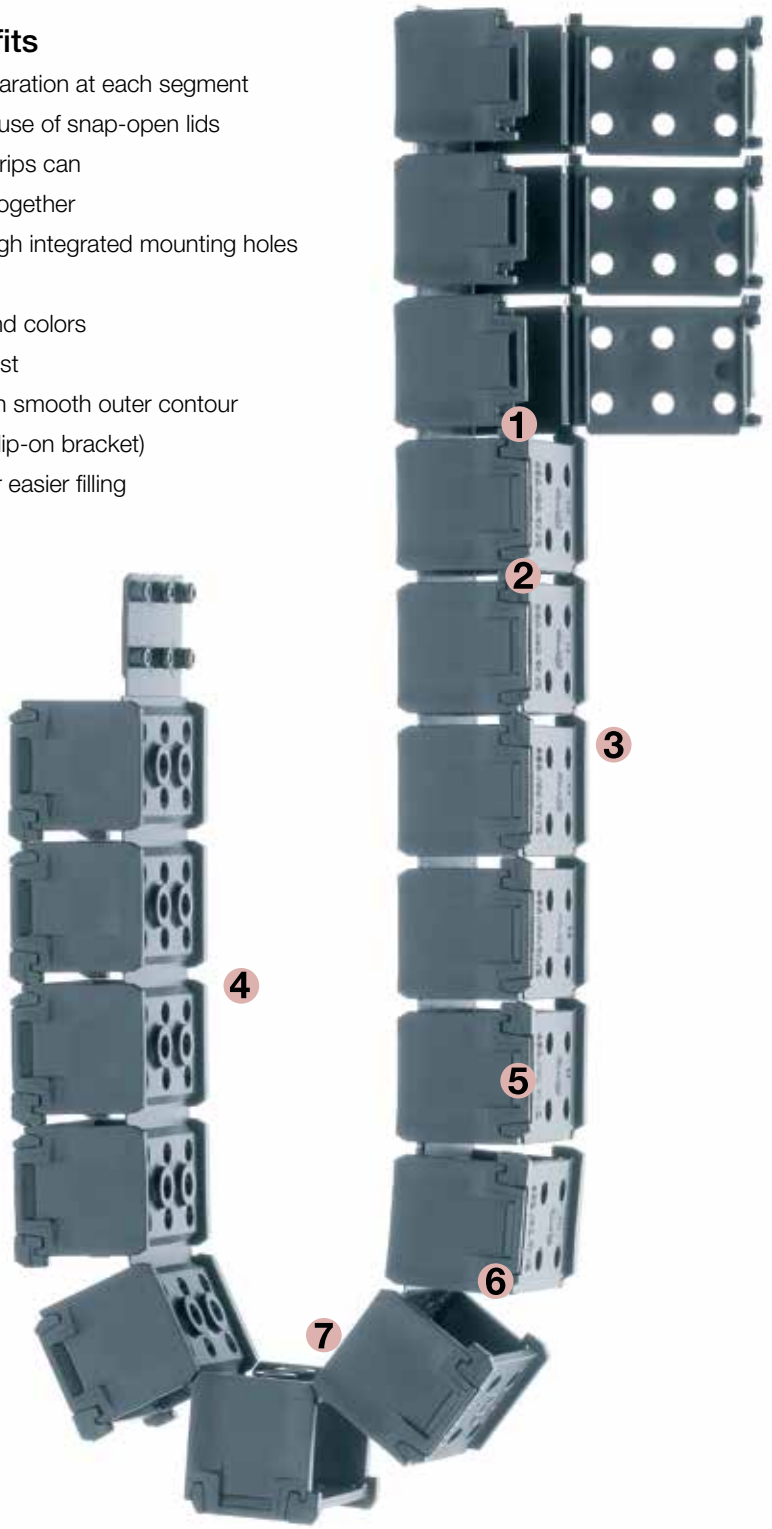
Series E1

## Special Features / Options

Flammability Class
VDE 0304 IIC UL94 V2

## Features & Benefits

1. Easy to shorten - separation at each segment
2. Very easy to fill because of snap-open lids
3. Easy to lengthen - strips can simply be snapped together
4. Easy fastening through integrated mounting holes
5. Low-price E-Chain®
6. Different materials and colors available upon request
7. Compact design with smooth outer contour
8. Strain relief option (clip-on bracket)
9. All lids snap open for easier filling




## Usage Guidelines

- If simple filling is required
- If an economical E-Chain® is required
- If low assembly cost is required
- For lower duty or cycle life

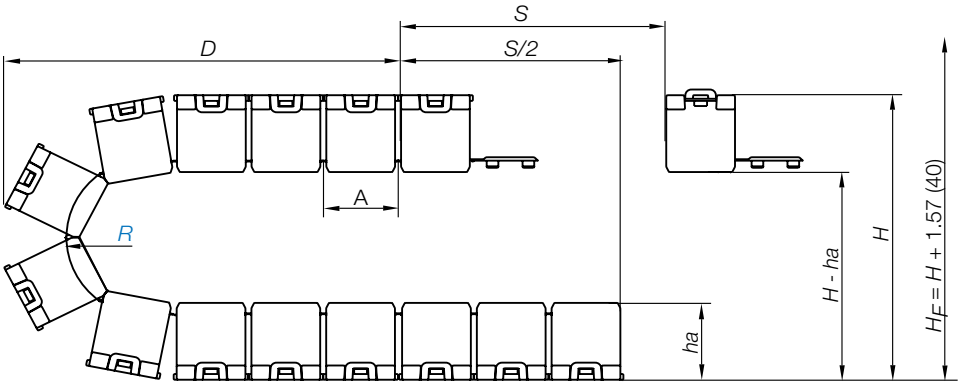
- High load or high cycle applications
  - ➤ **Series E-Z Chain**
  - ➤ **Series Zipper**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

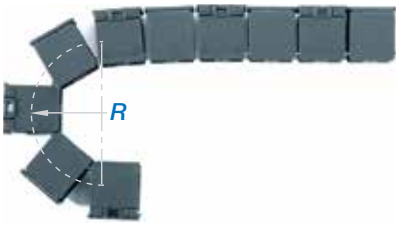
3.28 ft (1 m) **E1-17-021-028-0** = 4 x 10.04” (255 mm) band **E-Chain®**

# E-Chain System® E1
# Series E1-10, E1-17, E1-18, E1-20
# Installation Dimensions




The required clearance height: $H_F = H + 1.57$ in. (40 mm)

| Bending Radius for Series | E1-10 | E1-17 | E1-18 | E1-20 |
|---|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.10 (028) | 1.10 (028) |
| H | 2.44 (62) | 3.62 (92) | 3.62 (92) | 3.62 (92) |
| D | 2.60 (66) | 2.99 (76) | 2.99 (76) | 2.99 (76) |
| K | 3.94 (100) | 4.72 (120) | 4.72 (120) | 4.72 (120) |




## Part No. structure

E1-17- 021- 028- 0

- Color black
- Bending radius
- Width
- *hi*
- Series

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Material (E-Chain®) - permitted temperature °F | application oriented, upon request |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |

## Technical Data

Details of material properties
➤ **Chapter 1**

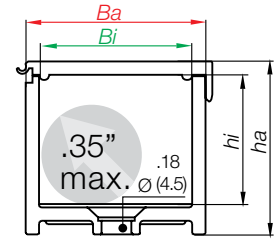


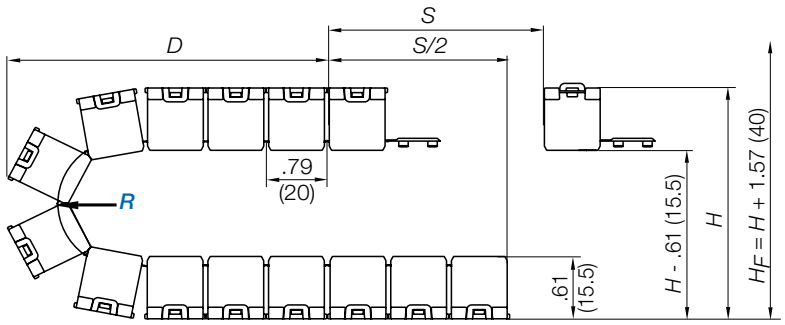
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E1
# Series E1-10
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E1-10 - Snap-open along the outer radius






**Pitch per link: =** .79" (20 mm)
**Chain length =** $_{S}/_{2}$ + K

Supplement part number with required radius. Example: E1-10-013-018-0
Pitch: .79 in. (20 mm) per link)

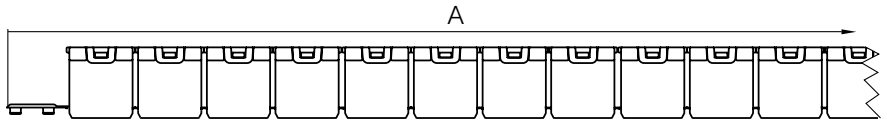
| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/segment (kg/segment) |
|---|---|---|---|
| E1-10-013-[ ]-0 | .20 (13) | .34 (16.5) | ≈ 0.0362 (0.0164) |
| | Choose from the radii below for the above size | | |
| | *Radius* (mm) Example: E1-10-013-018-0 | | |

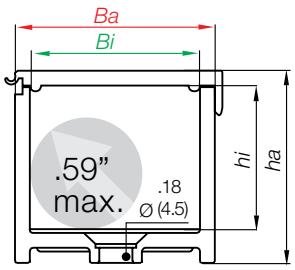
018

| | |
|---|---|
| *R* | .71 (018) |
| H | 2.44 (62) |
| D | 2.60 (66) |
| K | 3.94 (100) |

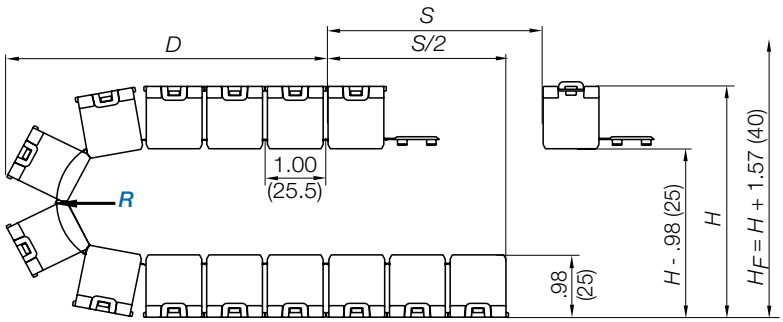
0=Standard color black. For other colors see Chapter 1

| Part Number | Segment Length Dimension A mm | No. of links/segment | No. of segments/m |
|---|---|---|---|
| E1-10-013-018-0 | 200 | 10 | 5 (1000 mm) |






## Series E1-17 - Snap-open along the outer radius




**Pitch per link: =** 1.00" (25.5 mm)
**Chain length =** $^{s}/_{2}$ + K

**Supplement part number with required radius. Example: E1-17-021-028-0**
**Pitch: 1.00 in. (25.5 mm) per link**

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/segment (kg/segment) |
|---|---|---|---|
| E1-17-021-☐-0 | .83 (21) | 1.02 (26) | ≈ 0.1054 (0.0478) |
| E1-17-031-☐-0 | 1.22 (31) | 1.42 (36) | ≈ 0.1014 (0.0460) |
| E1-17-044-☐-0 | 1.73 (44) | 1.93 (49) | ≈ 0.1532 (0.0695) |

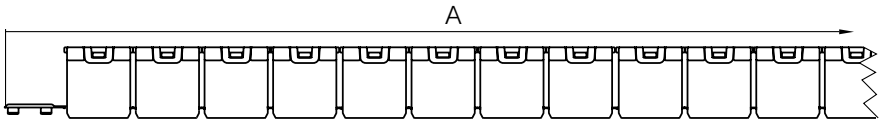
Choose from the radii below for the above size
*Radius* (mm) Example: E1-17-021-028-0

028

| | |
|---|---|
| *R* | 1.10 (028) |
| H | 3.62 (92) |
| D | 2.99 (76) |
| K | 4.72 (120) |

0=Standard color black. For other colors see Chapter 1

| Part Number | Segment Length Dimension A mm | No. of links/segment | No. of segments/m |
|---|---|---|---|
| E1-10-021-028-0 | 255 | 10 | 4 (1020 mm) |
| E1-17-031-028-0 | 204 | 8 | 5 (1020 mm) |
| E1-17-044-028-0 | 255 | 10 | 4 (1020 mm) |




## Mounting brackets for the Series E1-17-021

Compact, universal mounting bracket for E1-17-021: **Part No. E1-170-021-TS** - easy attachment

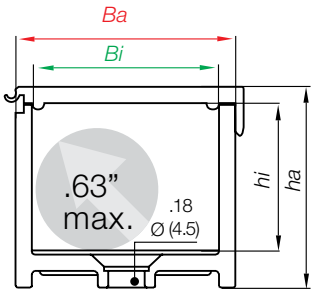
PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

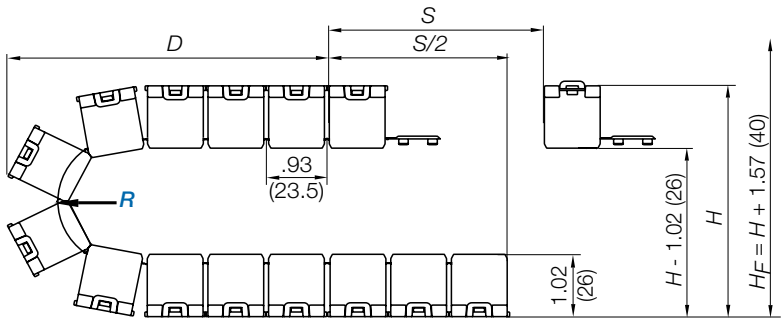
# E-Chain System® E1
# Series E1-18
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



## Series E1-10 - Snap-open along the outer radius






Pitch per link: = .93" (23.5 mm)
Chain length = $_{S}/_{2}$ + K

Supplement part number with required radius. Example: E1-18-015-028-0
Pitch: .93 in. (23.5 mm) per link)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/segment (kg/segment) |
|---|---|---|---|
| E1-18-015-[ ]-0 | .59 (15) | .79 (20) | ≈ 0.0373 (0.0169) |

Choose from the radii below for the above size

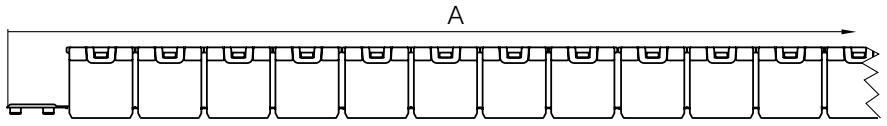
*Radius* (mm) Example: E1-18-015-028-0

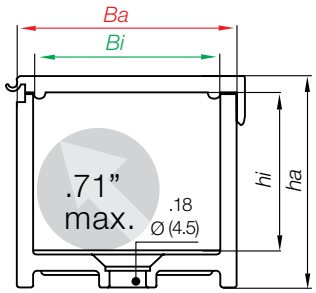
028

| | |
|---|---|
| *R* | 1.10 (028) |
| H | 3.62 (92) |
| D | 2.99 (76) |
| K | 4.72 (120) |

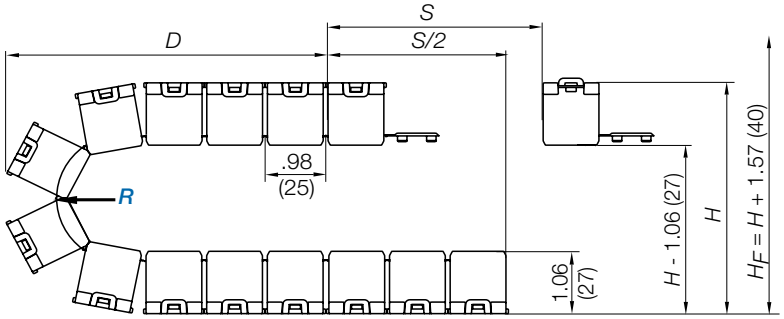
0=Standard color black. For other colors see Chapter 1

| Part Number | Segment Length Dimension A mm | No. of links/segment | No. of segments/m |
|---|---|---|---|
| E1-18-015-028-0 | 101 | 4 | 10 (1010 mm) |






## Series E1-20 - Snap-open along the outer radius
## Lids open in alternate directions




Pitch per link: = .98" (25 mm)
Chain length = $_{-}^{s}/_{2} + K$

Supplement part number with required radius. Example: E1-20-015-028-0
Pitch: .98 in. (25 mm) per link

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/segment (kg/segment) |
|---|---|---|---|
| E1-20-015-[ ]-0 | .59 (15) | .87 (22) | ≈ 0.0977 (0.0443) |

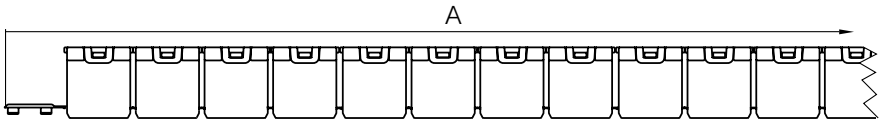
Choose from the radii below for the above size
Radius (mm) Example: E1-20-015-028-0

028

| | |
|---|---|
| R | 1.10 (028) |
| H | 3.62 (92) |
| D | 2.99 (76) |
| K | 4.72 (120) |

0=Standard color black. For other colors see Chapter 1

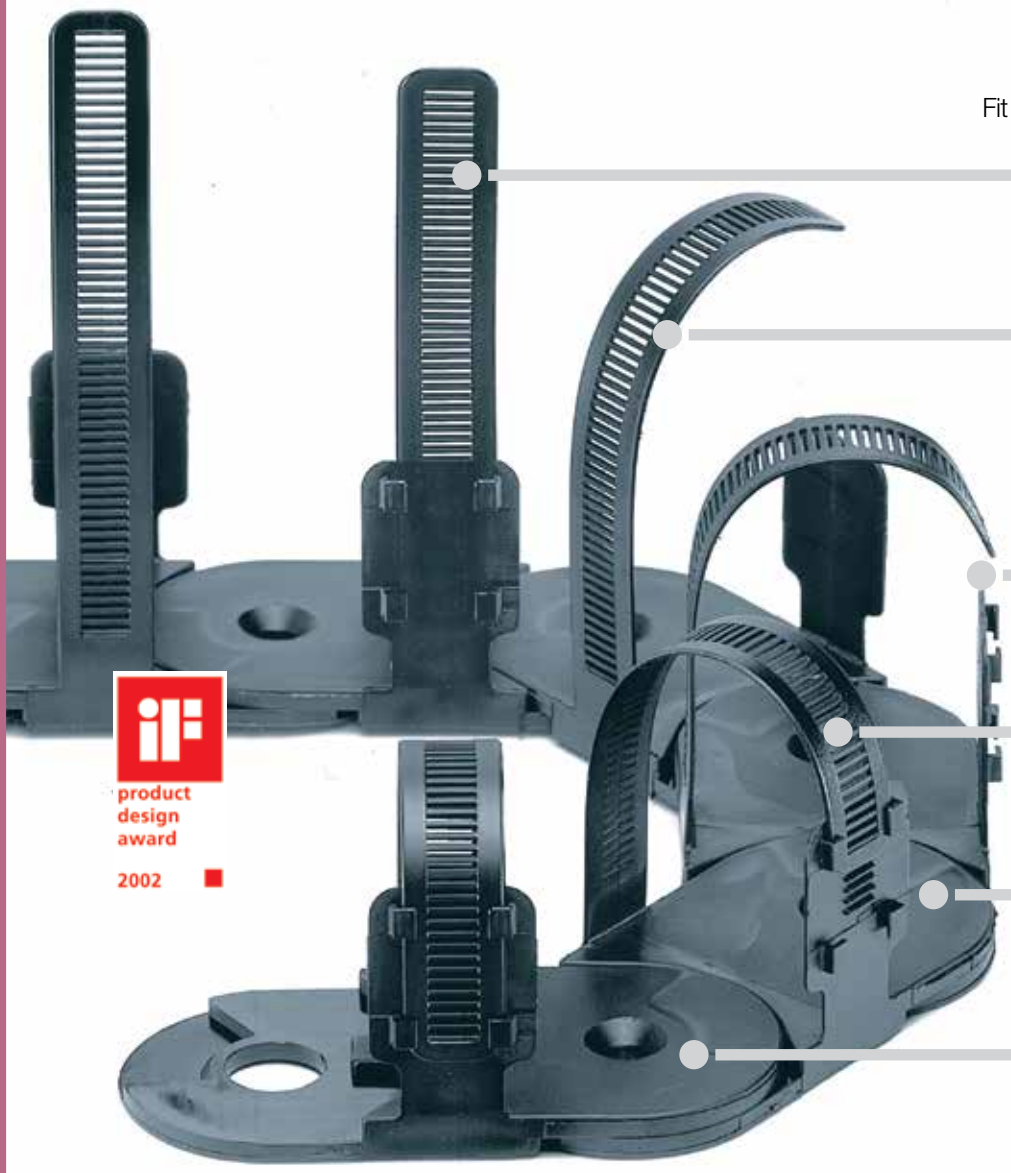
| Part Number | Segment Length Dimension A mm | No. of links/segment | No. of segments/m |
|---|---|---|---|
| E1-20-015-028-0 | 250 | 10 | 4 (1000 mm) |




PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

igus®

# SnapChain




Save time:
Fit cable assemblies quickly in bunches, available in 2 sizes

Flexible:
Adjust and change cables at any time

Opening principle:
Version TE14/TE26 can be opened along the outer and TZ14/TZ26 can be opened along the inner radius

Simple:
Favorable alternative to complex hinged cable trays

Short lengths:
Well-suited to short lengths, ideally 5 - 10 links

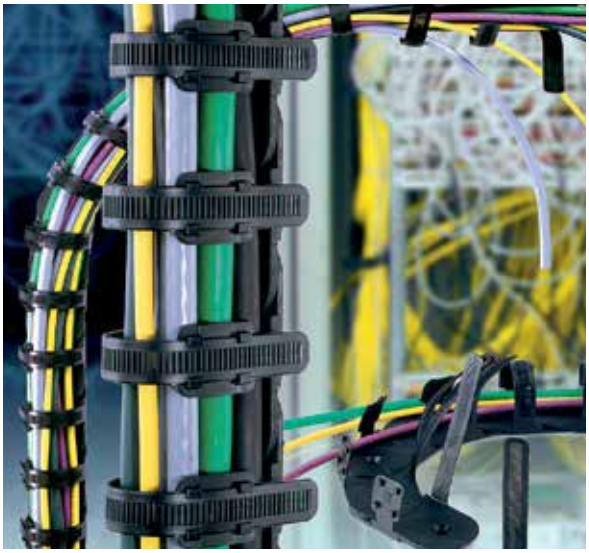
Flexible:
Can be bent in 1 or 2 directions

# Fit cable assemblies quickly in bunches - SnapChain

igus® SnapChain is an economical E-Chain® for low-duty applications. SnapChains are easy to assemble and cost-effective. An ideal solution for less demanding applications.

**Typical industries and applications**

- Control cabinets
- Electrical equipment
- Computer cubicles
- Office furniture
- Wherever cables are moved infrequently



# E-Chain System® - SnapChain
# Series TE-14/TZ-14, TE-26/TZ-26
# Product Range

## Version TE -
Loops to be opened along the outer radius

## Version TZ -
Loops to be opened along the inner radius

| Series | Loop length | | Pitch | | Bending radius *R* | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **TE14-50** | 1.97 | (50) | 1.20 | (30.5) | 1.10 - 4.92 | (028-125) |
| **TE26-120** | 4.72 | (120) | 2.20 | (56) | 2.48 - 7.87 | (063-200) |
| **TZ14-50** | 1.97 | (50) | 1.20 | (30.5) | 1.10 - 4.92 | (028-125) |
| **TZ26-120** | 4.72 | (120) | 2.20 | (56) | 2.48 - 7.87 | (063-200) |

| | |
|---|---|
| Material (E-Chain®) - permitted temperature °F | -40°F up to +176°F (-40°C up to +80°C) |
| Flammability Class (E-Chain®), igumid NB | VDE 0304 IIC UL94 V2 |

**Technical Data**

Details of material properties
➤ **Chapter 1**

## Order example | Order key and color options based on Series TE26.

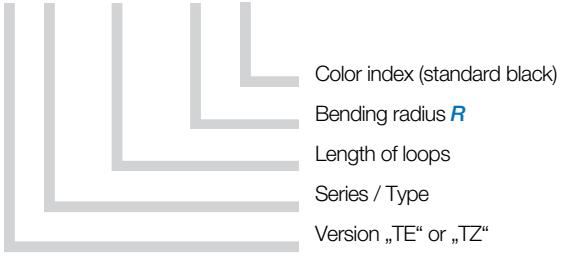
**Order example for complete E-Chain® 3.28 ft. (1.0 m), color black:**

**E-Chain®** 3.28 ft. (1.0 m) Please indicate chain-lengths or number of links

**Order text: 1.0 m TE26-120-100-0**

### Part No. Structure

**TE26-120-100-0** Version TE to be opened along the outer radius
**TZ26-120-100-0** Version TZ to be opened along the inner radius



Color index (standard black)
Bending radius *R*
Length of loops
Series / Type
Version „TE“ or „TZ“

# E-Chain System® - SnapChain
# Series TE-14, TZ-14
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Opens along the outer radius

| Part Number | Weight lbs/ft (kg/m) |
|---|---|
| TE14-50-□-0 | ≈ 0.1008 (0.15) |

Choose from the radii below for the above size

*Radius* (mm) Example: TE14-50-028-0

| | 028 | 038 | 048 | 075 | 100 | 125 |
|---|---|---|---|---|---|---|
| *R* | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |

0 = Standard color black.
For other colors see Chapter 1

## Opens along the inner radius

| Part Number | Weight lbs/ft (kg/m) |
|---|---|
| TZ14-50-□-0 | ≈ 0.1008 (0.15) |

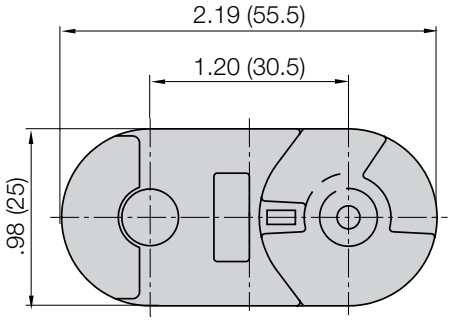
Choose from the radii below for the above size

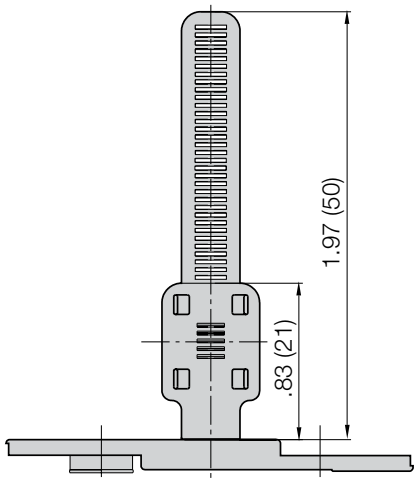
*Radius* (mm) Example: TE14-50-028-0

| | 075 | 100 | 125 | 150 | 200 | 250 |
|---|---|---|---|---|---|---|
| *R* | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |

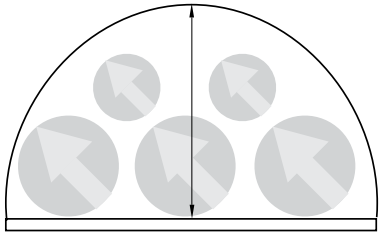
0 = Standard color black.
For other colors see Chapter 1

## Dimensions




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10 (33)
**Chain length =** $^{s}/_{2}$ + K



Cable package max.: 18 mm

# E-Chain System® - SnapChain
# Series TE-26, TZ-26
# Product Range

## Opens along the outer radius

| Part Number | Weight lbs/ft (kg/m) |
|---|---|
| TE26-120-[ ]-0 | ≈ 0.2889 (0.43) |

Choose from the radii below for the above size

*Radius* (mm) Example: TE14-50-[028]-0

| 063 | 075 | 100 | 125 | 150 | 200 |
|---|---|---|---|---|---|
| 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |

0 = Standard color black.
For other colors see Chapter 1

## Opens along the inner radius

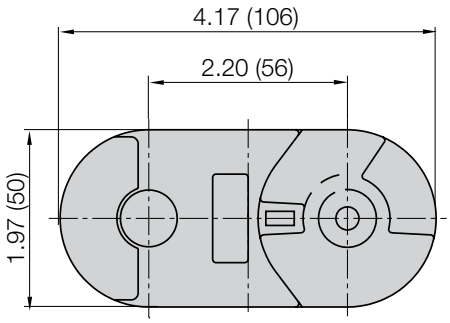
| Part Number | Weight lbs/ft (kg/m) |
|---|---|
| TZ26-120-[ ]-0 | ≈ 0.2889 (0.15) |

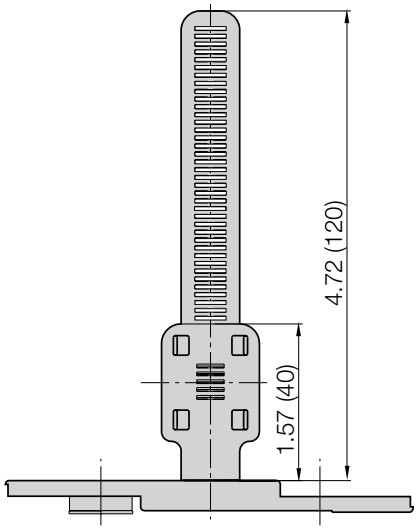
Choose from the radii below for the above size

*Radius* (mm) Example: TE14-50-[028]-0

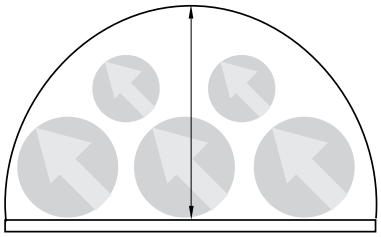
| 063 | 075 | 100 | 125 | 150 | 200 |
|---|---|---|---|---|---|
| 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |

0 = Standard color black.
For other colors see Chapter 1




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.45 (18)
**Chain length =** $_{S}/_{2}$ + K



Cable package max.: 47 mm

PDF: www.igus.com/E-Chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

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igus

igus®

# Zipper Chain

# Zipper - Fast and easy access to cables and hoses

# iF-Design Award

Zipper E-Chains® enable lightning-fast opening and closing of lids. Different from the typical E-Chain® design, which features side links and crossbars, Zipper chains are built with interconnected lids. These lids pull back like a zipper, removing the top section of the E-Chain® in one uniform piece at any point along the length of the carrier. Cable installation and removal—especially for cables equipped with preassembled connectors—is both fast and simple because the unique design eliminates the need to snake cables through the carrier.

**Typical industries and applications**

- Pick & place robots
- Semi-conductor machines
- Linear motors, actuators
- Measuring equipment
- Machine tools (Zipper E-Tube)

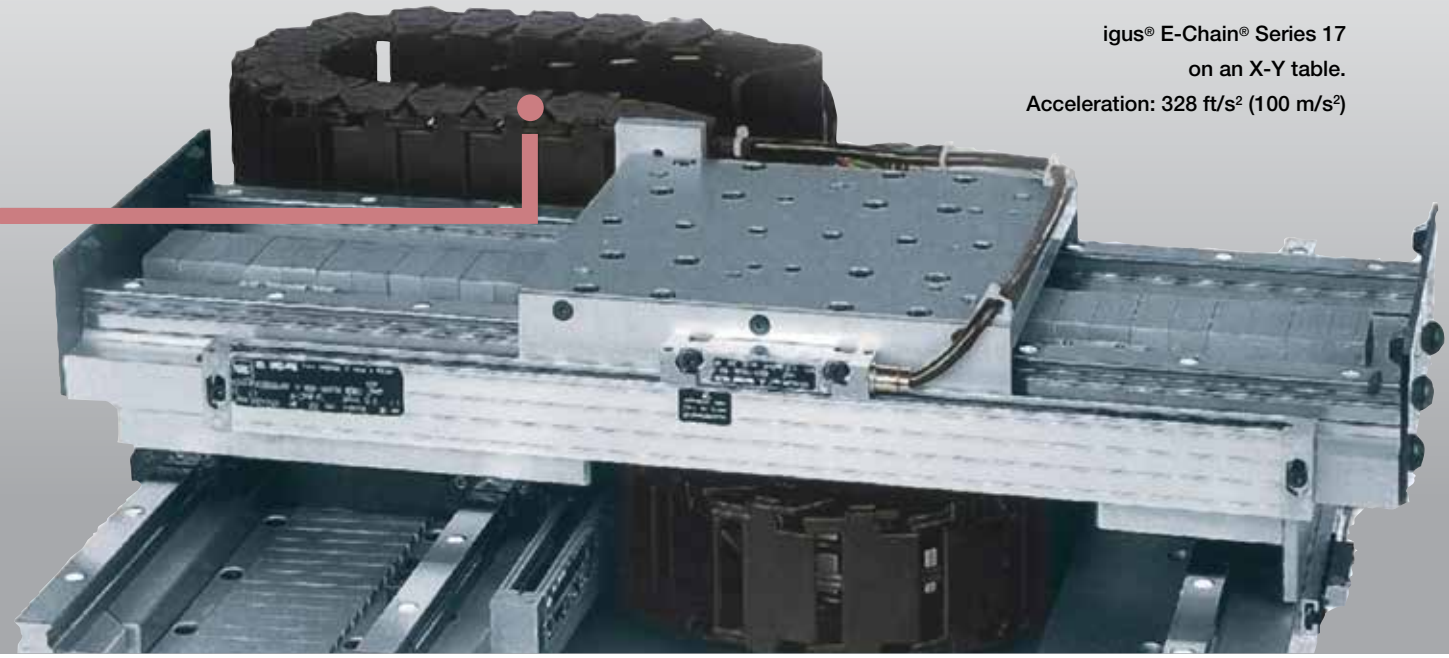
Cleanroom Class 1 (ISO class 3) for Zipper Series 15, tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

iF-Design Award Winner

Low-noise

Fast Opening and Closing with “Zipper”

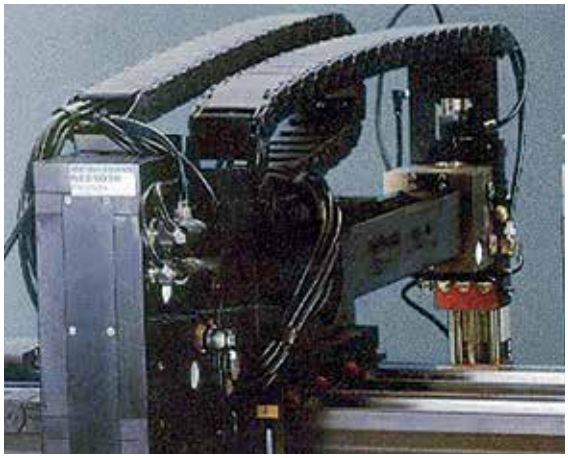


igus® E-Chain® Series 17
on an X-Y table.
Acceleration: 328 ft/s² (100 m/s²)

## Lightning fast opening and closing with “Zipper”

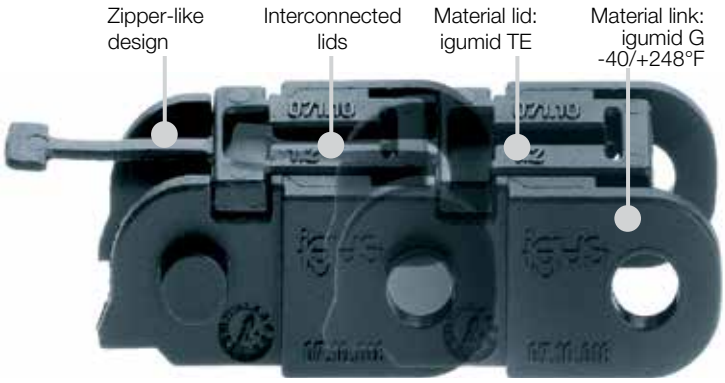
- Reduced assembly-time
- Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise and smooth operation
- High accelerations: 328 ft/s² (100 m/s²) and more are possible
- Interior separation possible for larger versions (Series 15 and 17)

igus® E-Chain® Series 15 Zipper in
automatic equipment - reduce assembly time



Series 15 with acceleration of 328 ft/s² (100 m/s²)
on pick-and-place robots, low noise

# E-Chain System® Zipper Selection Guide



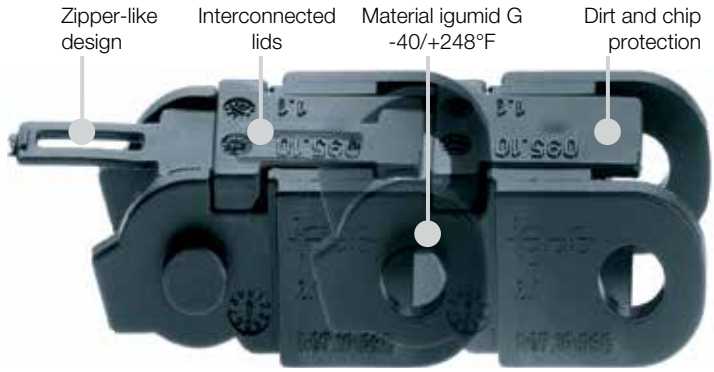

## Zipper E-Chains®

- Reduced assembly-time:
  Zipper-like design for quick opening and closing of lids
- Zipper lids can be separated and joined at each chain link
- Small pitch for low noise, smooth operation
- High acceleration: 328 ft/s² (100 m/s²) and more
- Interior separation possible for larger versions
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **047** | .35 | (9.0) | .39- .63 | (10 - 16) | .63- .87 | (16.0 - 22.0) | .49 | (12.5) | .71- 1.50 | (18 - 38) |
| **07** | .41 | (10.3) | .24- 2.52 | (6 - 64) | .49- 2.80 | (12.5 - 71.0) | .59 | (15.0) | .71- 1.50 | (18 - 38) |
| **09** | .59 | (15.0) | .39- 1.97 | (10 - 50) | .72- 2.29 | (18.2 - 58.2) | .76 | (19.3) | 1.10- 1.89 | (28 - 48) |
| **15** | .67 | (17.0) | .59- 3.94 | (15 - 100) | 1.02- 4.45 | (26.0 - 113.0) | .94 | (24.0) | 1.50- 7.09 | (38 - 180) |
| **17** | 1.26 | (32.0) | .59- 3.94 | (15 - 100) | 1.02- 4.45 | (26.0 - 113.0) | 1.54 | (39.0) | 2.48- 4.92 | (63 - 125) |

# For protection against dirt and debris

For information about this zipper series please refer to the Tubes section of the catalog ➤ **Tubes, Chapter 5**




## Zipper E-Tubes against chips and dirt

- Fully enclosed E-Tube with zipper opening mechanism
- Protection against dirt and chips
- Superfast opening of interconnected lids
- Modular design - tool-free lengthening and shortening
- Small pitch for low noise, smooth operation, high acceleration
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **R07** | .41 | (10.3) | .39 - 1.97 | (10 - 50) | .65 - 2.24 | (16.5 - 57.0) | .59 | (15.0) | 1.50 - 1.89 | (38 - 48) |
| **R09** | .59 | (15.0) | .39 - 1.97 | (10 - 50) | .72 - 2.29 | (18.2 - 58.2) | .76 | (19.3) | 1.89 - 3.94 | (48 - 100) |
| **R15** | .67 | (17.0) | .98 - 3.15 | (25 - 80) | 1.42 - 3.70 | (36.0 - 94.0) | .94 | (24.0) | 2.48 - 7.09 | (63 - 180) |
| **R17** | 1.26 | (32.0) | .59 - 2.48 | (15 - 63) | 1.02 - 2.99 | (26.0 - 76.0) | 1.54 | (39.0) | 2.48 - 4.92 | (63 - 125) |

# E-Chain System® Zipper
# Assembly Instructions

## **Assembling** | Zipper

Push and click

Snap lids together

Position and...

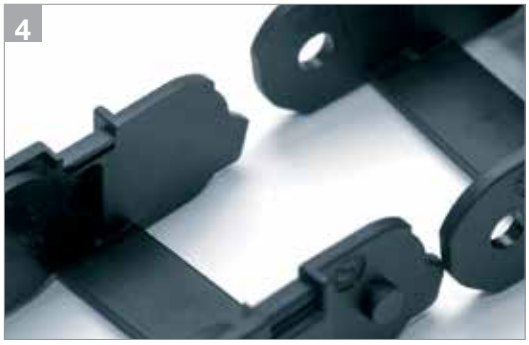
...push and snap

## **Separating |** Zipper

Zipp - upward . All lids fit like a “Zipper”

Separate lids

Release side-link




Twist and pull apart

# E-Chain System® Zipper Series 047

.35

## Price Index

Series 047

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

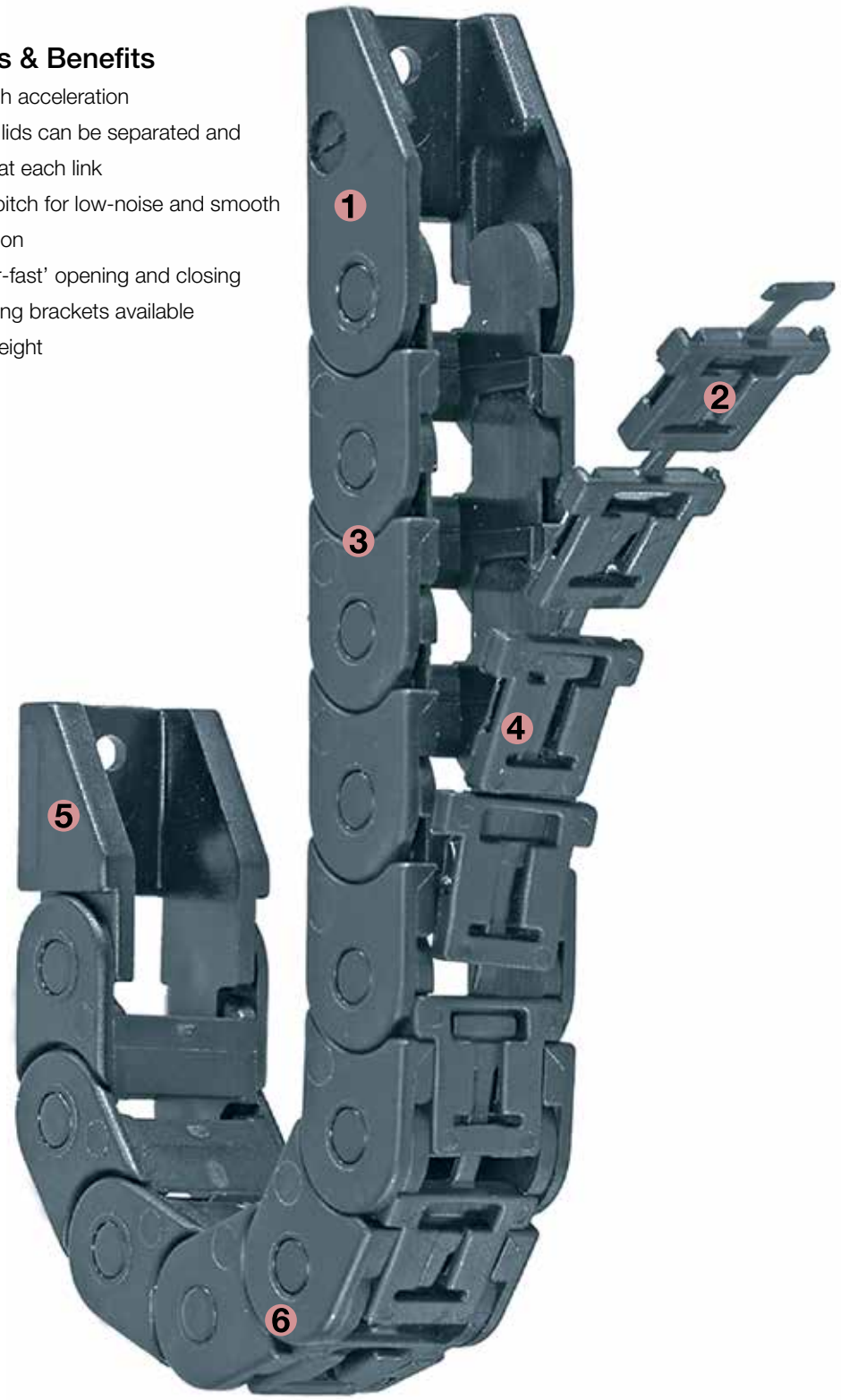
Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. For high acceleration
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. Mounting brackets available
6. Lightweight




## Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required
- If cost is a factor

- If easy filling without opening and closing is required
  ➤ **Series E04 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

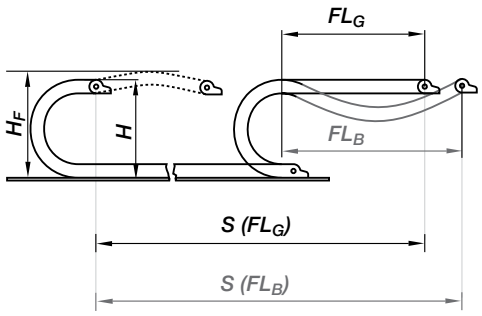
| | |
|---|---|
| 3.28 ft (1 m) **047-10-038-0** | **E-Chain®** |
| 1 Set **0450-10-12** | **Mounting Bracket** |

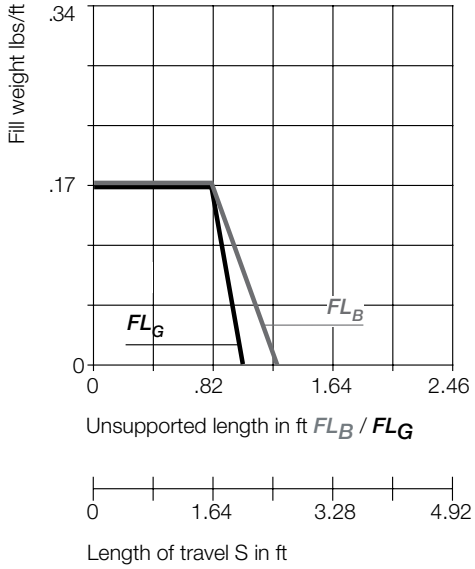
# E-Chain System® Zipper Series 047 Installation Dimensions

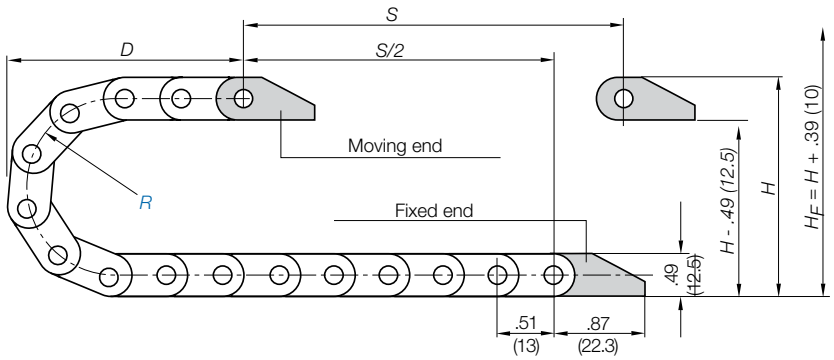
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: $H_F = H$ + .39 in. (10 mm) (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

**Pitch per link: =** .51" (13 mm)
**Links per ft (m): =** 23.46 (77)
**For center mount applications:**
**Chain length =** $S/2 + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

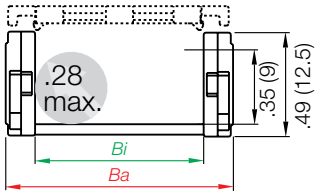
# E-Chain System® Zipper
# Series 047

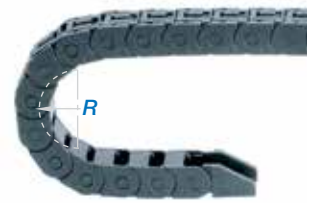


Telephone 1-800-521-2747
Fax 1-401-438-7270

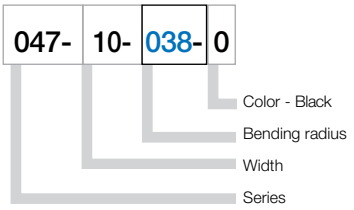
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

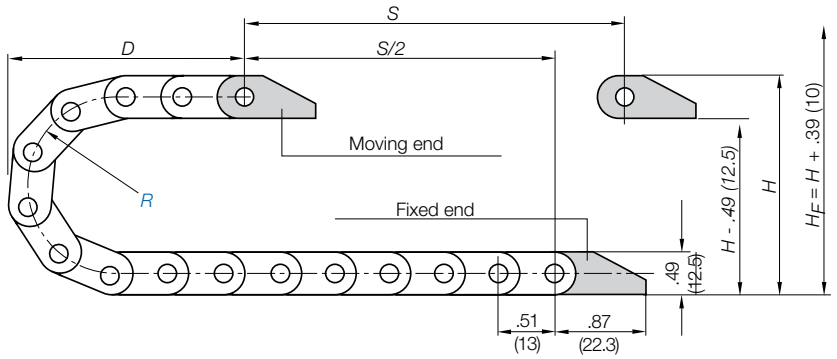
## Series 047 - zip open along the outer radius




**Part Number Structure**






Supplement part number with required radius. Example: 047-10-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.46 (77)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 047-10- | [ ] | -0 | .39 (10) | .63 (16) | ≈ 0.07 (0.10) |
| 047-16- | [ ] | -0 | .63 (16) | .87 (22) | ≈ 0.07 (0.11) |

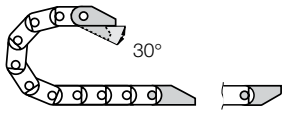
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 047-10-[038]-0

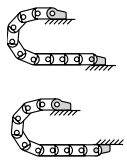
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

# E-Chain System® Zipper
# Series 047
# Mounting Brackets

## Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled

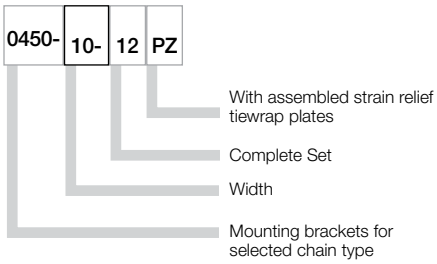


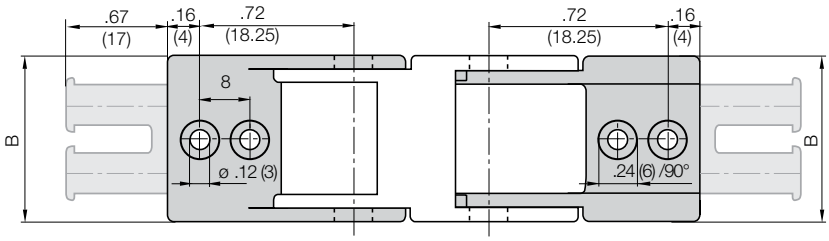


Fixed end
0450-2(PZ)

Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**
0450-10-12 Full set, **each part with pin/bore**
**Single-part order:**
0450-10-1 Mounting bracket **with bore**
0450-10-2 Mounting bracket **with pin**

| Chain Type 08- | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|
| 047-10 | **0450-10-12PZ** | **0450-10-12** | .63 | (16) | 1 |
| 047-16 | **0450-16-12PZ** | **0450-16-12** | .87 | (22) | 2 |

## Additional Accessories

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**0450-16-12Q**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 07



## Price Index

Series 07

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. Mounting bracket with integrated strain relief
2. Zipper lids can be separated and joined at each link
3. Small pitch for low-noise and smooth operation
4. 'Zipper-fast' opening and closing
5. For high acceleration
6. Lightweight

## Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quiet operation is required
- If aesthetic design is required
- If excellent service life is required

- If a more cost-effective, openable E-Chain is required
  ➤ **Series B07 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R07 E2 Zipper Tube**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

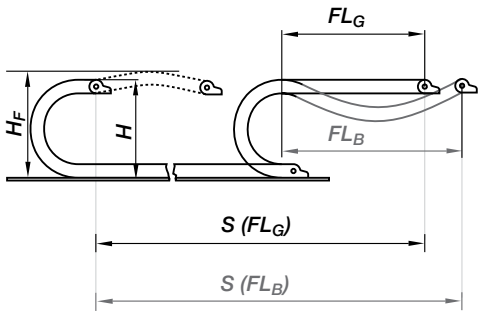
| | |
|---|---|
| 3.28 ft (1 m) **07-20-038-0** | E-Chain® |
| 1 Set **060-20-12PZ** | Mounting Bracket |

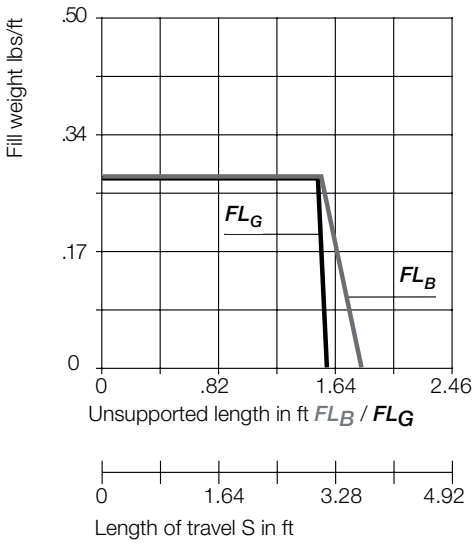
# E-Chain System® Zipper Series 07 Installation Dimensions

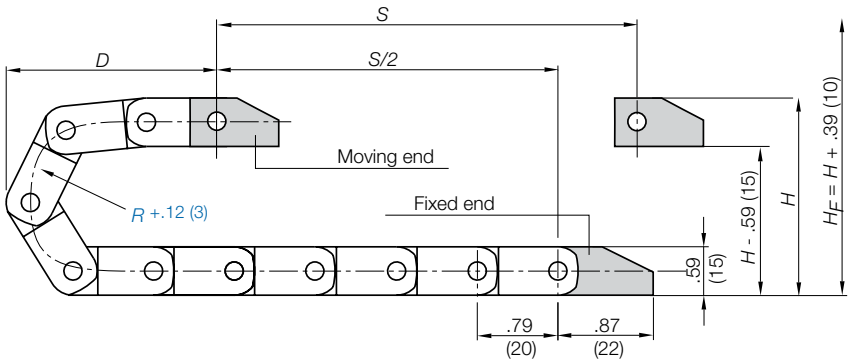
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: $H_F = H + .39$ in. (10 mm) (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $S/2 + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

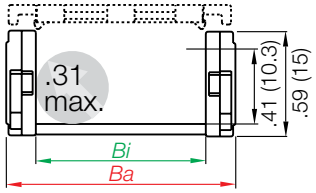
Details of material properties
➤ Chapter 1

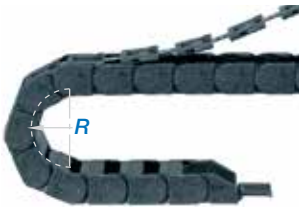
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 07

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

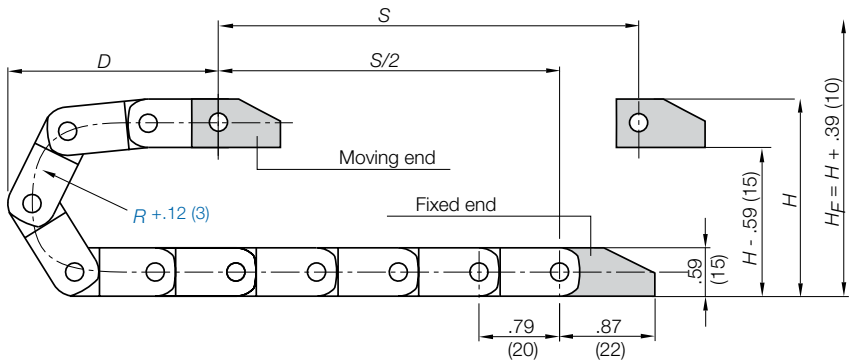
## Series 07 - zip open along the outer radius




**Part Number Structure**

| 07- | 20- | 038- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |




Supplement part number with required radius. Example: 07-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 07-06- | | -0 | .24 (6) | .49 (12.5) | ≈ 0.09 (0.13) |
| 07-10- | | -0 | .39 (10) | .65 (16.5) | ≈ 0.09 (0.14) |
| 07-16- | | -0 | .63 (16) | .89 (22.5) | ≈ 0.11 (0.16) |
| 07-20- | | -0 | .79 (20) | 1.06 (27.0) | ≈ 0.11 (0.17) |
| 07-30- | | -0 | 1.18 (30) | 1.46 (37.0) | ≈ 0.13 (0.20) |
| 07-40- | | -0 | 1.57 (40) | 1.85 (47.0) | ≈ 0.15 (0.23) |
| 07-50- | | -0 | 1.97 (50) | 2.24 (57.0) | ≈ 0.17 (0.26) |
| 07-64- | | -0 | 2.52 (64) | 2.80 (71.0) | ≈ 0.20 (0.30) |

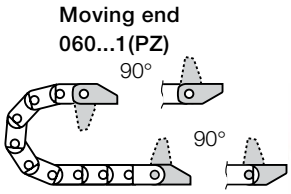
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 07-20-038-0

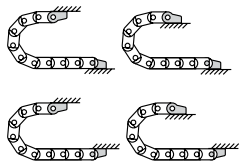
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

# E-Chain System® Zipper
# Series 07
# Mounting Brackets

## Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates



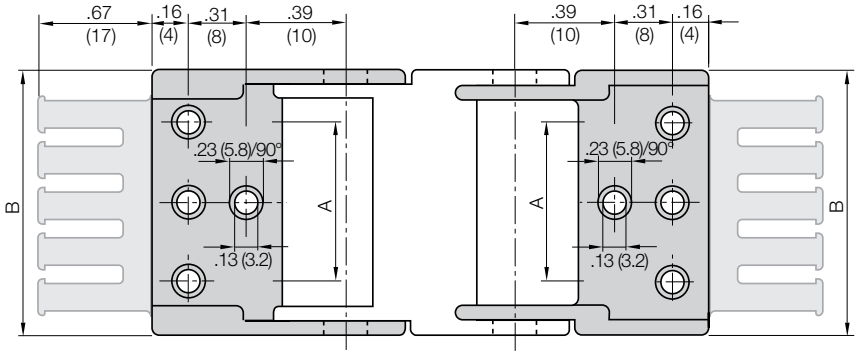


Possible installation configurations -

### Part Number Structure

060- | 20- | 12 | PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 060-: Mounting brackets for selected chain type




**Full set, for both ends:**
060- 20- 12 Full set, **each part with pin/bore**
**Single-part order:**
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

**060-06-12 - 060-20-12:**
Center bores only
**060-30-12 – 060-64-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 07-06 | **060-06-12PZ** | **060-06-12** | — | — | .49 | (12.5) | 1 |
| 07-10 | **060-10-12PZ** | **060-10-12** | — | — | .65 | (16.5) | 1 |
| 07-16 | **060-16-12PZ** | **060-16-12** | — | — | .89 | (22.5) | 2 |
| 07-20 | **060-20-12PZ** | **060-20-12** | — | — | 1.06 | (27.0) | 2 |
| 07-30 | **060-30-12PZ** | **060-30-12** | .87 | (22) | 1.46 | (37.0) | 3 |
| 07-40 | **060-40-12PZ** | **060-40-12** | 1.26 | (32) | 1.85 | (47.0) | 4 |
| 07-50 | **060-50-12PZ** | **060-50-12** | 1.65 | (42) | 2.24 | (57.0) | 5 |
| 07-64 | **060-64-12PZ** | **060-64-12** | 2.20 | (56) | 2.80 | (71.0) | 6 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**060-10-QS**
**060-16-QS**
**060-20-QS**
**060-40-QS**

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**060-10-34QZ**
**060-20-34QZ**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R07

.41

## Price Index

Series R07

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

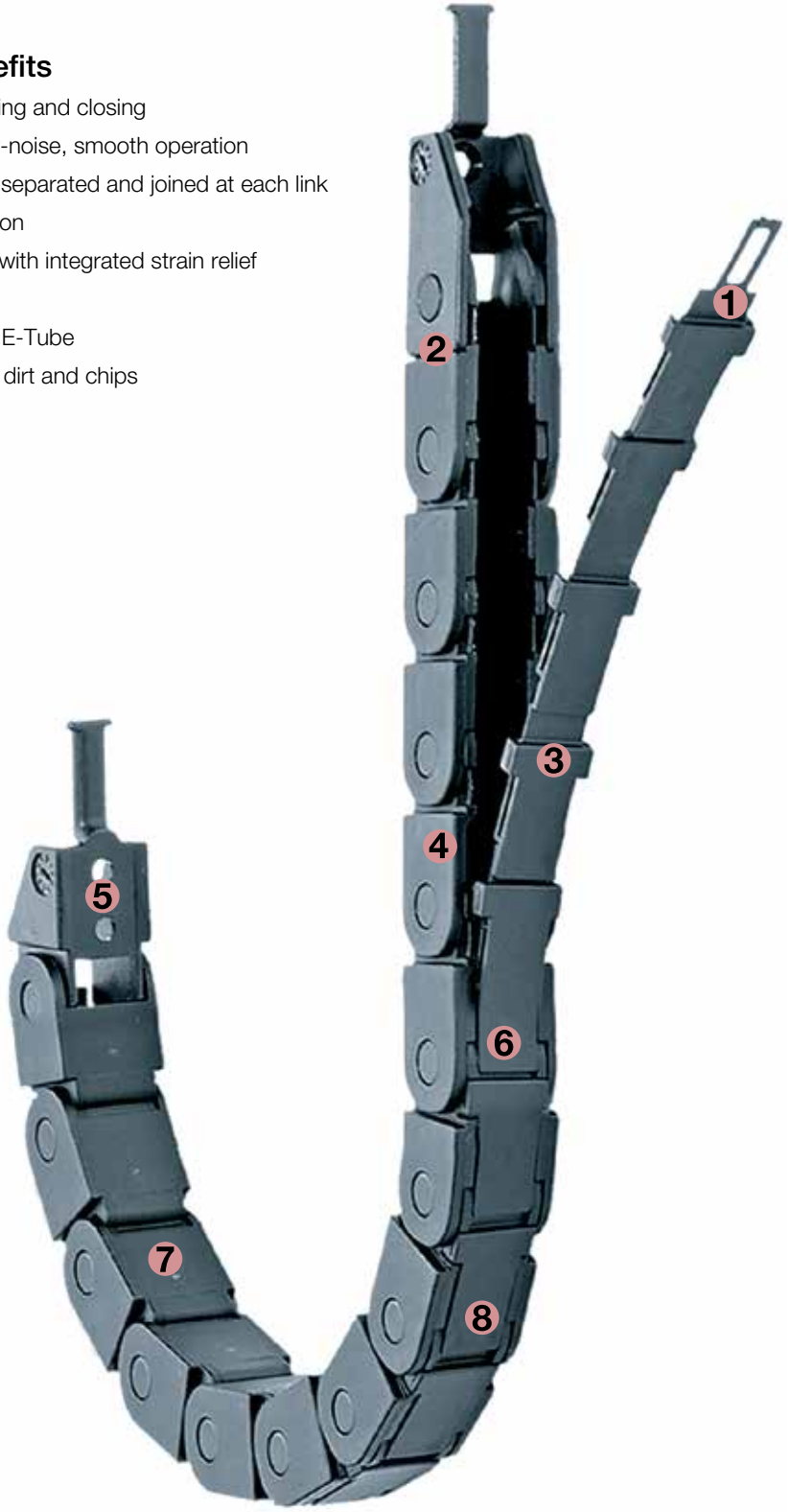
Low-noise

## Assembly Tips

"Zipper" fast opening and closing

## Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Zipper lids can be separated and joined at each link
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight
7. Smallest zip-open E-Tube
8. Protection against dirt and chips




## Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion o f cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 06 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E06 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

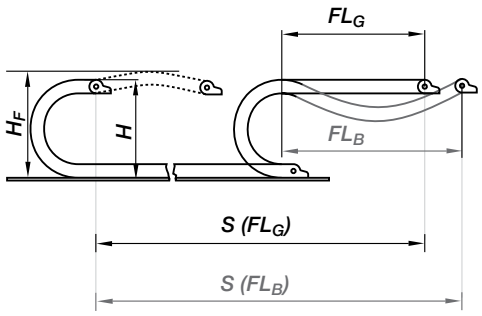
| | |
|---|---|
| 3.28 ft (1 m) **R07-20-038-0** | **E-Chain®** |
| 1 Set **060-20-12PZ** | **Mounting Bracket** |

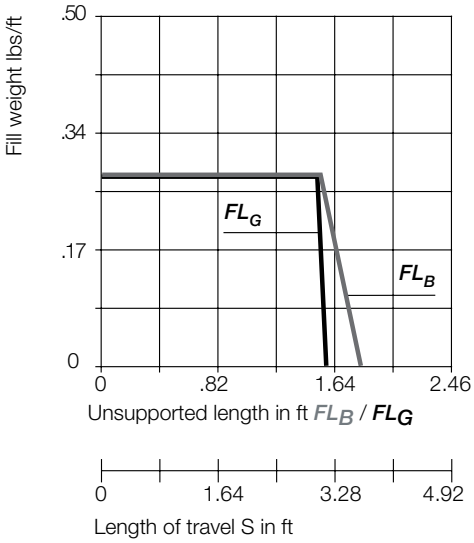
# E-Chain System® E2 Tubes
# Series R07
# Installation Dimensions

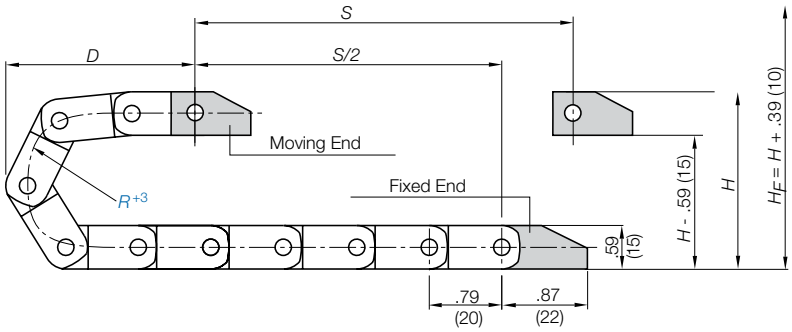
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: ***HF = H + .39 in. (10 mm)*** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.50 (038) | 1.89 (048) |
|---|---|---|
| H | 3.58 (91) | 4.37 (111) |
| D | 2.99 (76) | 3.39 (86) |
| K | 6.30 (160) | 7.68 (195) |

**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *Safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

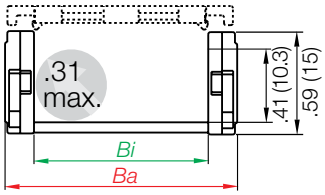
## Technical Data

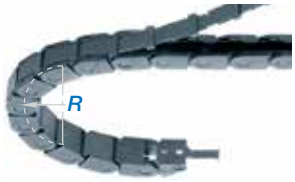
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R07

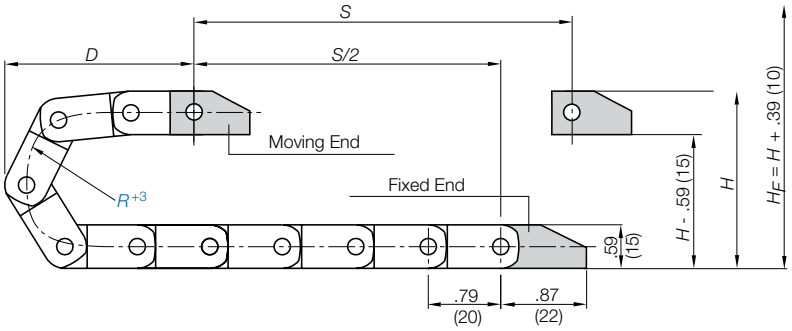
## Series R07 - E-Tube zip open along the outer radius




**Part Number Structure**

| R07- | 20- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: R07-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| R07-10- | ☐ | -0 | .39 (10) | .65 (16.5) | ≈ 0.09 (0.14) |
| R07-16- | ☐ | -0 | .63 (16) | .89 (22.5) | ≈ 0.11 (0.16) |
| R07-20- | ☐ | -0 | .79 (20) | 1.06 (27.0) | ≈ 0.11 (0.17) |
| R07-30- | ☐ | -0 | 1.18 (30) | 1.46 (37.0) | ≈ 0.13 (0.20) |
| R07-40- | ☐ | -0 | 1.57 (40) | 1.85 (47.0) | ≈ 0.15 (0.23) |
| R07-50- | ☐ | -0 | 1.97 (50) | 2.24 (57.0) | ≈ 0.17 (0.26) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R07-20-[038]-0

| | 038 | 048 |
|---|---|---|
| *R* | 1.50 (038) | 1.89 (048) |
| H | 3.58 (91) | 4.37 (111) |
| D | 2.99 (76) | 3.39 (86) |
| K | 6.30 (160) | 7.68 (195) |

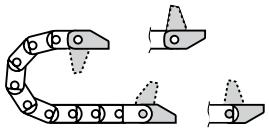
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Tubes
# Series R07
# Mounting Brackets - Plastic

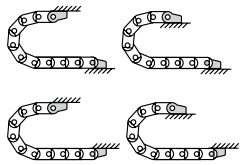
## Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**060 ...1**



**Fixed end**
**060...2**

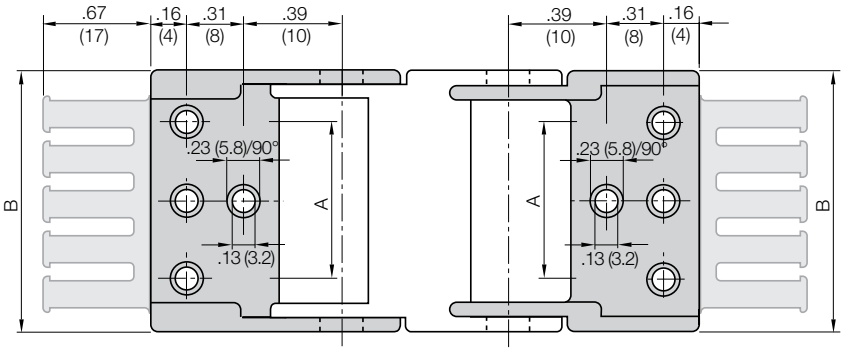


Possible installation configurations -

### Part Number Structure

060- | 10- | 12 | PZ

- 12: With assembled strain relief tiewrap plates
- 10-: Complete Set
- 060-: Width
- PZ: Mounting brackets for selected chain type




**Full set, for both ends:**
060- | 10- | 12 Full set, **each part with pin/bore**

**Single-part order:**
060- | 10- | 1 Mounting bracket **with bore**
060- | 10- | 2 Mounting bracket **with pin**

**060-10-12 - 060-20-12:**
Center bores only
**060-30-12 – 060-50-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| R07-10 | **060-10-12PZ** | **060-10-12** | — | — | .65 | (16.5) | 1 |
| R07-16 | **060-16-12PZ** | **060-16-12** | — | — | .89 | (22.5) | 2 |
| R07-20 | **060-20-12PZ** | **060-20-12** | — | — | 1.06 | (27.0) | 2 |
| R07-30 | **060-30-12PZ** | **060-30-12** | .87 | (22) | 1.46 | (37.0) | 3 |
| R07-40 | **060-40-12PZ** | **060-40-12** | 1.26 | (32) | 1.85 | (47.0) | 4 |
| R07-50 | **060-50-12PZ** | **060-50-12** | 1.65 | (42) | 2.24 | (57.0) | 5 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**060-10-QS**
**060-16-QS**
**060-20-QS**
**060-40-QS**

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**060-10-34QZ**
**060-20-34QZ**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 09

.59

## Price Index

Series 09

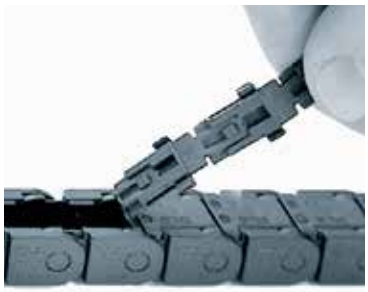
## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

## Assembly Tips



"Zipper-fast" opening and closing

## Features & Benefits

1. Zipper lids can be separated and joined at each link
2. Small pitch for low-noise and smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Mounting bracket with integrated strain relief
6. Lightweight

## Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If quick, easy insertion of cables with preassembled connectors is required
- If quiet operation is required
- If aesthetic design is required
- If high acceleration and travel speed is present

- If a more cost-effective, openable E-Chain is required
  ➤ **Series B09 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a closed tube system is required
  ➤ **Series R09 E2 Zipper Tube**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **09-20-038-0** | **E-Chain®** |
| 1 Set **080-20-12PZ** | **Mounting Bracket** |

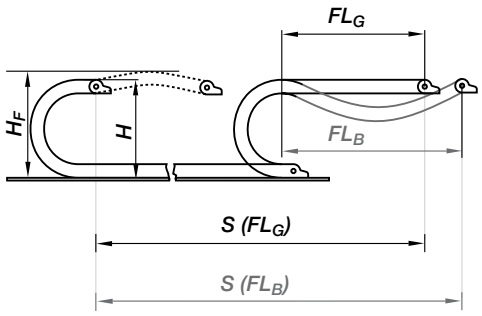
# E-Chain System® Zipper Series 09 Installation Dimensions

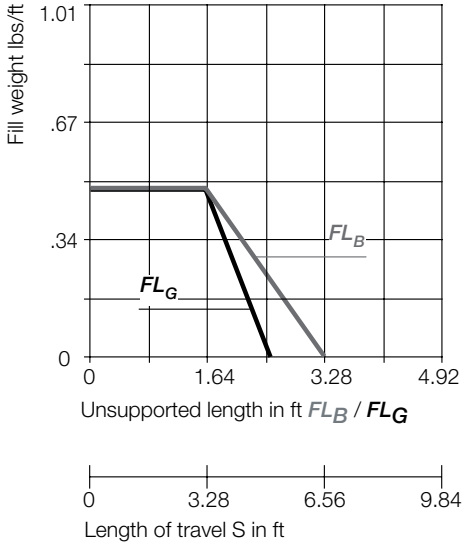


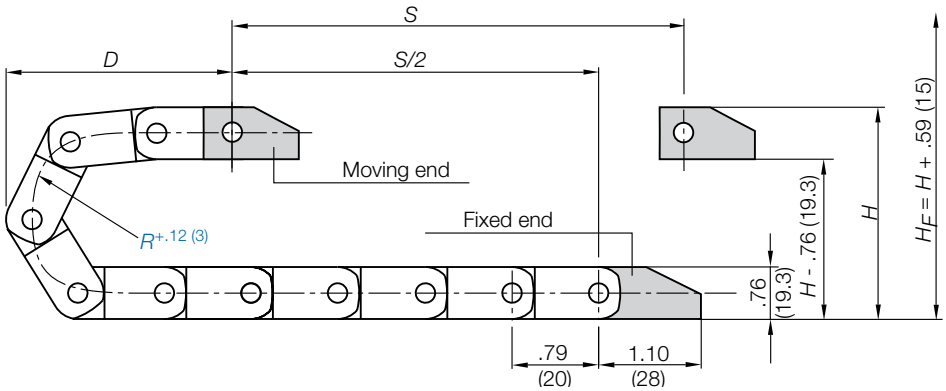
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: $H_F = H$ + **.59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|
| H* | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $S/2 + K$

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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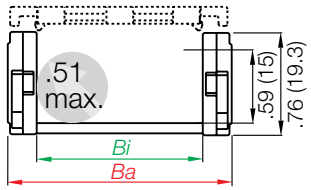
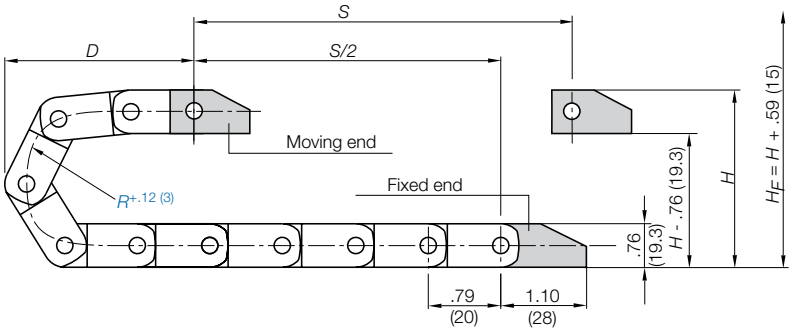
# E-Chain System® Zipper Series 09

## Series 09 - zip open along the outer radius



Part Number Structure

| 09- | 20- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: 09-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 09-10- | ☐ | -0 | .39 (10) | .72 (18.2) | ≈ 0.14 (0.21) |
| 09-16- | ☐ | -0 | .63 (16) | .95 (24.2) | ≈ 0.16 (0.24) |
| 09-20- | ☐ | -0 | .79 (20) | 1.11 (28.2) | ≈ 0.17 (0.25) |
| 09-30- | ☐ | -0 | 1.18 (30) | 1.50 (38.2) | ≈ 0.19 (0.28) |
| 09-40- | ☐ | -0 | 1.57 (40) | 1.90 (48.2) | ≈ 0.21 (0.31) |
| 09-50- | ☐ | -0 | 1.97 (50) | 2.29 (58.2) | ≈ 0.23 (0.34) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 09-20-038-0

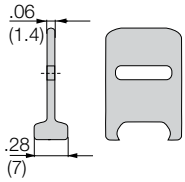
| | 028 | 038 | 048 |
|---|---|---|---|
| *R* | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H* | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
080-20-QS
080-30-QS

# E-Chain System® Zipper
# Series 09
# Mounting Brackets

## Interior Separation

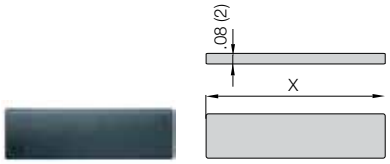



**Slotted separator**

| | |
|---|---|
| Unassembled | **Part No. B09-2** |
| Assembled | **Part No. B09-2-1** |

- **Separator B09-2**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

### Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf**
  is used in applications with many thin cables with similar diameters.

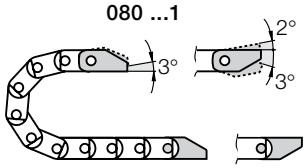
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.63 | (16) | **110-16** | **111-16** | 1.18 | (30) | **110-30** | **111-30** | 1.97 | (50) | **110-50** | **111-50** |
| 0.79 | (20) | **110-20** | **111-20** | 1.57 | (40) | **110-40** | **111-40** | | | | |

## Mounting Brackets - Plastic

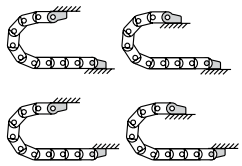
### Plastic, pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**080 ...1**

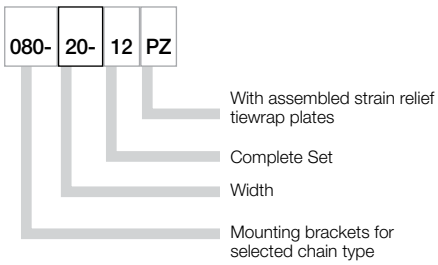


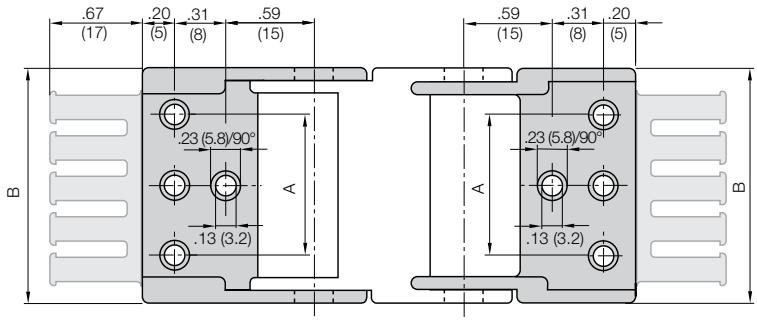

**Fixed end**
**080...2**



Possible installation configurations -

**Part Number Structure**




**Full set, for both ends:**
080- 20- 12 Full set, **each part with pin/bore**
**Single-part order:**
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

**080-10-12 - 080-20-12:**
Center bores only
**080-30-12 – 080-50-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 09-10 | **080-10-12PZ** | **080-10-12** | — | — | .72 | (18.2) | 1 |
| 09-16 | **080-16-12PZ** | **080-16-12** | — | — | .95 | (24.2) | 2 |
| 09-20 | **080-20-12PZ** | **080-20-12** | — | — | 1.11 | (28.2) | 2 |
| 09-30 | **080-30-12PZ** | **080-30-12** | .87 | (22) | 1.50 | (38.2) | 3 |
| 09-40 | **080-40-12PZ** | **080-40-12** | 1.26 | (32) | 1.90 | (48.2) | 4 |
| 09-50 | **080-50-12PZ** | **080-50-12** | 1.65 | (42) | 2.29 | (58.2) | 5 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R09

.59

## Price Index

Series R09

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

iF-Design Award Winner

Flammability Class
VDE 0304 IIC UL94 HB

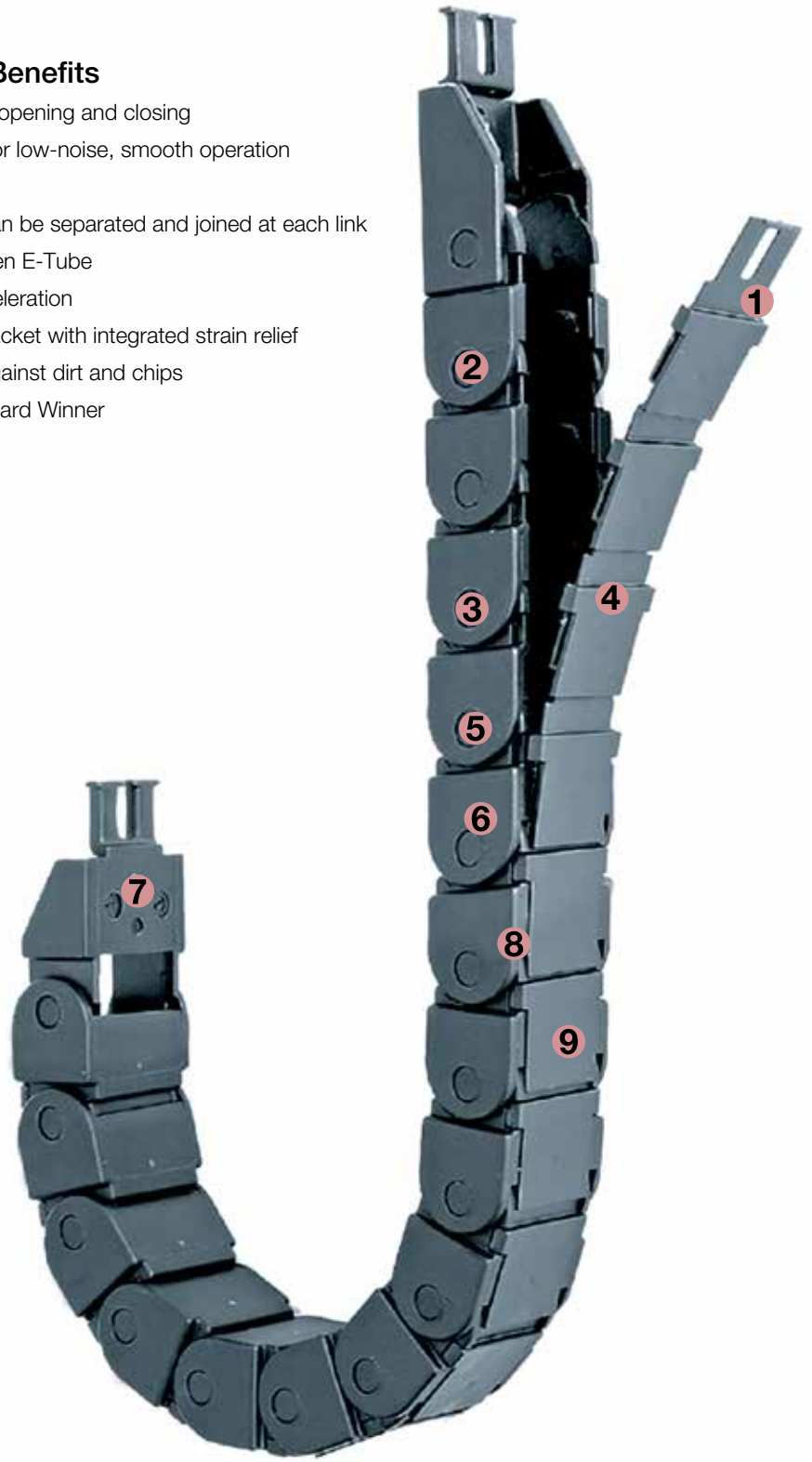
Low-noise

## Assembly Tips

"Zipper" fast opening and closing

## Features & Benefits

1. "Zipper" fast opening and closing
2. Small pitch for low-noise, smooth operation
3. Lightweight
4. Zipper lids can be separated and joined at each link
5. Small zip-open E-Tube
6. For high acceleration
7. Mounting bracket with integrated strain relief
8. Protection against dirt and chips
9. iF-Design Award Winner




## Usage Guidelines

- If fast installation using zipper lids is required
- If protection against dust and dirt is required
- If quick insertion of cables with preassembled connectors is required

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is necessary
  ➤ **Series E08 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **R09-20-048-0** | **E-Chain®** |
| 1 Set **080-20-12PZ** | **Mounting Bracket** |

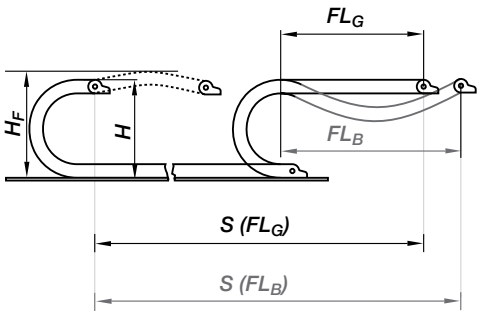
# E-Chain System® E2 Tubes
# Series R09
# Installation Dimensions

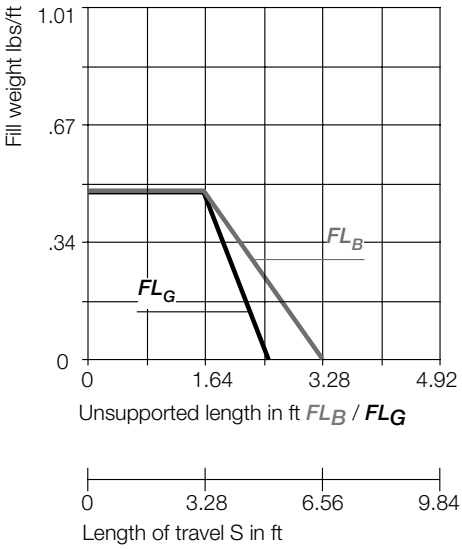


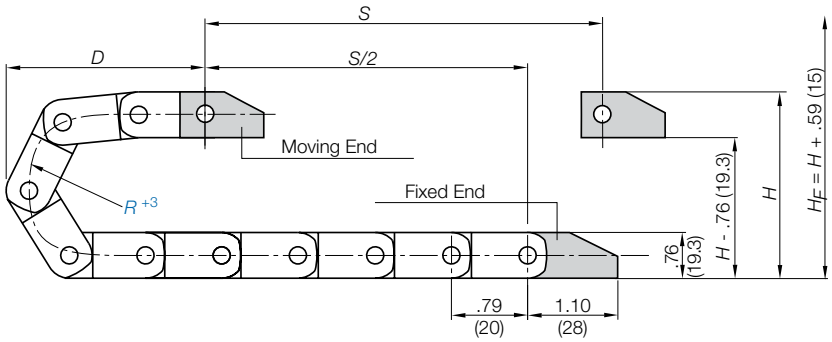
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H + .59 in. (15 mm)*** (with .20 lbs/ft (0.3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.89 (048) | 2.95 (075) | 3.94 (100) |
|---|---|---|---|
| H | 4.53 (115) | 6.65 (169) | 8.62 (219) |
| D | 3.46 (88) | 4.53 (115) | 5.51 (140) |
| K | 7.68 (195) | 11.02 (280) | 13.98 (355) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *Safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

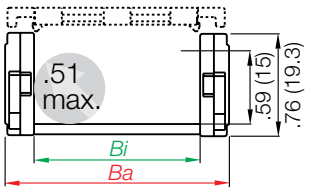
Details of material properties
➤ Chapter 1

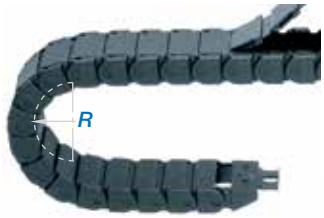
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R09

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series R09 - E-Tube zip open along the outer radius

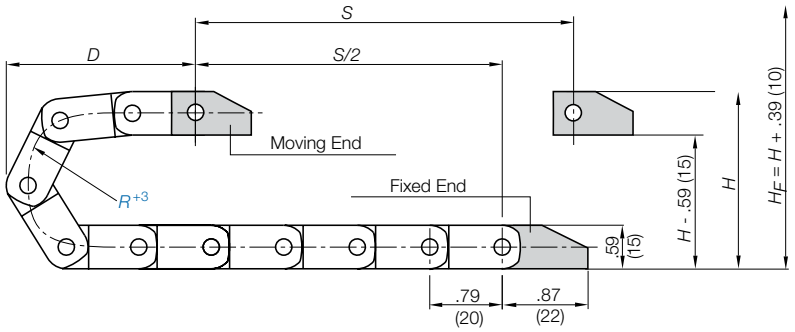


Part Number Structure

| R09- | 20- | 048- | 0 |
|---|---|---|---|

Color - Black
Bending radius
Width
Series




Supplement part number with required radius. Example: R09-20-048-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| R09-10- | ☐ | -0 | .39 (10) | .72 (18.2) | ≈0.15 (0.23) |
| R09-16- | ☐ | -0 | .63 (16) | .95 (24.2) | ≈0.17 (0.26) |
| R09-20- | ☐ | -0 | .79 (20) | 1.11 (28.2) | ≈0.18 (0.27) |
| R09-30- | ☐ | -0 | 1.18 (30) | 1.50 (38.2) | ≈0.20 (0.30) |
| R09-40- | ☐ | -0 | 1.57 (40) | 1.90 (48.2) | ≈0.22 (0.33) |
| R09-50- | ☐ | -0 | 1.97 (50) | 2.29 (58.2) | ≈0.24 (0.36) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R09-20-038-0

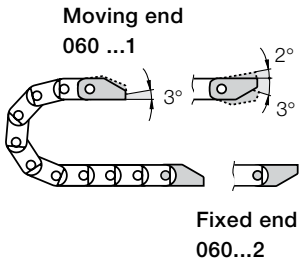
| | 048 | 075 | 100 |
|---|---|---|---|
| *R* | 1.89 (048) | 2.95 (075) | 3.94 (100) |
| H | 4.53 (115) | 6.65 (169) | 8.62 (219) |
| D | 3.46 (88) | 4.53 (115) | 5.51 (140) |
| K | 7.68 (195) | 11.02 (280) | 13.98 (355) |

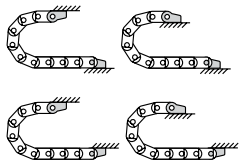
# E-Chain System® E2 Tubes
# Series R09
# Interior Separation / Mounting Brackets - Plastic

## Mounting Brackets - Plastic

### Plastic, one-piece

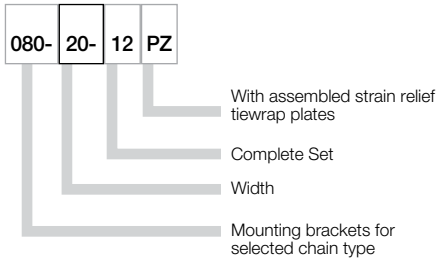
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

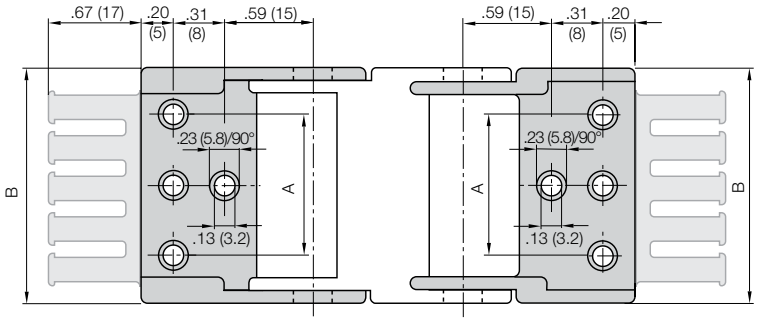




Possible installation configurations -

**Part Number Structure**




**Full set, for both ends:**
080- 20- 12 Full set, **each part with pin/bore**

**Single-part order:**
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

**080-10-12 - 080-20-12:**
Center bores only
**080-30-12 – 080-50-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 08-10 | **080-10-12PZ** | **080-10-12** | — | — | .72 | (18.2) | 1 |
| 08-16 | **080-16-12PZ** | **080-16-12** | — | — | .95 | (24.2) | 2 |
| 08-20 | **080-20-12PZ** | **080-20-12** | — | — | 1.11 | (28.2) | 2 |
| 08-30 | **080-30-12PZ** | **080-30-12** | .87 | (22) | 1.50 | (38.2) | 3 |
| 08-40 | **080-40-12PZ** | **080-40-12** | 1.26 | (32) | 1.90 | (48.2) | 4 |
| 08-50 | **080-50-12PZ** | **080-50-12** | 1.65 | (42) | 2.29 | (58.2) | 5 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**080-20-QS**
**080-30-QS**

**Quickfix -** mounting bracket with dowel, upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 15

.66

## Price Index

Series 15

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. 'Zipper-fast' opening and closing
3. Small pitch for low-noise, smooth
4. operation
   Zipper lids can be separated and joined at
5. each link
   Mounting bracket with integrated strain
6. relief
   For high acceleration

## Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If high stability and long service life are required

- If opening of the link is not necessary
  ➤ **Series 10 E2 Mini**
- If torsion occurs
  ➤ **Series E14 E-Z Chain**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 Mini**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

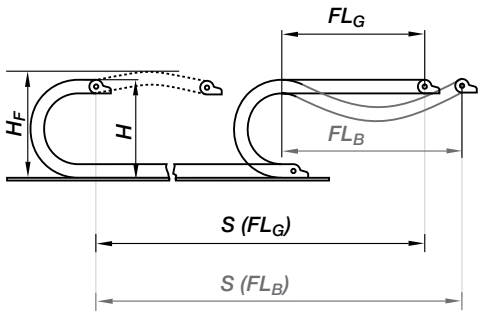
| | |
|---|---|
| 3.28 ft (1 m) **15-025-038-0** | **E-Chain®** |
| With 2 separators **154** assembled every 2nd link | **Interior Separation** |
| 1 Set **1025-12PZ** | **Mounting Bracket** |

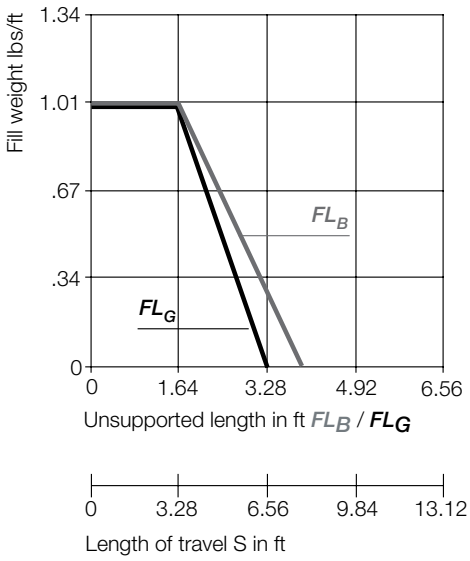
# E-Chain System® Zipper Series 15 Installation Dimensions

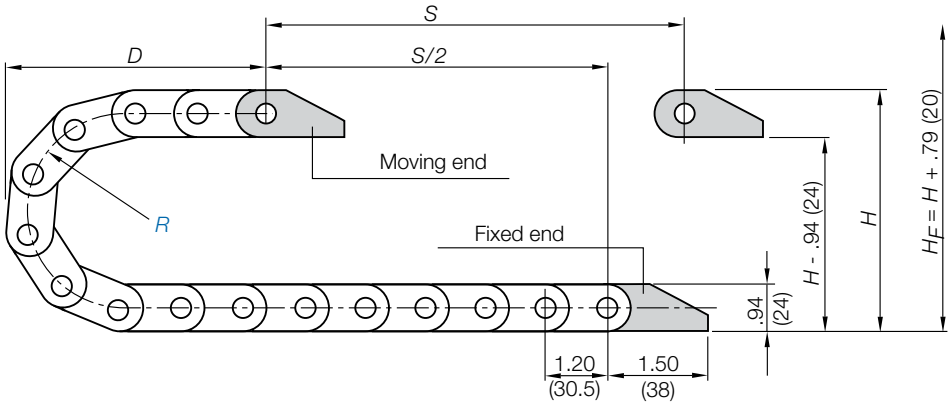
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|---|
| H | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.74 (95) | 4.13 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.17 (182) | 7.95 (202) | 9.33 (237) |
| K | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

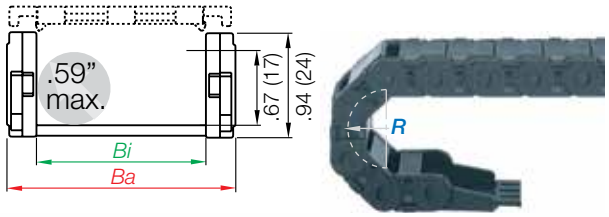
## Technical Data

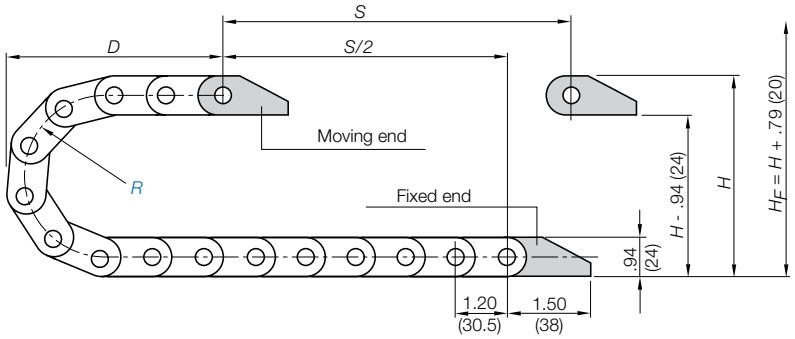
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 15

## Series 15 - Zip-open along the outer radius






**Part Number Structure**

| 15- | 025- | 038- | 0 |
|---|---|---|---|

- 0 — Color - Black
- 038 — Bending radius
- 025 — Width
- 15 — Series

Supplement part number with required radius. Example: 15-025-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number Snap-open outer radius | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 15-015- | | -0 | .59 (15) | 1.02 (26) | ≈ 0.24 (0.35) |
| 15-025- | | -0 | .98 (25) | 1.42 (36) | ≈ 0.27 (0.40) |
| 15-038- | | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.31 (0.46) |
| 15-050- | | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.35 (0.52) |
| 15-5- | | -0 | 2.48 (63) | 2.99 (76) | ≈ 0.42 (0.63) |
| 15-6 | | -0 | 3.15 (80) | 3.70 (94) | ≈ 0.47 (0.70) |
| 15-7 | | -0 | 3.94 (100) | 4.45 (113) | ≈ 0.51 (0.76) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 15-025-[038]-0

| | 038 | 048 | 075 | 100 | 110 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|---|
| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
| H | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.74 (95) | 4.13 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.17 (182) | 7.95 (202) | 9.33 (237) |
| K | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

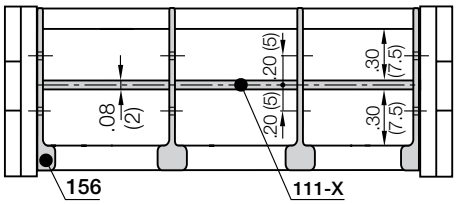
0=Standard color black. For other colors see Chapter 1

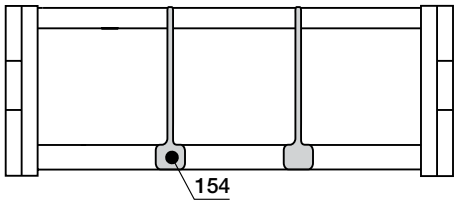
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

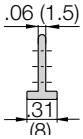
# Interior Separation

## Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the E-Chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other E-Chain® link.

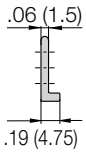



**Vertical separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. 153** |
| Assembled | **Part No. 154** |

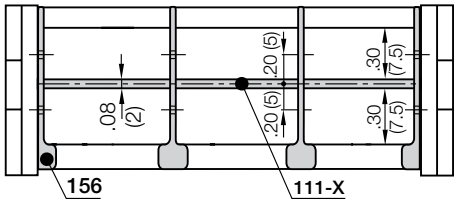



**Side plate**

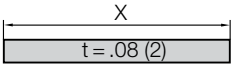
| | |
|---|---|
| Unassembled | **Part No. 155** |
| Assembled | **Part No. 156** |

## Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.




| Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|
| .59 (015) | **110-15** | **111-15** |
| .98 (025) | **110-25** | **111-25** |
| 1.50 (038) | **110-38** | **111-38** |
| 1.97 (050) | **110-50** | **111-50** |
| 2.48 (063) | **110-63** | **111-63** |
| 3.15 (080) | **110-80** | **111-80** |
| 3.94 (100) | **110-100** | **111-100** |




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 15 Mounting Brackets



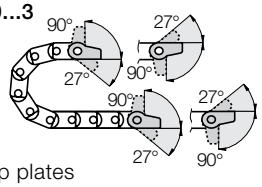
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

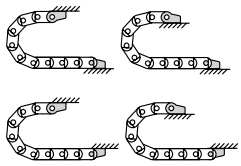
## Option 1: pivoting

- Well suited for space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be mounted on either the fixed or moving end of the chain
- Variable traverse angle for flexible assembly

Moving end
10...3




Fixed end
10...4

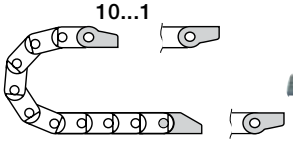


Possible installation configurations -

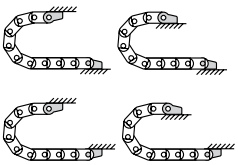
## Option 2: locking

- Extreme accelerations
- If space is limited for height
- Can be mounted on either the fixed or moving end of the chain

Moving end
10...1

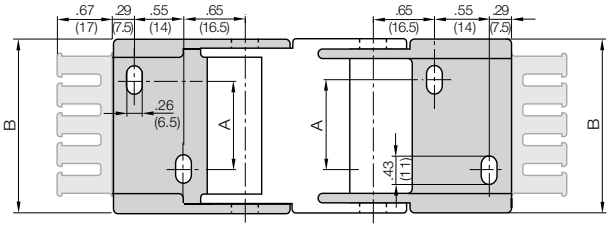


Fixed end
10...2

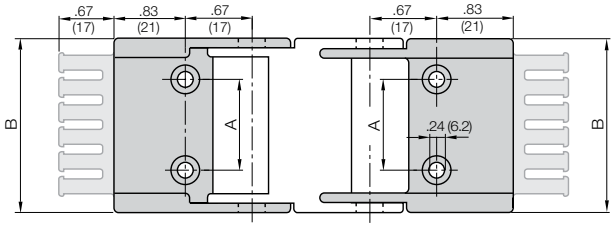


Possible installation configurations -

For E-Chain
15-015 to 15-050




For E-Chain
15-5 to 15-7




**Part Number Structure**

1025- 34- P PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  **12 = Locking**
  **34 = Pivoting**
- Mounting brackets for selected chain type

**Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12**

**Part No. Full Set** (pivoting)
**with Tiewrap Plate**
**Series 15 with 25mm inner width**
**1025-34PZ**

**Part No. Full Set** (pivoting)
**without Tiewrap Plate**
**Series 15 with 25 mm inner width**
**1025-34P**

**Full set, for both ends:**
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

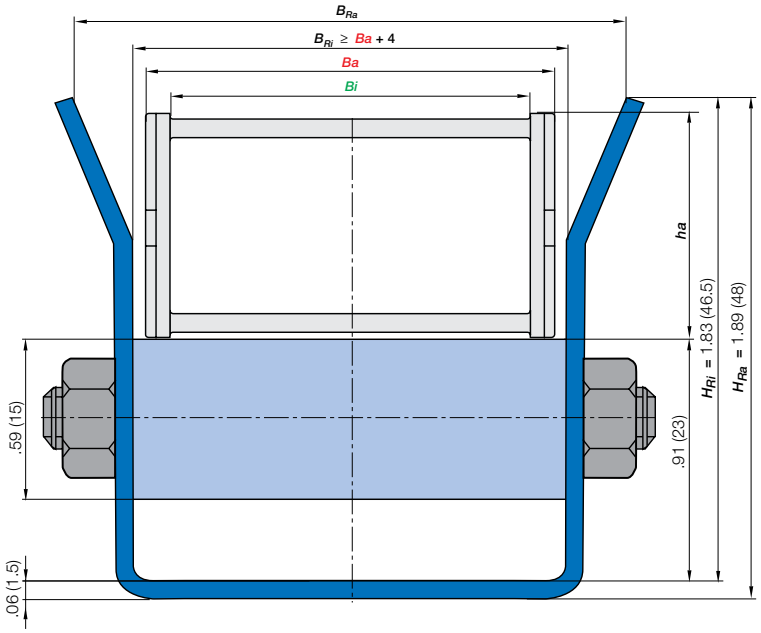
| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | Dimension A (mm) | Dimensions B in. | Dimensions B (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 15-015 | 1015- ☐ PZ | 1015- ☐ P | — | — | 1.00 | (25.5) | 2 |
| 15-025 | 1025- ☐ PZ | 1025- ☐ P | .39 | (10) | 1.40 | (35.5) | 3 |
| 15-038 | 1038- ☐ PZ | 1038- ☐ P | .91 | (23) | 1.91 | (48.5) | 4 |
| 15-050 | 1050- ☐ PZ | 1050- ☐ P | 1.38 | (35) | 2.38 | (60.5) | 5 |
| 15-5 | 105- ☐ PZ | 105- ☐ P | 1.89 | (48) | 2.95 | (75.0) | 6 |
| 15-6 | 106- ☐ PZ | 106- ☐ P | 2.56 | (65) | 3.62 | (92.0) | 8 |
| 15-7 | 107- ☐ PZ | 107- ☐ P | 3.35 | (85) | 4.41 | (112.0) | 10 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

# E-Chain System® Zipper
# Series 15
# Guide Trough

One-piece guide troughs made of steel are available for the Series 15 Zipper E-Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times. No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.




**Dimensions Guide troughs 91-10 — 91-71**

| For Series | Part No. | $B_{Ra}$ in. | $B_{Ra}$ (mm) | $B_{Ri}$ in. | $B_{Ri}$ (mm) | Weight lbs/ft | Weight (kg/m) |
|---|---|---|---|---|---|---|---|
| **15-015** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-10** | 1.59 | (40.5) | 1.18 | (30) | 1.01 | (1.50) |
| Glide bar 6.56 ft. (2m section) | **91-11** | 1.59 | (40.5) | 1.18 | (30) | .30 | (.45) |
| **15-025** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-20** | 1.99 | (50.5) | 1.57 | (40) | 1.11 | (1.65) |
| Glide bar 6.56 ft. (2m section) | **91-21** | 1.99 | (50.5) | 1.57 | (40) | .38 | (.57) |
| **15-038** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-30** | 2.46 | (62.5) | 2.05 | (52) | 1.21 | (1.80) |
| Glide bar 6.56 ft. (2m section) | **91-31** | 2.46 | (62.5) | 2.05 | (52) | .46 | (.68) |
| **15-050** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-40** | 2.85 | (72.5) | 2.44 | (62) | 1.28 | (1.90) |
| Glide bar 6.56 ft. (2m section) | **91-41** | 2.85 | (72.5) | 2.44 | (62) | .61 | (.91) |
| **15-5** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-50** | 3.60 | (91.5) | 3.19 | (81) | 1.52 | (2.26) |
| Glide bar 6.56 ft. (2m section) | **91-51** | 3.60 | (91.5) | 3.19 | (81) | .84 | (1.25) |
| **15-6** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-60** | 4.27 | (108.5) | 3.86 | (98) | 1.83 | (2.72) |
| Glide bar 6.56 ft. (2m section) | **91-61** | 4.27 | (108.5) | 3.86 | (98) | .91 | (1.35) |
| **15-7** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-70** | 5.06 | (128.5) | 4.65 | (118) | 2.13 | (3.17) |
| Glide bar 6.56 ft. (2m section) | **91-71** | 5.06 | (128.5) | 4.65 | (118) | 1.14 | (1.70) |

**Trough material in general: St 1203 galvanized**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R15

.67

## Price Index

Series R15

## Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 classifications upon request

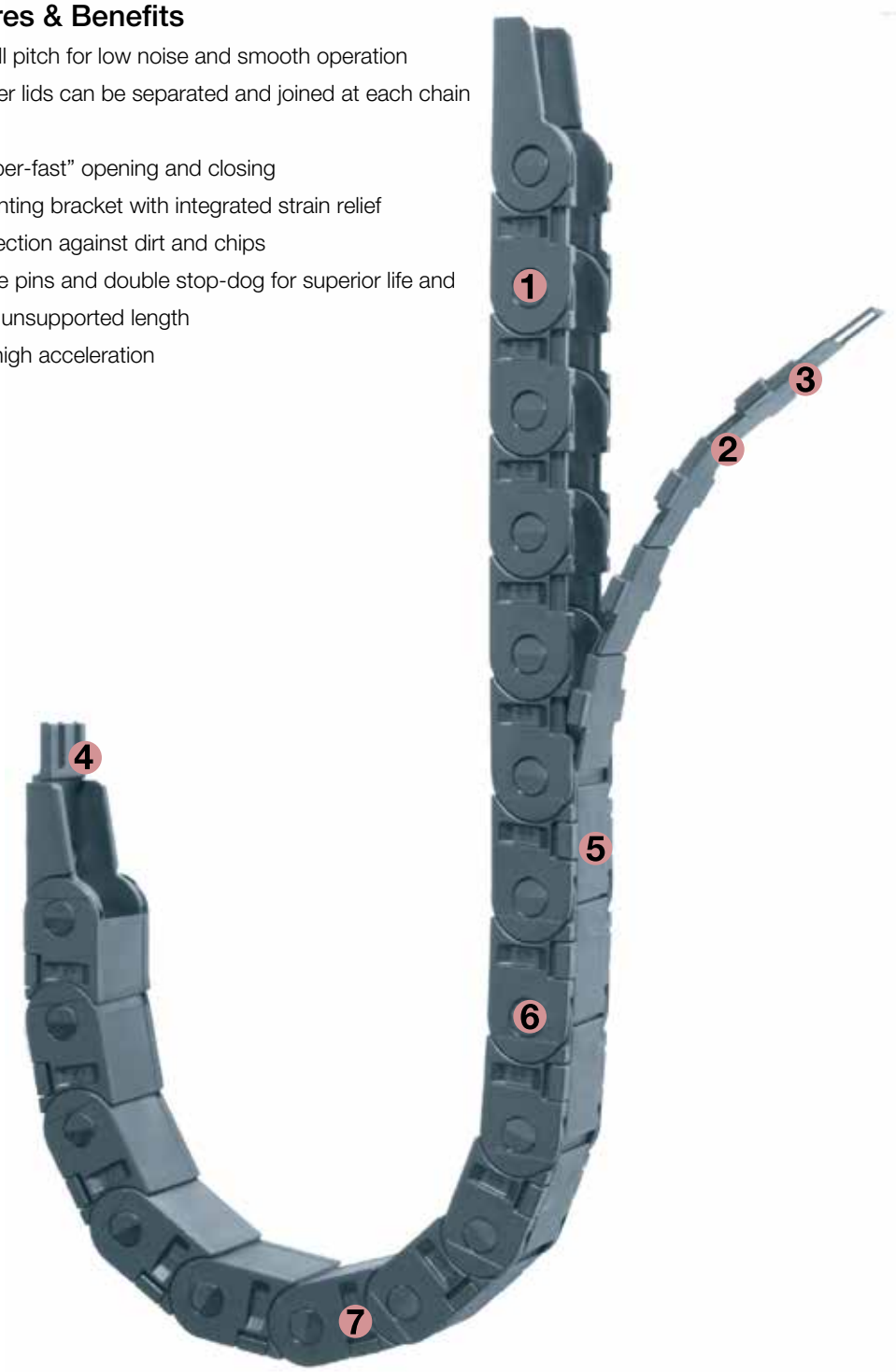
Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. Small pitch for low noise and smooth operation
2. Zipper lids can be separated and joined at each chain link
3. "Zipper-fast" opening and closing
4. Mounting bracket with integrated strain relief
5. Protection against dirt and chips
6. Large pins and double stop-dog for superior life and long unsupported length
7. For high acceleration




## Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If opening of the link is not necessary
  ➤ **Series 10 E2 mini**
- If the chain must snap-open along the inner radius
  ➤ **Series B15i E2 mini**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **R15-025-063-0** | **E-Chain®** |
| With 2 separators **R154** assembled every 2nd link | **Interior Separation** |
| 1 Set **1025-12PZ** | **Mounting Bracket** |

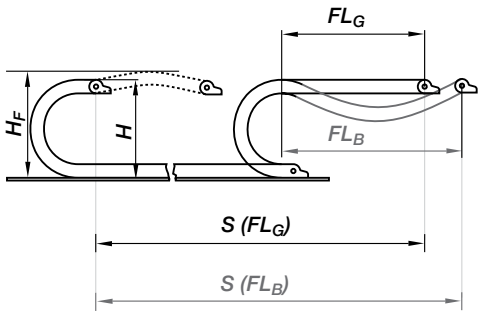
# E-Chain System® E2 Tubes
# Series R15
# Installation Dimensions

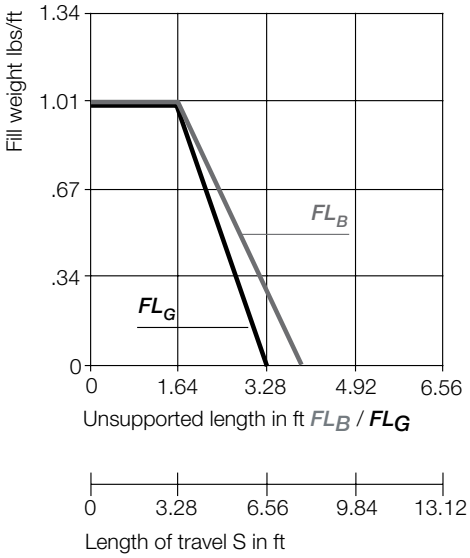


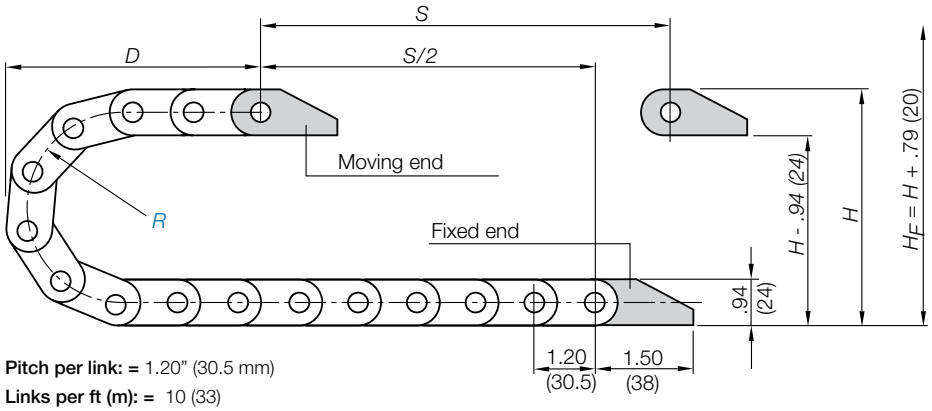
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|
| H | 5.91 (150) | 6.89 (175) | 8.86 (225) | 9.65 (245) | 10.83 (275) | 12.40 (315) | 15.16 (385) |
| D | 4.72 (120) | 5.71 (145) | 6.10 (155) | 6.69 (170) | 7.48 (190) | 8.86 (225) | 10.98 (279) |
| K | 10.24 (260) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

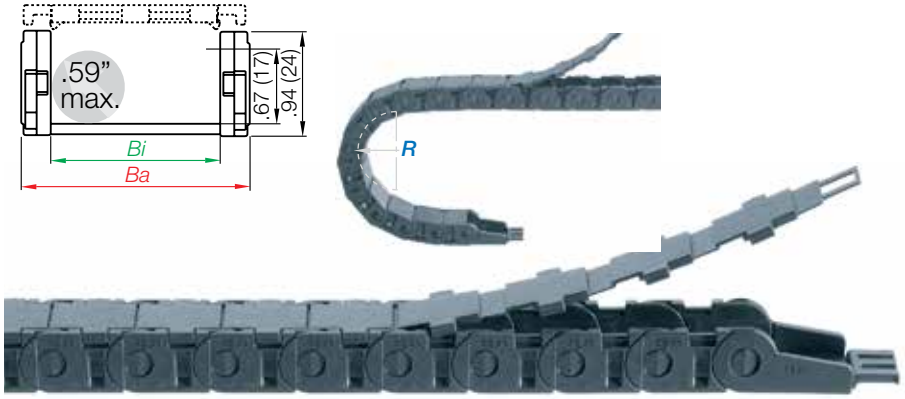
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R15

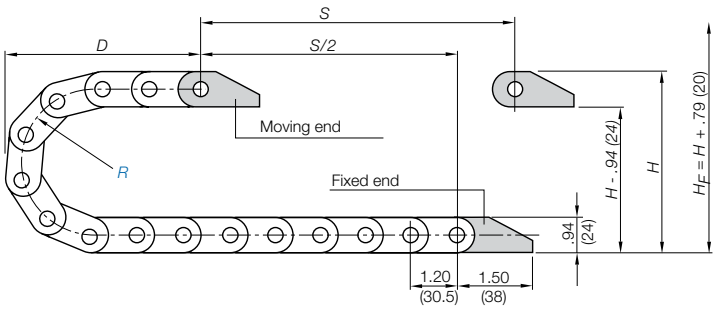
## Series R15 - E-Tube snap-open along the outer radius




**Part Number Structure**

R15-025-063-0

- Color - Black
- Bending radius
- Width
- Series




**Pitch per link:** = 1.20" (30.5 mm)
**Links per ft (m):** = 10 (33)
**For center mount applications:**
**Chain length** = $\frac{S}{2}$ + K

**Supplement part number with required radius. Example: R15-025-[063]-0**
**Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)**

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| R15-025- | ☐ | -0 | .98 (25) | 1.42 (36) | ≈ 0.27 (0.40) |
| R15-038- | ☐ | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.31 (0.46) |
| R15-063- | ☐ | -0 | 2.48 (63) | 2.99 (76) | ≈ 0.42 (0.63) |
| R15-080- | ☐ | -0 | 3.15 (80) | 3.70 (94) | ≈ 0.47 (0.70) |

**Choose from the radii below for all of the above sizes**
***Radius* (mm) Example: R15-025-[063]-0**

| | 063 | 075 | 100 | 110 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
| H | 5.91 (150) | 6.89 (175) | 8.86 (225) | 9.65 (245) | 10.83 (275) | 12.40 (315) | 15.16 (385) |
| D | 4.72 (120) | 5.71 (145) | 6.10 (155) | 6.69 (170) | 7.48 (190) | 8.86 (225) | 10.98 (279) |
| K | 10.24 (260) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

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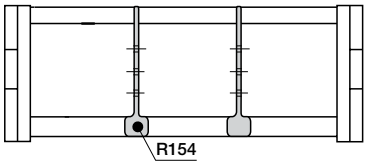
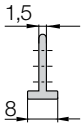
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Tubes
# Series R15
# Interior Separation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .




**Vertical separator R153**

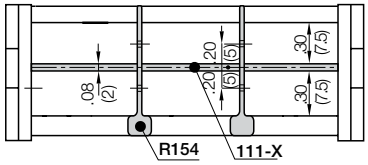
**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. R153** |
| Assembled | **Part No. R154** |

- **Standard separator R153 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

## Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.




**Shelves 110-XX**
Shelves can be inserted at 3 different heights in .20” (5mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 0.98 | (25) | **110-25** | **111-25** |
| 1.50 | (38) | **110-38** | **111-38** |
| 2.68 | (63) | **110-63** | **111-63** |
| 3.15 | (80) | **110-80** | **111-80** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R15
# Mounting Bracket - Plastic

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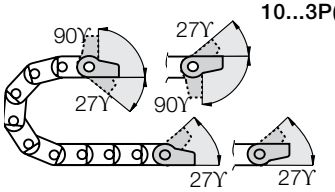
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

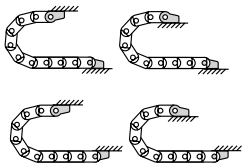
## Option 1: pivoting

- Recommended for unsupported and gliding applications
- Well suited for tight installation conditions
- Available with or without strain relief tiewrap plates
- Variable traverse angle for flexible assembly




**Moving end**
**10...3P(Z)**

**Fixed end**
**10...4**

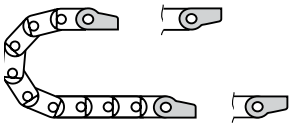


Possible installation configurations -

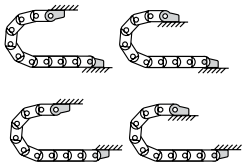
## Option 2: locking

- Recommended for unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications

**Moving end**
**10...1**

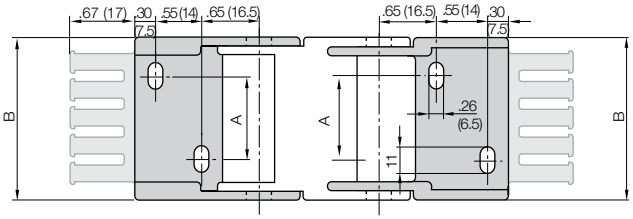


**Fixed end**
**10...2**

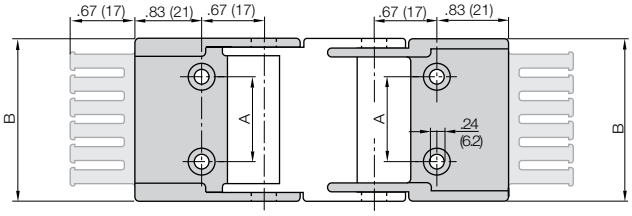


Possible installation configurations -

**For E-Chain**
**R15-015 to R15-050**




**For E-Chain**
**R15-063 to R15-100**




**Part Number Structure**

| 1025- | 34- | P | PZ |
|---|---|---|---|

- PZ: With tiewrap plate
- P: Without tiewrap plate
- 34-: Complete Set
  **12 = Pivoting**
  **34 = Locking**
- 1025-: Mounting brackets for selected chain type

**Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12**

**Part No. Full Set** (pivoting)
**with Tiewrap Plate**
**Series R15 with 25mm inner width**
**1025-34PZ**

**Part No. Full Set** (pivoting)
**without Tiewrap Plate**
**Series R15 with 25 mm inner width**
**1025-34P**

**Full set, for both ends:**
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | Dimension A (mm) | Dimensions B in. | Dimensions B (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| R15-025 | 1025- ☐ PZ | 1025- ☐ P | .39 | (10) | 1.40 | (35.5) | 3 |
| R15-038 | 1038- ☐ PZ | 1038- ☐ P | .91 | (23) | 1.91 | (48.5) | 4 |
| R15-063 | 105- ☐ PZ | 105- ☐ P | 1.89 | (48) | 2.95 | (75.0) | 6 |
| R15-080 | 106- ☐ PZ | 106- ☐ P | 2.56 | (65) | 3.62 | (92.0) | 8 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

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# E-Chain System® Zipper Series 17

1.26

## Price Index

Series 17

## Special Features / Options

Clean-Room — Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

Flammability Class VDE 0304 IIC UL94 HB

Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. Interior separation possible
2. Small pitch for low-noise, smooth operation
3. 'Zipper-fast' opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each link
6. Mounting bracket with integrated strain relief

## Usage Guidelines

- If fast, zipper-like accessibility to cables is required
- If interior separation is required
- If quiet operation is required

- If individual links must open as opposed to 'zipping' open
  ➤ **Series B17 E2 Mini**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

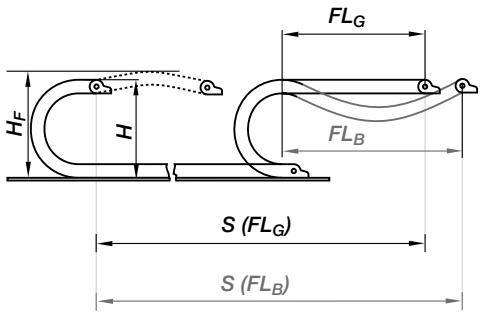
| | |
|---|---|
| 3.28 ft (1 m) **17-2-063-0** | **E-Chain®** |
| With 2 separators **172** assembled every 2nd link | **Interior Separation** |
| 1 Set **117-2-12PZ** | **Mounting Bracket** |

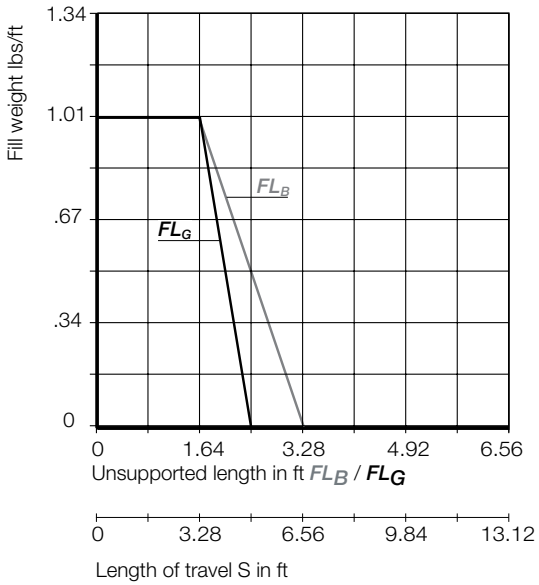
# E-Chain System® Zipper Series 17 Installation Dimensions

**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



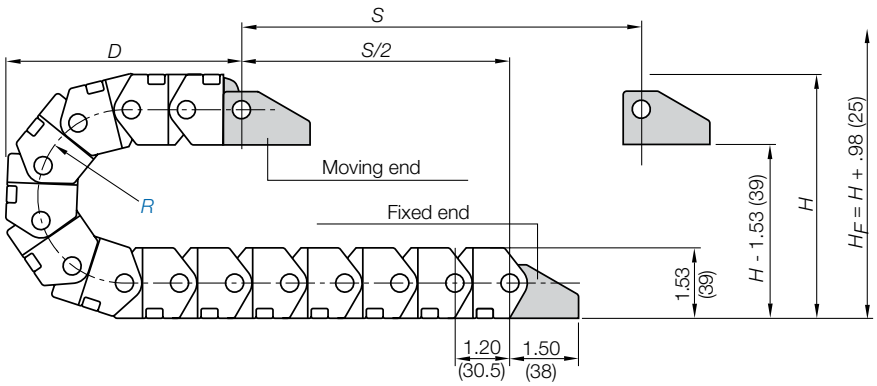




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
$H_F$ = Required clearance height




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F$ = **H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
|---|---|---|---|---|
| H | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 5.04 (128) | 5.51 (140) | 6.50 (165) | 7.48 (190) |
| K | 10.24 (260) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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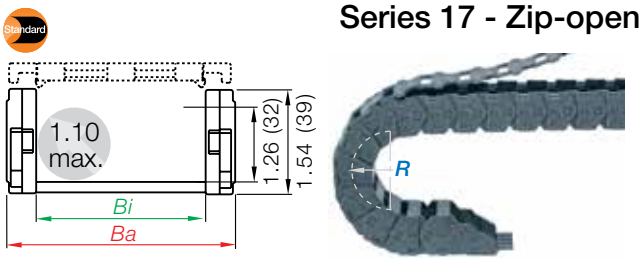
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

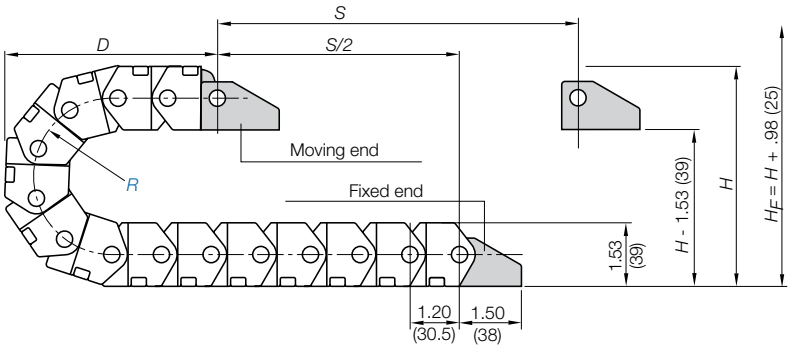
## Series 17 - Zip-open along the outer radius - Standard



**Part Number Structure**

| 17- | 2- | 063- | 0 |
|---|---|---|---|

- 0 – Color - Black
- 063 – Bending radius
- 2 – Width
- 17 – Series




Supplement part number with required radius. Example: 17-1-063 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 17-1- | ☐ | -0 | .59 (15) | 1.02 (26) | ≈ 0.35 (0.52) |
| 17-2- | ☐ | -0 | .98 (25) | 1.42 (36) | ≈ 0.40 (0.59) |
| 17-3- | ☐ | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.44 (0.65) |
| 17-4- | ☐ | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.47 (0.70) |
| 17-5- | ☐ | -0 | 2.48 (63) | 2.99 (76) | ≈ 0.56 (0.83) |
| 17-6 | ☐ | -0 | 3.15 (80) | 3.66 (93) | ≈ 0.62 (0.92) |
| 17-7 | ☐ | -0 | 3.94 (100) | 4.45 (113) | ≈ 0.71 (1.06) |

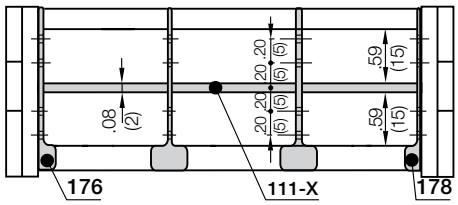
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 17-1-063 -0

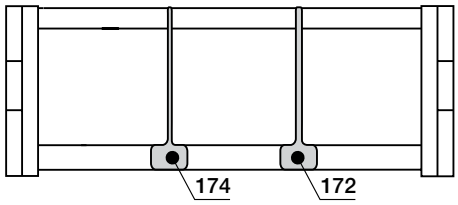
| | 063 | 075 | 100 | 125 |
|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
| H | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 5.04 (128) | 5.51 (140) | 6.50 (165) | 7.48 (190) |
| K | 10.24 (260) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

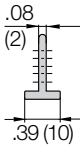
0=Standard color black. For other colors see Chapter 1

## Option 1: Vertical separators

Vertical separators are used if only a vertical subdivision of the E-Chain® interior is required. A slotted separator is used for this subdivision. This separator can also be used with full-width shelves for a continuous horizontal subdivision. By standard, vertical separators are assembled every other E-Chain® link.

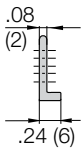


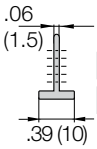

**Vertical Separator for 17-1 to 17-4**

| | |
|---|---|
| Unassembled | **Part No. 171** |
| Assembled | **Part No. 172** |



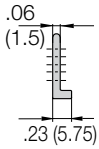

**Side Plate for 17-1 to 17-4**

| | |
|---|---|
| Unassembled | **Part No. 175** |
| Assembled | **Part No. 176** |




**Vertical Separator for 17-5 to 17-7**

| | |
|---|---|
| Unassembled | **Part No. 173** |
| Assembled | **Part No. 174** |

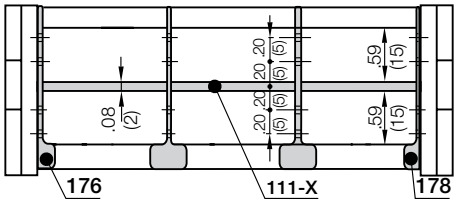



**Side plate for 17-5 to 17-7**

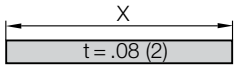
| | |
|---|---|
| Unassembled | **Part No. 177** |
| Assembled | **Part No. 178** |

## Option 2: Full-width shelf

Interior separation with continuous horizontal subdivision is practical is using a large number of thin cables with similar or identical diameters.




| Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|
| .59 (015) | **110-15** | **111-15** |
| .98 (025) | **110-25** | **111-25** |
| 1.50 (038) | **110-38** | **111-38** |
| 1.97 (050) | **110-50** | **111-50** |
| 2.48 (063) | **110-63** | **111-63** |
| 3.15 (080) | **110-80** | **111-80** |
| 3.94 (100) | **110-100** | **111-100** |




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® Zipper Series 17 Mounting Brackets



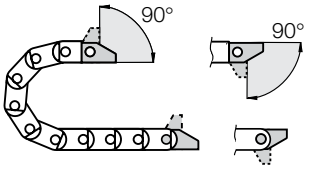
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

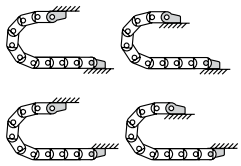
## Option 1: pivoting

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With our without strain relief tiewrap plates

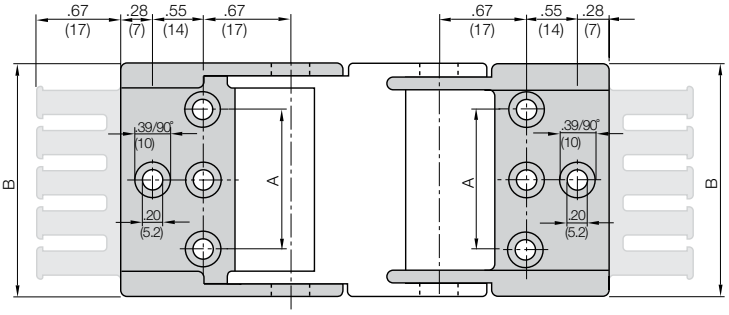
Moving end
117...1P(Z)



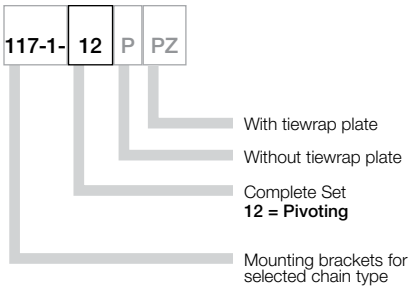

Fixed end
117...2P(Z)



Possible installation configurations -




### Part Number Structure




**Full set, for both ends:**

117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**

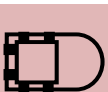
**Single-part order:**

117-1-1-PZ Mounting bracket **with bore + tiewrap plate**

117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Number of Teeth | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|---|---|
| 17-1 | **117-1-12PZ** | **117-1-12P** | 2 | — | — | 1.00 | (25.5) |
| 17-2 | **117-2-12PZ** | **117-2-12P** | 3 | .47 | (12) | 1.40 | (35.5) |
| 17-3 | **117-3-12PZ** | **117-3-12P** | 4 | .98 | (25) | 1.91 | (48.5) |
| 17-4 | **117-4-12PZ** | **117-4-12P** | 5 | 1.46 | (37) | 2.38 | (60.5) |
| 17-5 | **117-5-12PZ** | **117-5-12P** | 6 | 1.89 | (48) | 2.99 | (76.0) |
| 17-6 | **117-6-12PZ** | **117-6-12P** | 8 | 2.56 | (65) | 3.66 | (93.0) |
| 17-7 | **117-7-12PZ** | **117-7-12P** | 10 | 3.35 | (85) | 4.45 | (113.0) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E2 Tubes R17



## Price Index

Series R17

## Special Features / Options

Upon request: Cleanroom Class 1 (ISO class 3) tested by the Dryden Engineering Company, CA

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94-V2 classifications upon request

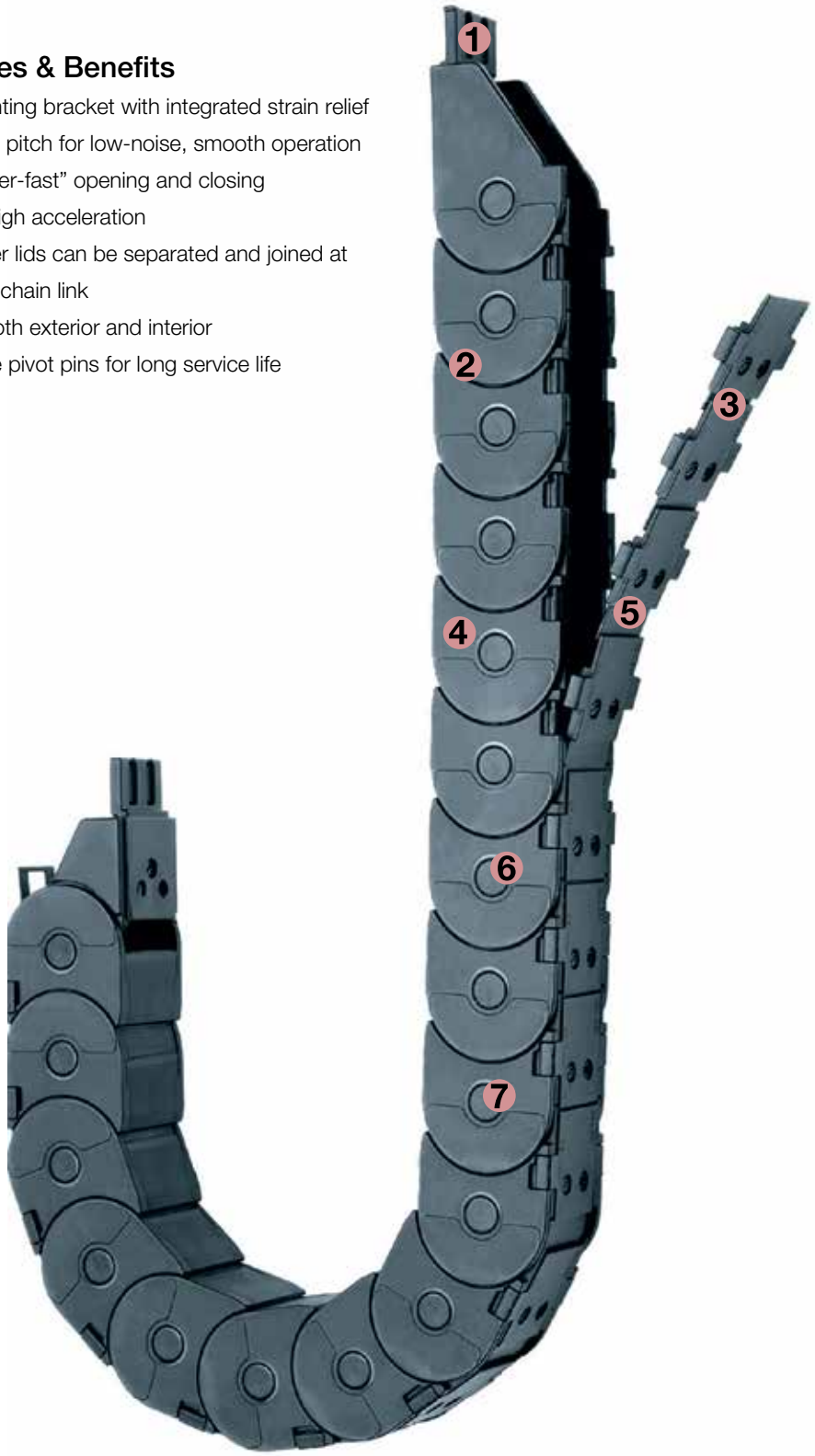
Low-noise

## Assembly Tips

"Zipper-fast" opening and closing

## Features & Benefits

1. Mounting bracket with integrated strain relief
2. Small pitch for low-noise, smooth operation
3. "Zipper-fast" opening and closing
4. For high acceleration
5. Zipper lids can be separated and joined at each chain link
6. Smooth exterior and interior
7. Large pivot pins for long service life




## Usage Guidelines

- If extremely quick, zipper-like access to cables is required
- If chip protection is required
- If quick, easy insertion of cables with preassembled connectors is required
- If aesthetic design is required

- If cable installation without opening lids is possible
  ➤ **Series E16 E-Z Chain**

## Order Example: Complete E-Chain®

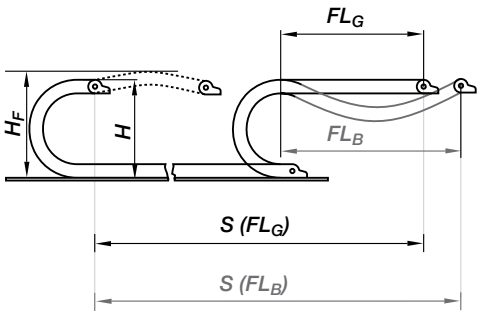
Please indicate chain length or number of links. Example:

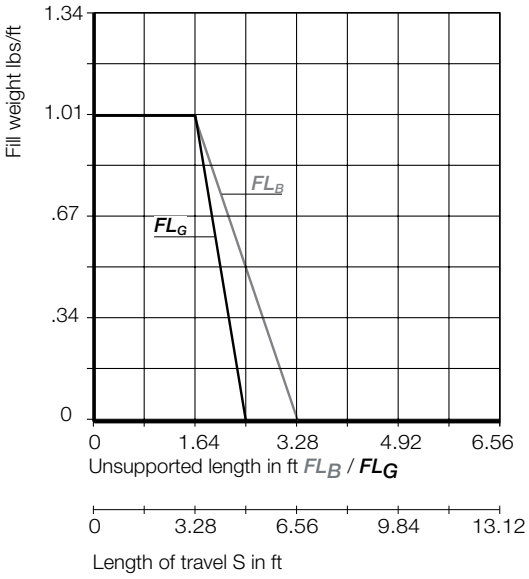
| | |
|---|---|
| 3.28 ft (1 m) **R17-025-063-0** | **E-Chain®** |
| With 2 separators **R172** assembled every 2nd link | **Interior Separation** |
| 1 Set **117-025-12PZ** | **Mounting Bracket** |

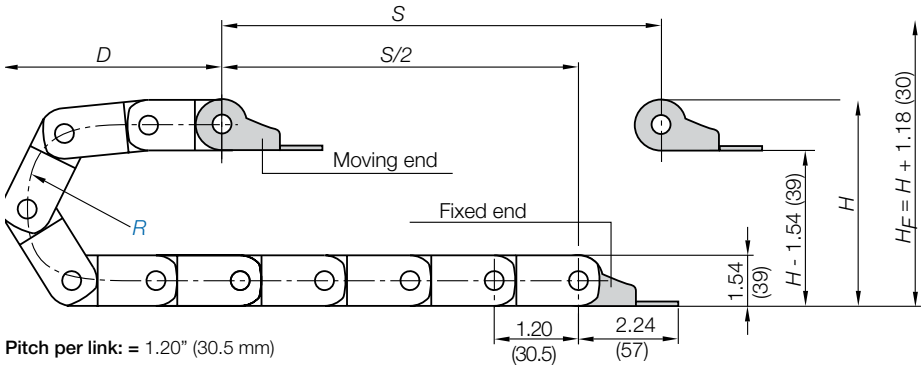
# E-Chain System® E2 Tubes
# R17
# Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.18$ **in. (30 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
|---|---|---|---|---|
| H | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 4.53 (115) | 5.12 (130) | 6.10 (155) | 7.09 (180) |
| K | 10.83 (275) | 12.01 (305) | 15.55 (395) | 18.70 (475) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + safety buffer
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

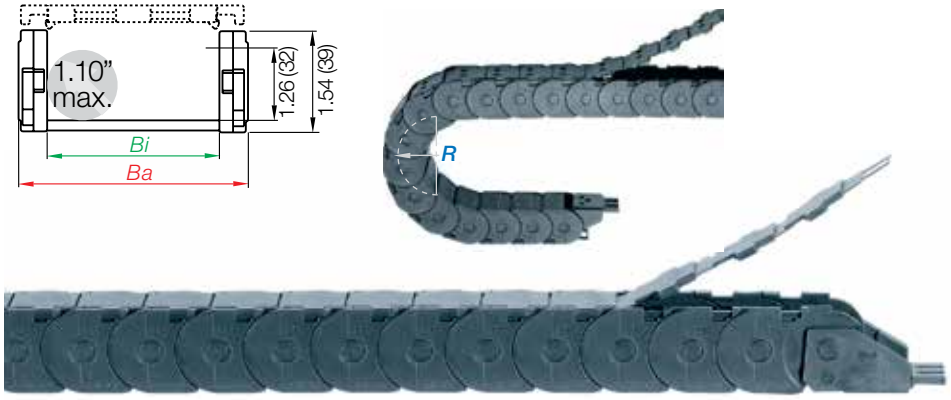
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# R17

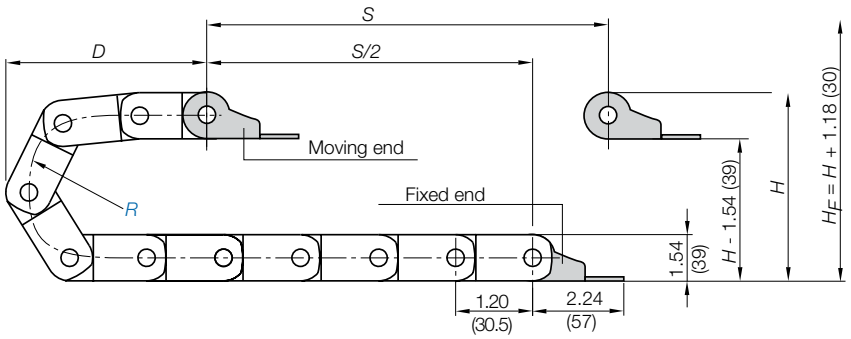
## Series R17 - E-Tube snap-open along the outer radius




**Part Number Structure**

R17- 025- 063- 0

- Color - Black
- Bending radius
- Width
- Series




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10 (33)
**For center mount applications:**
**Chain length =** $_{-}^{S}/_{2} + K$

Supplement part number with required radius. Example: R17-025-063-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10 (33)

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| R17-015-☐-0 | .59 (15) | 1.02 (26) | ≈ 0.35 (0.52) |
| R17-025-☐-0 | .98 (25) | 1.93 (49) | ≈ 0.40 (0.59) |
| R17-063-☐-0 | 2.48 (63) | 2.99 (76) | ≈ 0.42 (0.83) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R17-025-063-0

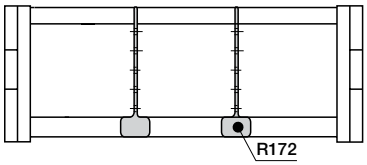
| | 063 | 075 | 100 | 125 |
|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
| H | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 4.53 (115) | 5.12 (130) | 6.10 (155) | 7.09 (180) |
| K | 10.83 (275) | 12.01 (305) | 15.55 (395) | 18.70 (475) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

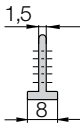
# E-Chain System® E2 Tubes
# R17
# Interior Separation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .




Vertical separator R171



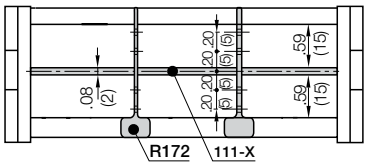

**Vertical Separator**

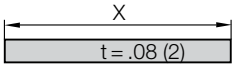
| | |
|---|---|
| Unassembled | **Part No. R171** |
| Assembled | **Part No. R172** |

- **Standard separator R171 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

## Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.




**Shelves 110-XX**
Shelves can be inserted at 5 different heights in .20” (5mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 0.59 | (15) | **110-15** | **111-15** |
| 0.98 | (25) | **110-25** | **111-25** |
| 1.50 | (38) | **110-38** | **111-38** |
| 2.68 | (63) | **110-63** | **111-63** |
| 3.15 | (80) | **110-80** | **111-80** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

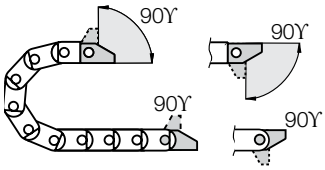
# E-Chain System® E2 Tubes
# Series R17
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

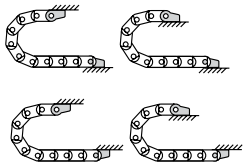
## Option: locking

- One piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without integrated strain relief tiewrap plates

**Moving end**
**117...1P(Z)**

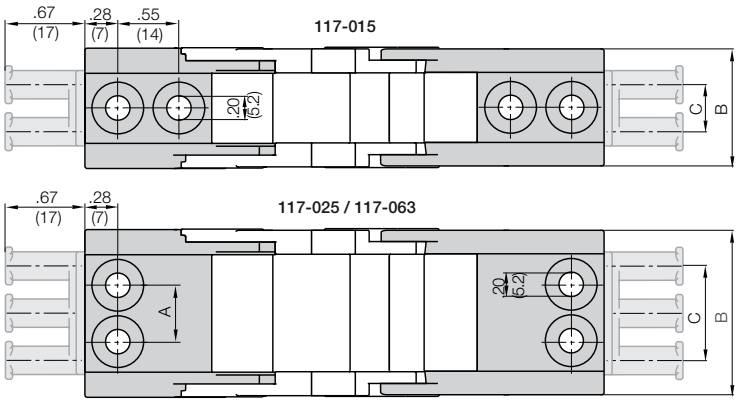



**Fixed end**
**117...2P(Z)**



Possible installation configurations -

**117...1P(Z)**
**Moving end**




**117...2P(Z)**
**Fixed end**

**Part Number Structure**

| 117- | 015- | 12 | PZ |
|---|---|---|---|

- PZ - With tiewrap plate
  P - Without tiewrap plate
- Full set
- Width index
- Mounting brackets for selected chain type

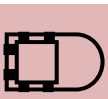
**Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with** 12

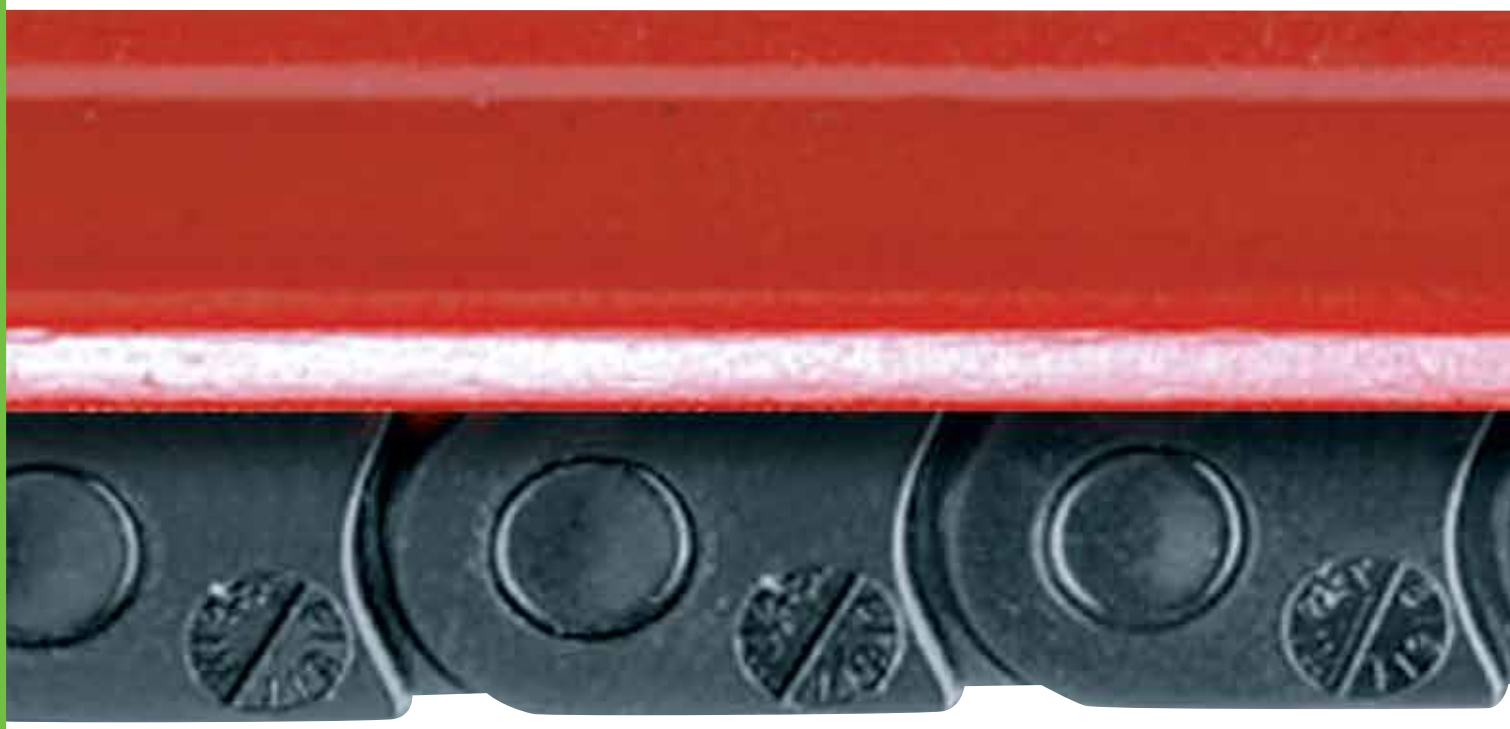
**Part No. Full Set** (pivoting)
**with Tiewrap Plate**
**Series R17 with 25mm inner width**
**117-025-12PZ**

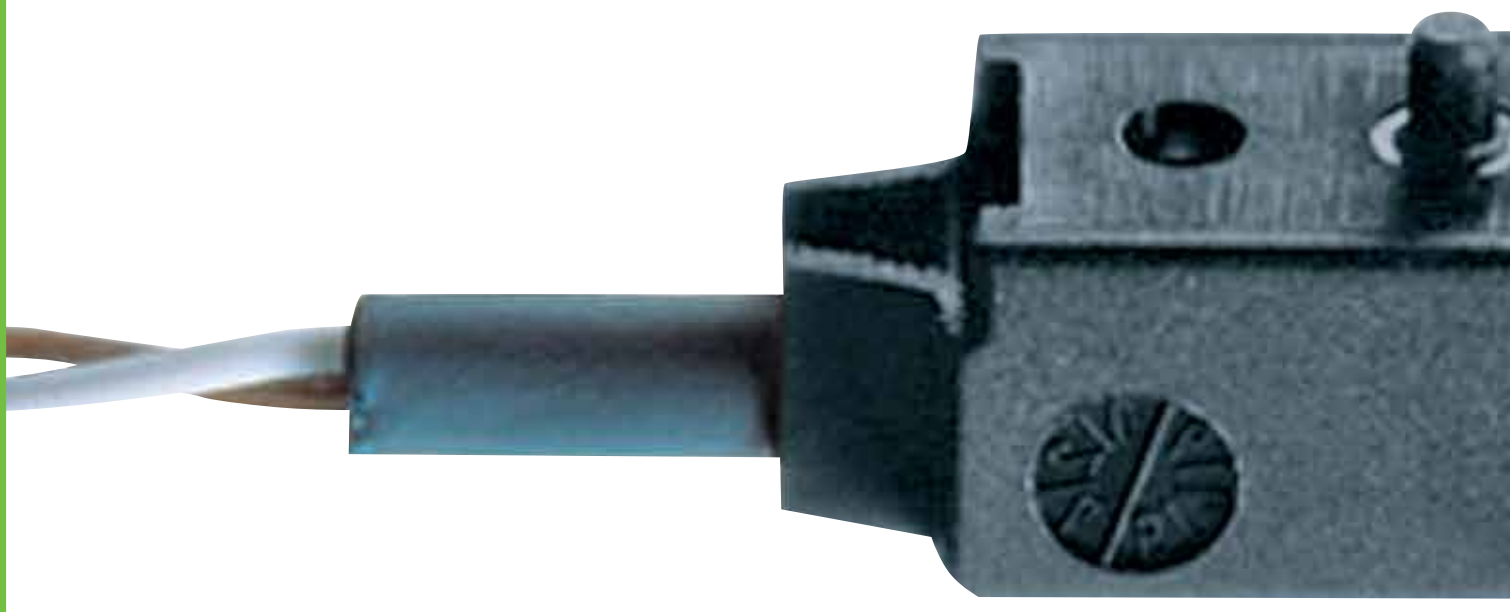
**Part No. Full Set** (pivoting)
**without Tiewrap Plate**
**Series R17 with 25 mm inner width**
**117-025-12P**

**Full set, for both ends:**
117- 025- 12 PZ Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
117- 025- 12 PZ Mounting bracket **with bore + tiewrap plate**
117- 025- 12 PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimension B in. | (mm) | Dimension C in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|---|---|
| R17-015 | **117-015-12PZ** | **117-015-12P** | – | – | 1.01 | (25.7) | .39 | (10) | 2 |
| R17-025 | **117-025-12PZ** | **117-025-12P** | .47 | (12) | 1.41 | (35.7) | .79 | (20) | 3 |
| R17-063 | **117-063-12PZ** | **117-063-12P** | 1.89 | (48) | 2.91 | (73.7) | 1.18 | (30) | 6 |







igus®

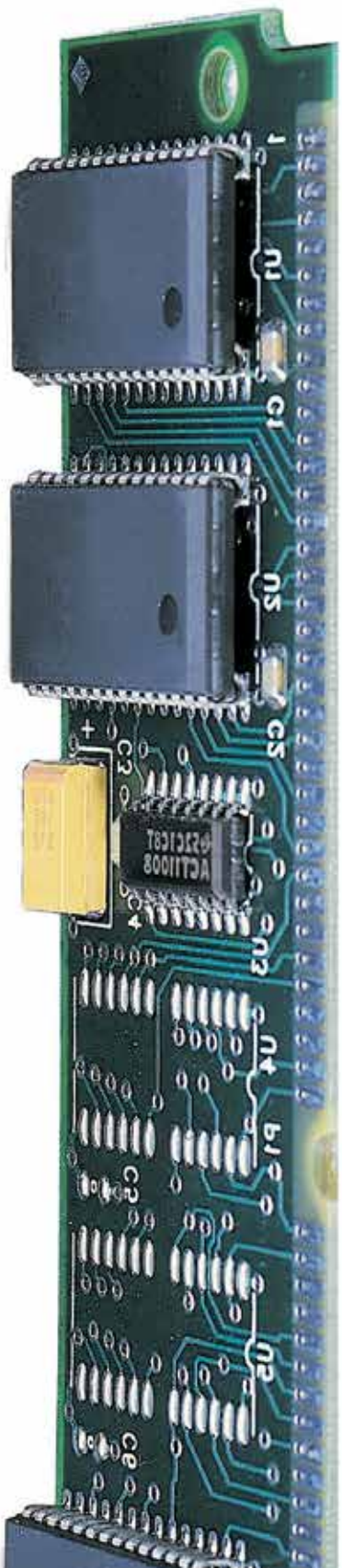
# E2 Micro

# E2 Micro igus®' smallest E-Chain® cable carrier

**System E2 Micro**—considered one of the world's smallest cable carriers—can fit into almost any application, including those with tight space restrictions and small bending radii. System E2 Micro is cost-effective and available in many styles and sizes with various accessory options.

### Typical industries and applications

- Models (Micro E-Chains®)
- Automatic doors
- Vehicles
- Measuring machines
- Electric equipment
- Pick and place robots
- General machinery



iF-Design Award -
for E2 Micro - Series 05

Special equipment: Electrically conductive
ESD/ATEX version upon request

IPA Qualification Certificate:
Cleanroom test upon request

UL94 - V2 class for Series 03 and
UL94 - HB class for all other Micro Series

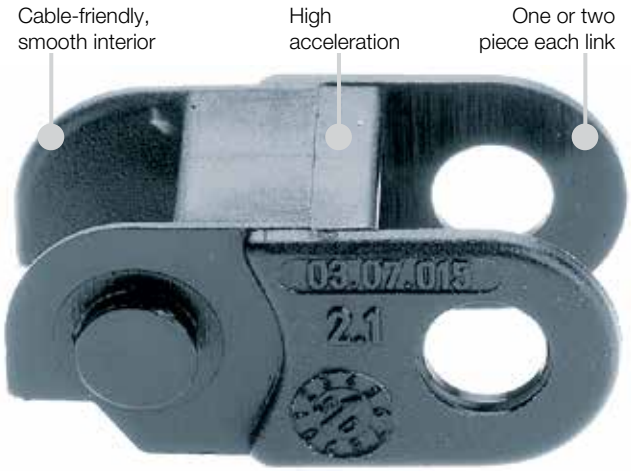
Smallest inner heights 5 mm:
Series 03 E2 Micro

igus® E2 micro E-Chains® are robust for standing applications

Sliding door in train - UL 94-V2 version

Sliding door in subway with igus®
Chainflex® CF9 cable for smallest spaces

# E-Chain System® E2 Micro Selection Guide




- One-piece E-Chains®, from inner height of .20 (5 mm)
- High torsional rigidity
- Smallest inner heights and bending radii
- Mounting brackets with optional strain relief
- Small pitch for smooth running
- Cable-friendly, smooth interior
- Low weight
- Large pins for longer life
- Space-saving ratio of inner-to-outer dimensions
- To find more technical data about the material, chemical resistance and temperatures ➤ **Design, Chapter 1**

## E2 Micro - one-piece E-Chains®

### One-piece, non snap-open

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **03** | .20 | (5) | .20-.39 | (5-10) | .34-.54 | (8.7-13.7) | .31 | (8) | .39-1.10 | (10-28) |
| **04** | .28 | (7) | .28-1.18 | (7-30) | .47-1.38 | (12-35) | .39 | (10) | .59-1.89 | (15-48) |
| **05** | .39 | (10) | .24-2.52 | (6-64) | .39-2.68 | (10-68) | .47 | (12) | .71-1.50 | (18-38) |
| **045** | .41 | (10.3) | .24-2.52 | (6-64) | .47-2.76 | (12-70) | .49 | (12.5) | .71-1.50 | (18-38) |
| **06**[1)] | .41 | (10.5) | .24-2.52 | (6-64) | .49-2.80 | (12.5-71) | .59 | (15) | .71-1.50 | (18-38) |
| **E2C-10** | .42 | (10.6) | .24-1.97 | (6-50) | .53-2.26 | (13.4-57.4) | .59 | (15) | .71-1.50 | (18-38) |
| **E2C-15** | .59 | (14.9) | .39-1.97 | (10-50) | .70-2.28 | (17.8-57.8) | .76 | (19.3) | 1.10-2.95 | (28-75) |
| **08**[2)] | .59 | (15) | .39-1.97 | (10-50) | .72-2.29 | (18.2-58.2) | .76 | (19.3) | .98-1.89 | (25-48) |

## E2 Micro - two-piece E-Chains®

### Snap-open along the inner radius

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E2i-10** | .41 | (10.3) | .63-1.57 | (16-40) | .89-1.85 | (22.5-47.0) | .59 | (15) | .71-1.50 | (18-38) |
| **E2i-15** | .56 | (14.3) | .63-1.57 | (16-40) | .95-1.90 | (24.2-48.2) | .76 | (19.3) | 1.10-1.89 | (28-48) |

## E2 Micro - two-piece E-Chains®

### Snap-open along the outer radius

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E2-10** | .40 | (10.1) | .24-1.97 | (6-50) | .53-2.26 | (13.4-57.4) | .59 | (15) | .71-1.50 | (18-38) |
| **B07**[3)] | .41 | (10.3) | .63-1.57 | (16-40) | .89-1.85 | (22.5-47.0) | .59 | (15) | .71-1.50 | (18-38) |
| **B09**[4)] | .56 | (14.3) | .63-1.57 | (16-40) | .95-1.90 | (24.2-48.2) | .76 | (19.3) | 1.10-1.89 | (28-48) |
| **E2-15** | .57 | (14.4) | .39-1.97 | (10-50) | .70-2.28 | (17.8-57.8) | .76 | (19.3) | 1.10-2.95 | (28-75) |

For new designs we recommend E2 micro new generation series **1)** E2C-10, **2)** E2C-15, **3)** E2-10, **4)** E2-15

# E-Chain System® E2 Micro
# Assembly Instructions

## **Assembling** | E2 micro

Twist and click

## **Separating** | E2 micro

Twist and separate

## **Specialty** | E2 micro

igus® Micro E-Chains® - for smallest bending radii with Chainflex® CF98 and CF99 - 4 x d!

## **Specialty** | B07 and B09

B07 and B09: two-piece - Snap-open along outer radius with film-hinge

# E-Chain System® E2 Micro Series 03

.20

## Price Index

Series 03

## Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Smallest inner height .20" (5 mm)

Flammability Class VDE 0304 IIC UL94 V2

## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E03 E-Z Chain**

## Features & Benefits

1. Mounting bracket with integrated strain relief
2. One-piece, non snap-open E-Chain®
3. Very lightweight - low price
4. igus® smallest E-Chain® - interior dimensions .20" x .20" (5 x 5 mm)
5. Dirt-repellant exterior
6. Available as E-Z style E-Chain, See Chapter 2
7. Patented push-button design for better stability

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

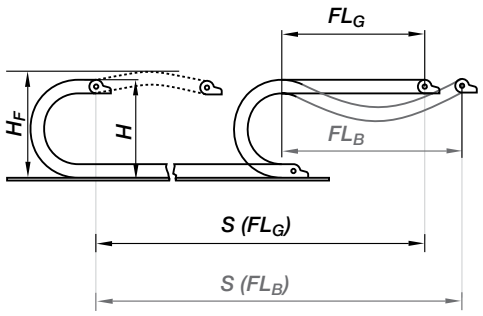
| | |
|---|---|
| 3.28 ft (1 m) **03-05-028-0** | **E-Chain®** |
| 1 Set **03-05-12Z** | **Mounting Bracket** |

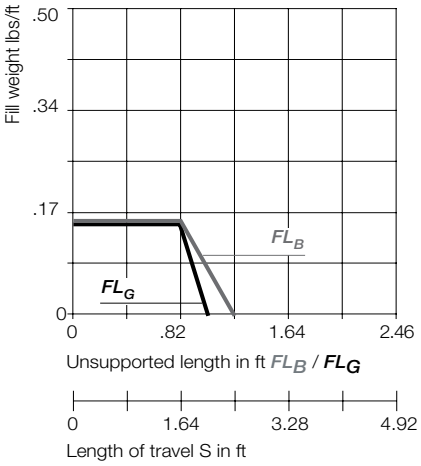
# E-Chain System® E2 Micro Series 03 Installation Dimensions

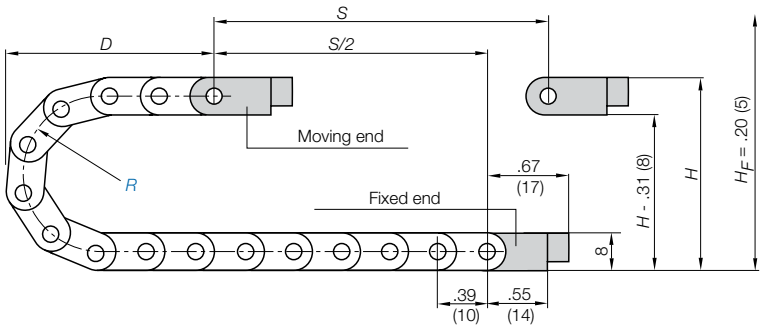
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .39" (10 mm)
**Links per ft (m): =** 30.47 (100)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .20 in. (5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .39 (010) | .47 (012) | .59 (015) | .71 (018) | 1.10 (028) |
|---|---|---|---|---|---|
| H | 1.10 (28) | 1.26 (32) | 1.50 (38) | 1.73 (44) | 2.52 (64) |
| D | 1.14 (29) | 1.22 (31) | 1.34 (34) | 1.46 (37) | 1.85 (47) |
| K | 2.17 (55) | 2.36 (60) | 2.76 (70) | 3.15 (80) | 4.33 (110) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

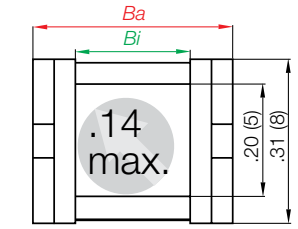
| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

## Technical Data

Details of material properties
➤ Chapter 1

# E-Chain System® E2 Micro
# Series 03

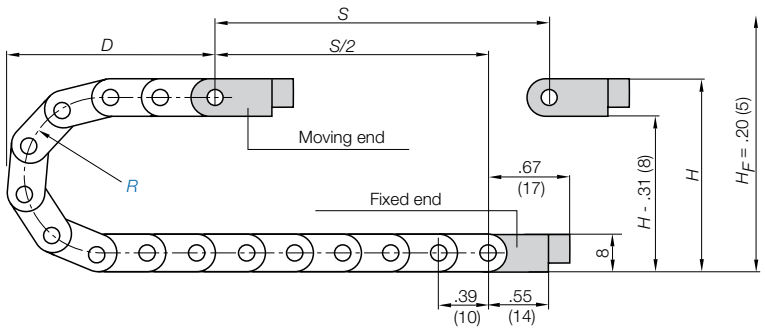
## Series 03 - E-Chain® non snap-open



**Part Number Structure**

| 03- | 05- | 028- | 0 |
|---|---|---|---|

- 0 — Color - Black
- 028 — Bending radius
- 05 — Width
- 03 — Series




Supplement part number with required radius. Example: 03-05-[028]-0
Pitch: .39 in. (10 mm) per link links/ft (m) = 30.47 (100)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 03-05- | ☐ | -0 | .20 (5) | .34 (8.7) | ≈ 0.027 (0.04) |
| 03-07- | ☐ | -0 | .28 (7) | .42 (10.7) | ≈ 0.034 (0.05) |
| 03-10- | ☐ | -0 | .39 (10) | .54 (13.7) | ≈ 0.040 (0.06) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 03-05-[028]-0

| | 010 | 012 | 015 | 018 | 028 |
|---|---|---|---|---|---|
| *R* | .39 (010) | .47 (012) | .59 (015) | .71 (018) | 1.10 (028) |
| H | 1.10 (28) | 1.26 (32) | 1.50 (38) | 1.73 (44) | 2.52 (64) |
| D | 1.14 (29) | 1.22 (31) | 1.34 (34) | 1.46 (37) | 1.85 (47) |
| K | 2.17 (55) | 2.36 (60) | 2.76 (70) | 3.15 (80) | 4.33 (110) |

0=Standard color black. For other colors see Chapter 1

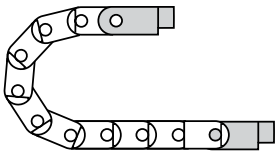
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series 03
# Mounting Brackets

## Polymer, one-piece

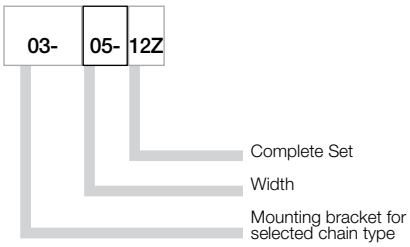
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Rapid installation through adaptor plate

**Moving end**
**03 ...1Z**

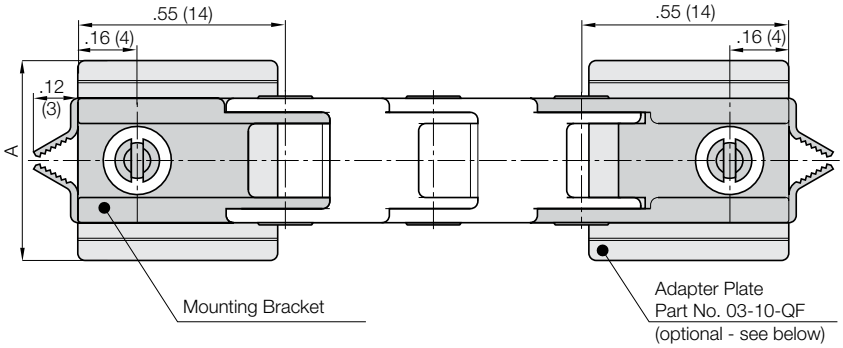


**Fixed end**
**03...2Z**

**Part Number Structure**



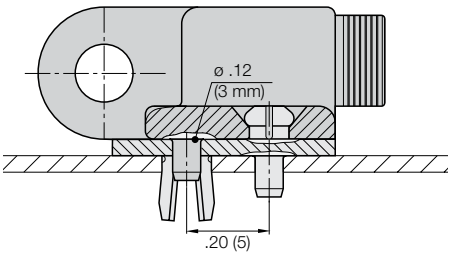

**Full set, for both ends:**
03- 05- 12Z Full set, **each part with pin/bore**
**Single-part order:**
03- 05- 1Z Mounting bracket **with bore**
03- 05- 2Z Mounting bracket **with pin**




| Chain Width | Part No. Full Set | Dimension A in. | (mm) |
|---|---|---|---|
| -05 | 03-05-12Z | .34 | (8.7) |
| -07 | 03-07-12Z | .42 | (10.7) |
| -10 | 03-10-12Z | .54 | (13.7) |

## Additional Accessories

**03-10-QF = Adapter plate for all sizes**
The adapter has broken edges, so that it can be adapted to the respective chain width. It is not absolutely necessary for attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro Series 04

.28

## Price Index

Series 04

## Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

## Assembly Tips

Easy to assemble and disassemble

## Features & Benefits

1. Very lightweight - low price
2. One-piece, non snap-open E-Chain®
3. Small E-Chain® - interior dimensions .28” x .28” (7 x 7 mm)
4. Dirt-repellant exterior

## Usage Guidelines

- If quieter operation is required
- If cost is a factor
- If snap-open links are not necessary

- If snap-open links are required
  ➤ **Series 047 “Zipper”**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E04 E-Z Chain**

## Order Example: Complete E-Chain®

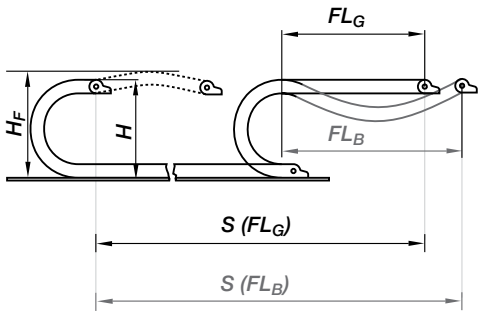
Please indicate chain length or number of links. Example:

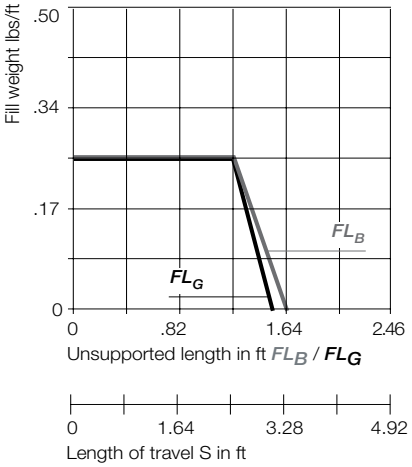
| | |
|---|---|
| 3.28 ft (1 m) **04-07-038-0** | **E-Chain®** |
| 1 Set **040-07-12** | **Mounting Bracket** |

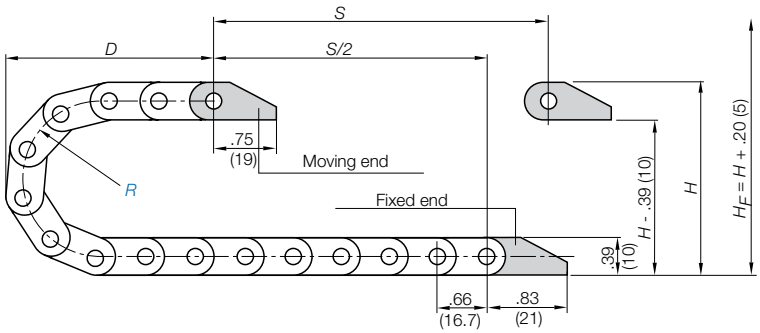
# E-Chain System® E2 Micro Series 04 Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** .66" (16.7 mm)
**Links per ft (m): =** 18.28 (60)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H* + .20 in. (5 mm)** (with .067 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .59 (015) | .71 (018) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|---|---|
| H | 1.57 (40) | 1.81 (46) | 2.60 (66) | 3.39 (86) | 4.17 (106) |
| D | 1.77 (45) | 1.89 (48) | 2.28 (58) | 2.68 (68) | 3.07 (78) |
| K | 3.35 (85) | 3.54 (90) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

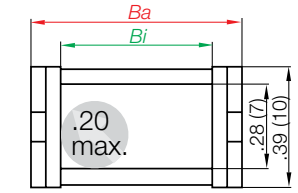
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series 04

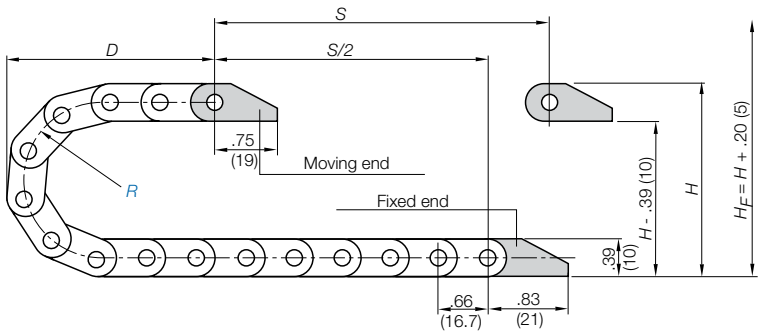
## Series 04 - E-Chain® non snap-open



**Part Number Structure**

| 04- | 07- | 038- | 0 |
|---|---|---|---|

- 0 – Color - Black
- 038 – Bending radius
- 07 – Width
- 04 – Series




Supplement part number with required radius. Example: 04-07-038 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.28 (60)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 04-07- | ☐ | -0 | .28 (7) | .47 (12) | ≈ 0.047 (0.07) |
| 04-10- | ☐ | -0 | .39 (10) | .59 (15) | ≈ 0.053 (0.08) |
| 04-16- | ☐ | -0 | .63 (16) | .83 (21) | ≈ 0.060 (0.09) |
| 04-20- | ☐ | -0 | .79 (20) | .98 (25) | ≈ 0.067 (0.10) |
| 04-30- | ☐ | -0 | 1.18 (30) | 1.38 (35) | ≈ 0.073 (0.11) |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 04-07-038 -0

| | 015 | 018 | 028 | 038 | 048 |
|---|---|---|---|---|---|
| R | .59 (015) | .71 (018) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H | 1.57 (40) | 1.81 (46) | 2.60 (66) | 3.39 (86) | 4.17 (106) |
| D | 1.77 (45) | 1.89 (48) | 2.28 (58) | 2.68 (68) | 3.07 (78) |
| K | 3.35 (85) | 3.54 (90) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

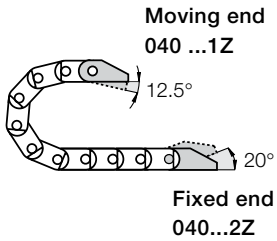
0=Standard color black. For other colors see Chapter 1

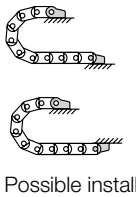
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series 04
# Mounting Brackets

## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible

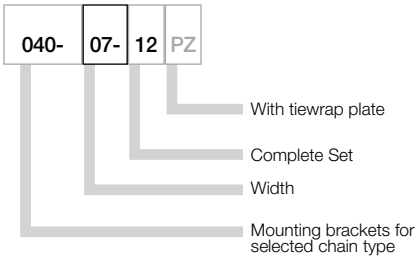


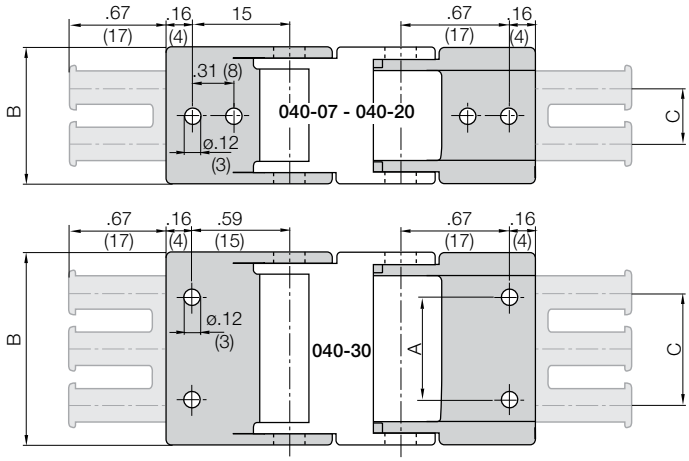




Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**

040-07-12PZ Full set, **each part with pin/bore**

**Single-part order:**

040-07-1PZ Mounting bracket **with bore**

040-07-2PZ Mounting bracket **with pin**

| Chain Type | Part No. Full set without Tiewrap Plate | Part No. Full set with Tiewrap plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Dimension C in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|---|---|
| 04-07 | **040-07-12** | **040-07-12PZ** | — | — | .47 | (12) | — | — | 1 |
| 04-10 | **040-10-12** | **040-07-12PZ** | — | — | .59 | (15) | — | — | 1 |
| 04-16 | **040-16-12** | **040-07-12PZ** | — | — | .83 | (21) | .39 | (10) | 2 |
| 04-20 | **040-20-12** | **040-07-12PZ** | — | — | .98 | (25) | .39 | (10) | 2 |
| 04-30 | **040-30-12** | **040-07-12PZ** | .87 | (22) | 1.38 | (35) | .79 | (20) | 3 |

## Additional accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
Only available for the 040-07 E-Chain - **Part No. 040-07-QS**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro Series 05

.39

## Price Index

Series 05

## Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 V2

iF-Design Award - for E2 micro - Series 05

## Assembly Tips

East to assemble and disassemble

## Features & Benefits

1. Very lightweight - ideal for low inertia applications
2. iF-Design Award
3. One-piece, non snap-open E-Chain®

## Usage Guidelines

- If lightweight construction is required
- If minimal height and width dimensions are required
- If cost is a factor

- If snap-open links are necessary
  ➤ **Series 07 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

## Order Example: Complete E-Chain®

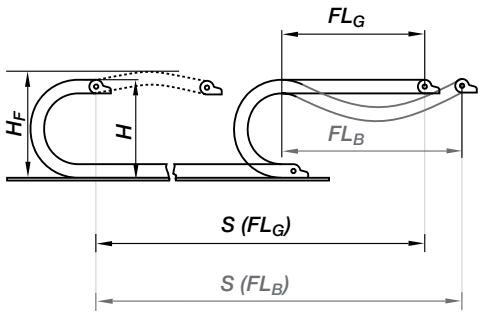
Please indicate chain length or number of links. Example:

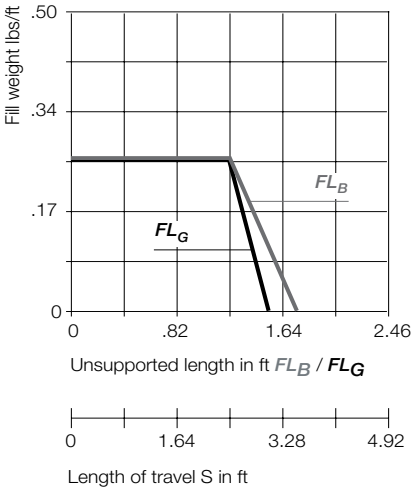
| | |
|---|---|
| 3.28 ft (1 m) **05-20-038-0** | **E-Chain®** |
| 1 Set **050-20-12** | **Mounting Bracket** |

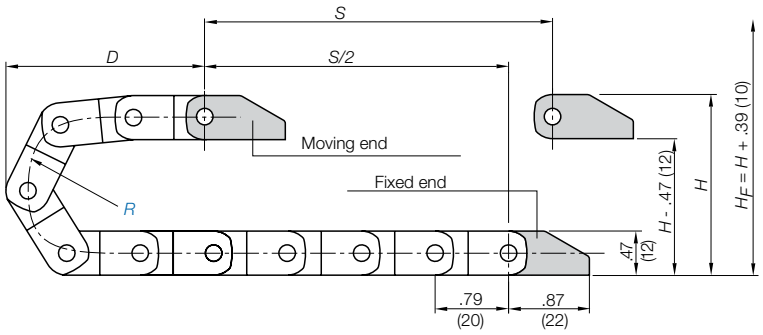
# E-Chain System® E2 Micro Series 05 Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H | 1.89 (48) | 2.68 (68) | 3.46 (88) |
| D | 2.13 (54) | 2.52 (64) | 2.91 (74) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series 05

igus® E-Chain System®
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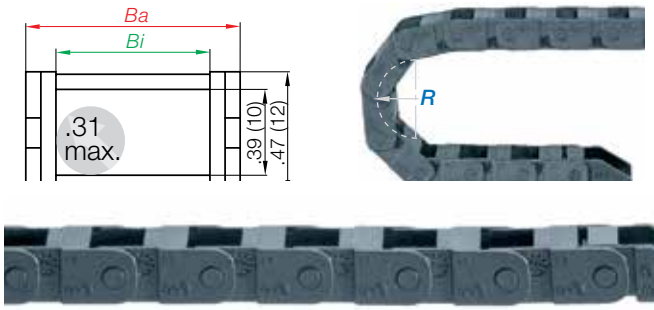
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 05 - E-Chain® non snap-open

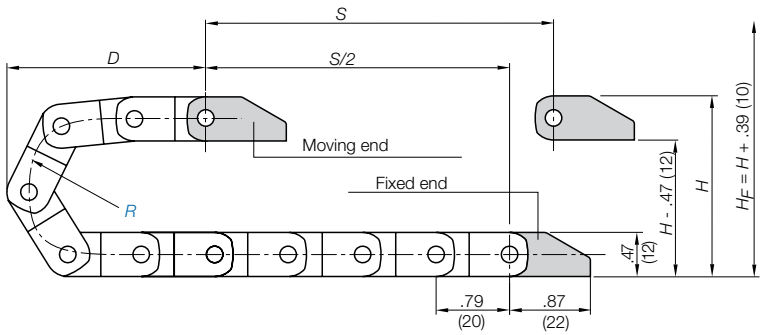





Part Number Structure

| 05- | 20- | 038- | 0 |
|---|---|---|---|

Color - Black
Bending radius
Width
Series




Supplement part number with required radius. Example: 05-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 05-06- (05-1) | [ ] | -0 | .28 (6) | .39 (10) | ≈ 0.040 (0.06) |
| 05-10- (05-2) | [ ] | -0 | .39 (10) | .55 (14) | ≈ 0.047 (0.07) |
| 05-16- (05-3) | [ ] | -0 | .63 (16) | .79 (20) | ≈ 0.047 (0.07) |
| 05-20- (05-4) | [ ] | -0 | .79 (20) | 94 (24) | ≈ 0.054 (0.08) |
| 05-30- (05-5) | [ ] | -0 | 1.18 (30) | 1.34 (34) | ≈ 0.060 (0.09) |
| 05-64- | [ ] | -0 | 2.52 (64) | 2.68 (68) | ≈ 0.128 (0.19) |

Choose from the radii below for all of the above sizes
Radius (mm) Example: 05-20-[038]-0

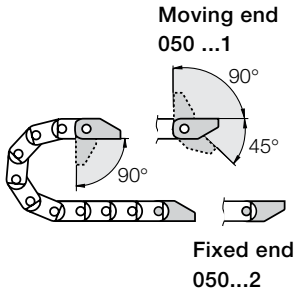
| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H | 1.89 (48) | 2.68 (68) | 3.46 (88) |
| D | 2.13 (54) | 2.52 (64) | 2.91 (74) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

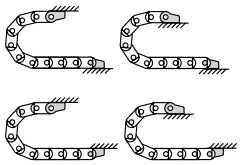
0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Micro
# Series 05
# Mounting Brackets

## Polymer, one-piece

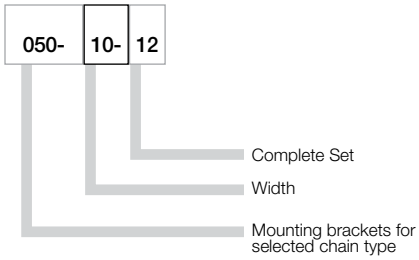
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible

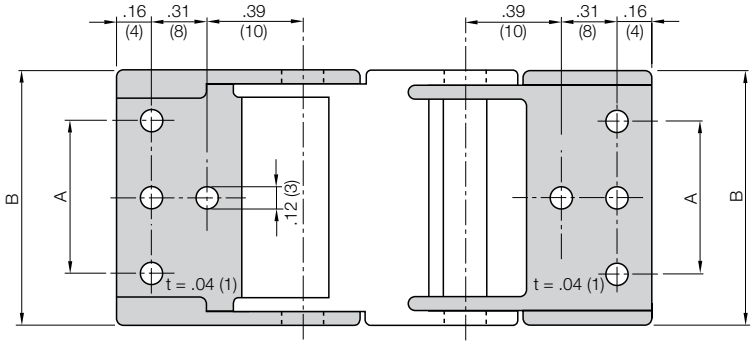




Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**

050- 10- 12 Full set, **each part with pin/bore**

**Single-part order:**

050- 10- 1 Mounting bracket **with bore**

050- 10- 2 Mounting bracket **with pin**

| Chain Type | Part No. Full set | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|
| 05-06 (05-1) | **050-06-12** | — | — | .42 | (10.7) |
| 05-10 (05-2) | **050-10-12** | — | — | .58 | (14.7) |
| 05-16 (05-3) | **050-16-12** | — | — | .81 | (20.7) |
| 05-20 (05-4) | **050-20-12** | — | — | .97 | (24.7) |
| 05-30 (05-5) | **050-30-12** | .87 | (22) | 1.57 | (34.7) |
| 05-64 | **050-64-12** | 2.20 | (56) | 2.70 | (68.7) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series 045

.41

## Price Index

Series 045

## Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

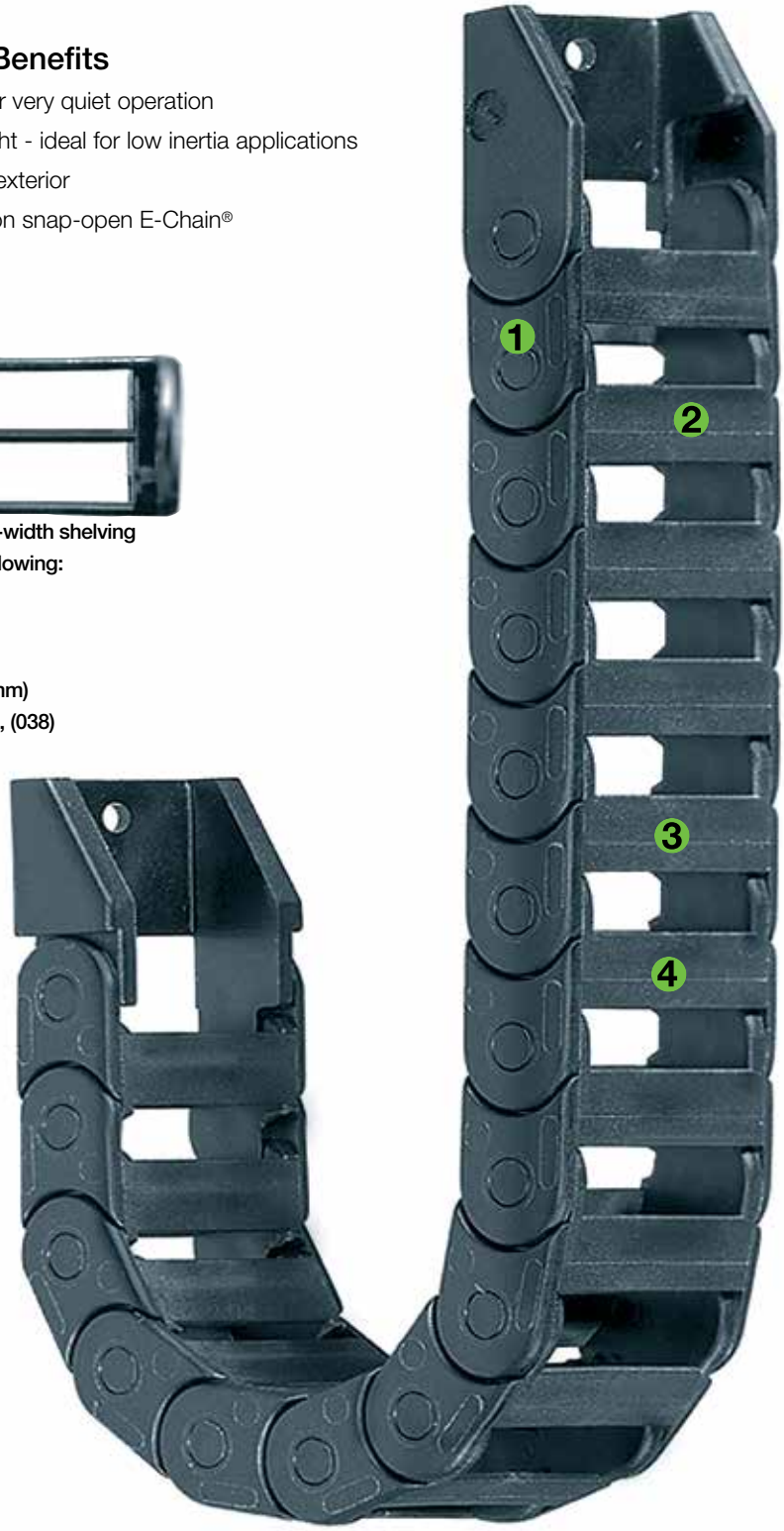
## Assembly Tips

Easy to assemble and disassemble

## Features & Benefits

1. Small pitch for very quiet operation
2. Very lightweight - ideal for low inertia applications
3. Dirt-repellant exterior
4. One-piece, non snap-open E-Chain®

Series 046 with full-width shelving
available for the following:
046-16-018
046-16-028
046-16-038
Width Bi: .63" (16 mm)
Radii R: (018), (028), (038)




## Usage Guidelines

- If very quiet operation is required
- Aesthetic design
- If excellent service life is required
- If cost is a factor
- If small bending radii are required

- If snap-open links are required
  ➤ **Series 047 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E06 E-Z Chain**
- If extra rigidity is required
  ➤ **Series 06 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

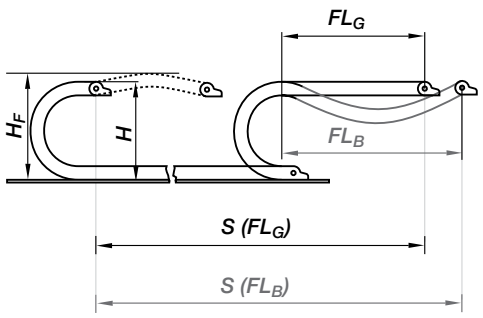
| | |
|---|---|
| 3.28 ft (1 m) **045-20-038-0** | **E-Chain®** |
| 1 Set **0450-20-12** | **Mounting Bracket** |

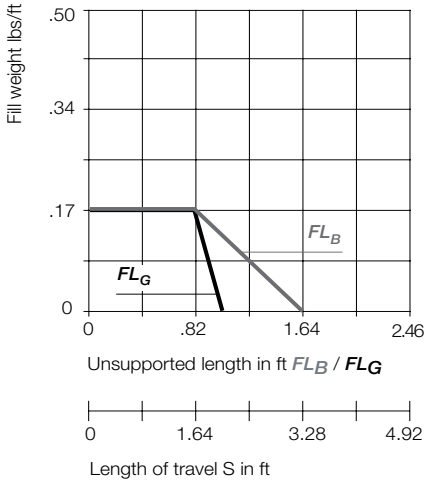
# E-Chain System® E2 Micro
# Series 045
# Installation Dimensions

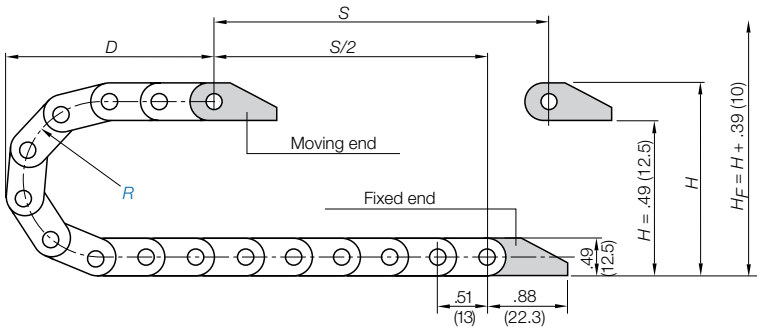


## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** .51" (13 mm)
**Links per ft (m): =** 23.47 (77)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

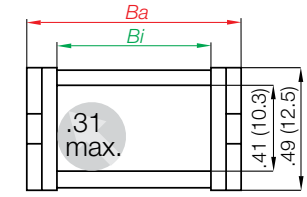
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

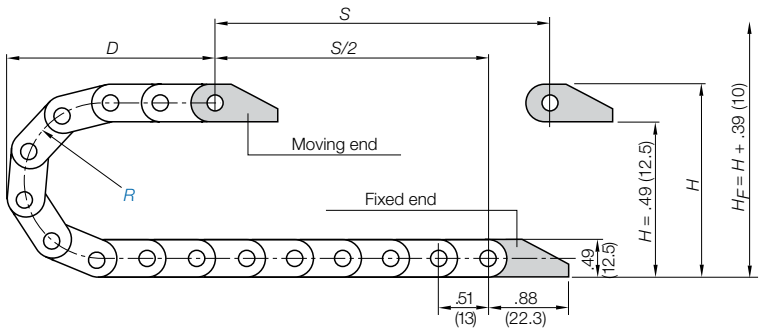
# E-Chain System® E2 Micro
# Series 045

## Series 045 - E-Chain® non snap-open



**Part Number Structure**

| 045- | 20- | 038- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |




Supplement part number with required radius. Example: 045-20-[038]-0
Pitch: .51 in. (13 mm) per link links/ft (m) = 23.47 (77)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 045-06- | ☐ | -0 | .24 (6) | .47 (12) | ≈ 0.060 (0.09) |
| 045-10- | ☐ | -0 | .39 (10) | .63 (16) | ≈ 0.067 (0.10) |
| 045-16- | ☐ | -0 | .63 (16) | .87 (22) | ≈ 0.074 (0.11) |
| 045-20- | ☐ | -0 | .79 (20) | 1.02 (26) | ≈ 0.087 (0.13) |
| 045-30- | ☐ | -0 | 1.18 (30) | 1.42 (36) | ≈ 0.108 (0.16) |
| 045-64- | ☐ | -0 | 2.52 (64) | 2.76 (70) | ≈ 0.128 (0.19) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 045-20-[038]-0

| | 018 | 028 | 038 |
|---|---|---|---|
| *R* | .71 (018) | 1.10 (028) | 1.50 (038) |
| H | 1.91 (48.5) | 2.70 (68.5) | 3.48 (88.5) |
| D | 1.73 (44) | 2.13 (54) | 2.52 (64) |
| K | 3.35 (85) | 4.53 (115) | 5.91 (150) |

0=Standard color black. For other colors see Chapter 1

igus® E-Chain System®
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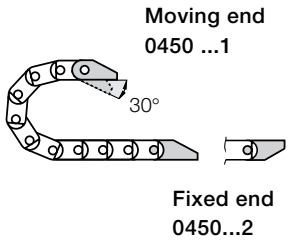
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series 045
# Mounting Brackets

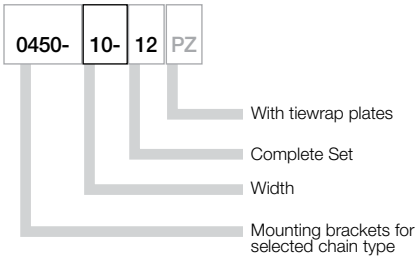
## Polymer, one-piece

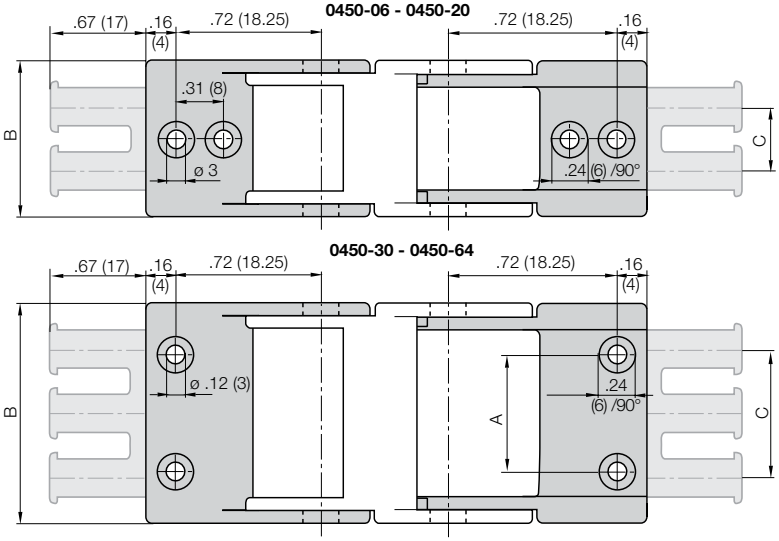
- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible



Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**
0450-10-12-PZ
Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
0450-10-1-PZ
Mounting bracket **with bore + tiewrap plate**
0450-10-2-PZ
Mounting bracket **with pin + tiewrap plate**

| Chain Type | Part No. Full set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Dimensions C in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|---|---|
| 045-06 | **0450-06-12** | **0450-06-12PZ** | — | — | .47 | (12) | — | — | 1 |
| 045-10 | **0450-10-12** | **0450-10-12PZ** | — | — | .63 | (16) | — | — | 1 |
| 045-16 | **0450-16-12** | **0450-16-12PZ** | — | — | .87 | (22) | .39 | (10) | 2 |
| 045-20 | **0450-20-12** | **0450-20-12PZ** | — | — | 1.02 | (26) | .39 | (10) | 2 |
| 045-30 | **0450-30-12** | **0450-30-12PZ** | .87 | (22) | 1.42 | (36) | .79 | (20) | 3 |
| 045-64 | **0450-64-12** | **0450-64-12PZ** | 2.20 | (56) | 2.76 | (70) | 1.97 | (50) | 6 |

## Additional Accessories

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**0450-16-12Q**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series 06

.41

For new designs we recommend E2 Micro “New Generation: E2C-10

## Price Index

Series 06

## Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

East to assemble and disassemble

## Features & Benefits

1. High torsional rigidity
2. Very lightweight - low price
3. Dirt repellant exterior
4. Mounting bracket with integrated strain relief
5. Molded in separator available

## Usage Guidelines

- If high torsional rigidity is required
- If cost is a factor
- If connection options are required - (Quicksnap & Quickfix)

- If snap-open links are required
  ➤ **Series 07 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E06/Z06 E-Z Chain**
- If very quiet operation is required
  ➤ **Series 045 E2 Micro**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **06-20-038-0** | **E-Chain®** |
| 1 Set **060-20-12PZ** | **Mounting Bracket** |

# E-Chain System® E2 Micro
# Series 06
# Installation Dimensions

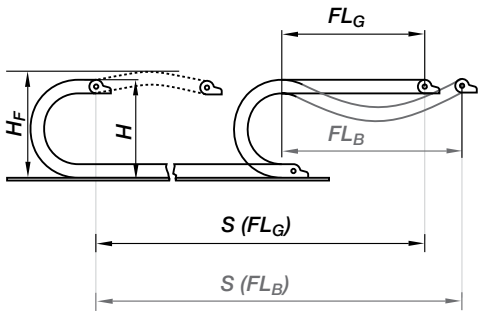


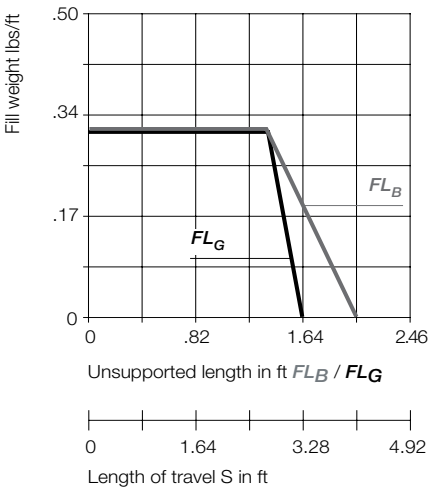
**Short travel, unsupported length**

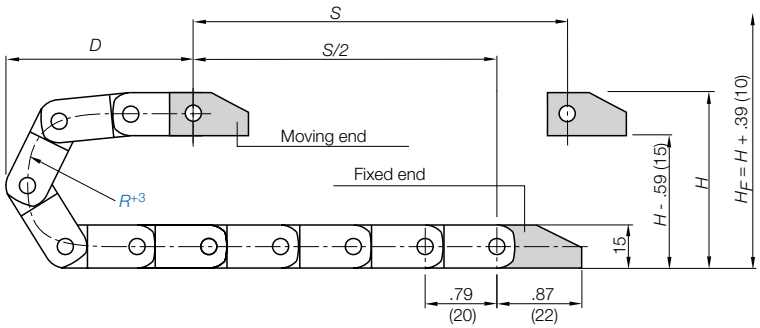
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

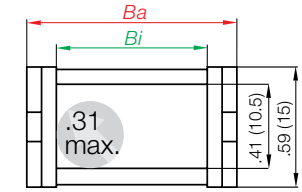
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

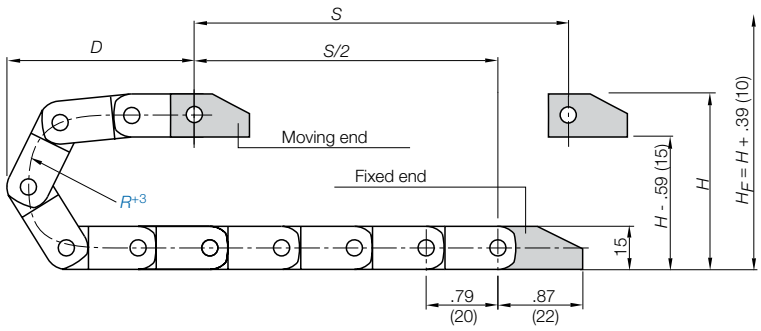
# E-Chain System® E2 Micro
# Series 06

## Series 06 - E-Chain® non snap-open



Part Number Structure

| 06- | 20- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: 06-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 06-06- | ☐ | -0 | .28 (6) | .49 (12.5) | ≈ 0.087 (0.13) |
| 06-10- | ☐ | -0 | .39 (10) | .65 (16.5) | ≈ 0.094 (0.14) |
| 06-16- | ☐ | -0 | .63 (16) | .89 (22.5) | ≈ 0.107 (0.16) |
| 06-20- | ☐ | -0 | .79 (20) | 1.06 (27.0) | ≈ 0.114 (0.17) |
| 06-30- | ☐ | -0 | 1.18 (30) | 1.46 (37.0) | ≈ 0.134 (0.20) |
| 06-40- | ☐ | -0 | 1.57 (40) | 1.85 (47.0) | ≈ 0.155 (0.23) |
| 06-50- | ☐ | -0 | 1.97 (50) | 2.24 (57.0) | ≈ 0.175 (0.26) |
| 06-64- | ☐ | -0 | 2.52 (64) | 2.80 (71.0) | ≈ 0.202 (0.30) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 06-20-038-0

| | 018 | 028 | 038 |
|---|---|---|---|
| *R* | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

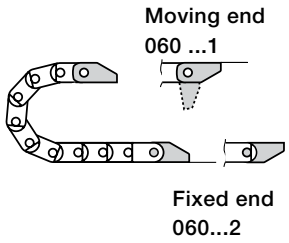
0=Standard color black. For other colors see Chapter 1

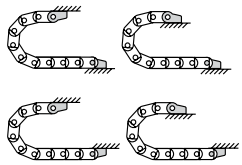
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series 06
# Mounting Brackets

## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates



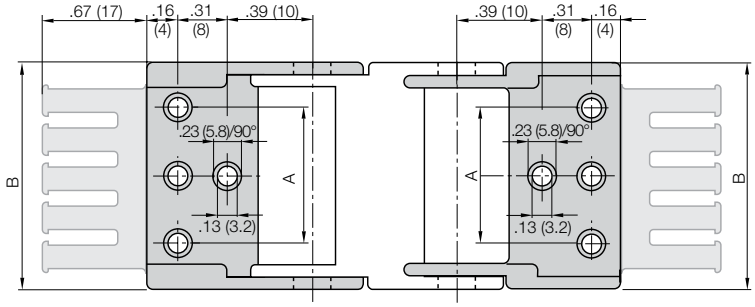


Possible installation configurations -

### Part Number Structure

060- | 20- | 12 | PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 060-: Mounting brackets for selected chain type




**Full set, for both ends:**
060- 20- 12 Full set, **each part with pin/bore**

**Single-part order:**
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

**060-06-12 - 060-20-12:**
Center bores only
**060-30-12 – 060-64-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 06-06 | **060-06-12PZ** | **060-06-12** | — | — | .42 | (12.5) | 1 |
| 06-10 | **060-10-12PZ** | **060-10-12** | — | — | .65 | (16.5) | 1 |
| 06-16 | **060-16-12PZ** | **060-16-12** | — | — | .89 | (22.5) | 2 |
| 06-20 | **060-20-12PZ** | **060-20-12** | — | — | 1.06 | (27.0) | 2 |
| 06-30 | **060-30-12PZ** | **060-30-12** | .87 | (22) | 1.46 | (37.0) | 3 |
| 06-40 | **060-40-12PZ** | **060-40-12** | 1.26 | (32) | 1.85 | (47.0) | 4 |
| 06-50 | **060-50-12PZ** | **060-50-12** | 1.65 | (42) | 2.24 | (57.0) | 5 |
| 06-64 | **060-64-12PZ** | **060-64-12** | 2.20 | (56) | 2.70 | (71.0) | 6 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**060-10-QS**
**060-16-QS**
**060-20-QS**
**060-40-QS**

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**060-10-34QZ**
**060-20-34QZ**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series E2-10/E2i-10/E2C-10

.40 .40 .41

## Price Index

Series E2-10

## Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

## Assembly Tips

Easy to assemble and disassemble

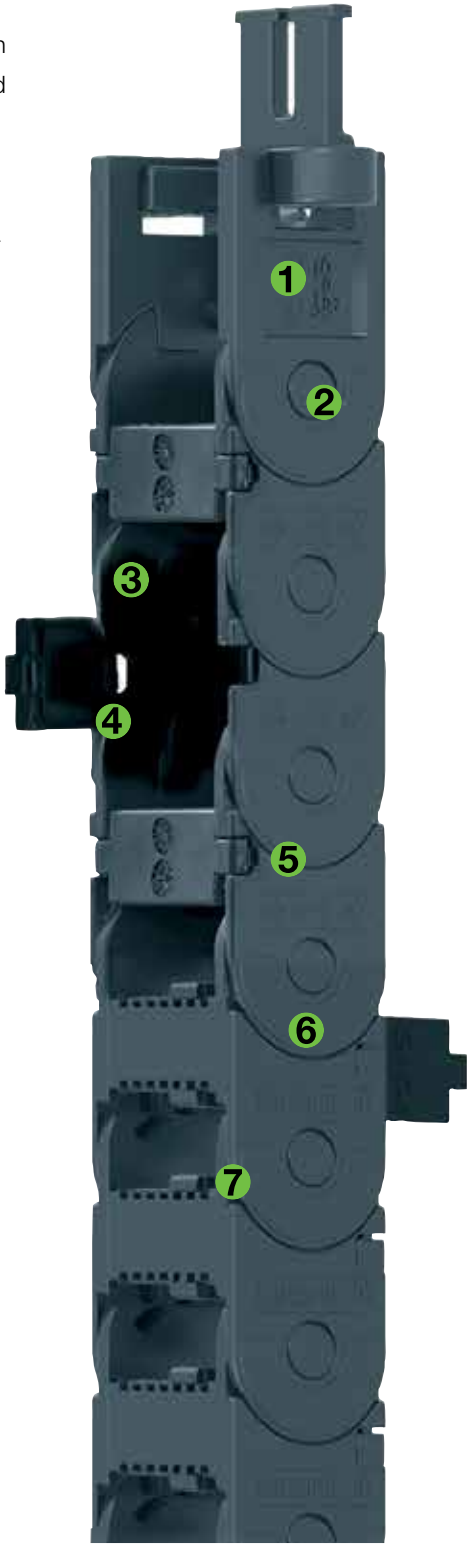
## Usage Guidelines

- When long unsupported lengths and high additional loads are required with a small E-Chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R07 "Zipper"**
- If torsional rigidity is very important
  ➤ **Series E2C-10 E2 Micro**

## Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open in the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

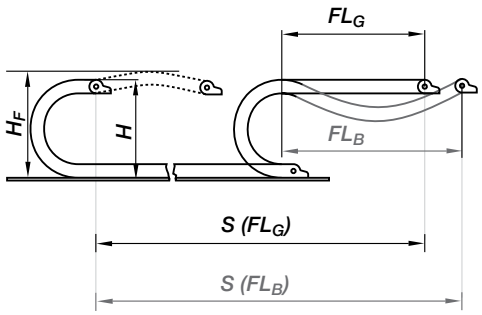
| | |
|---|---|
| 3.28 ft (1 m) **E2-10-20-038-0** | **E-Chain®** |
| 1 Set **E2-100-20-34PZ** | **Mounting Bracket** |

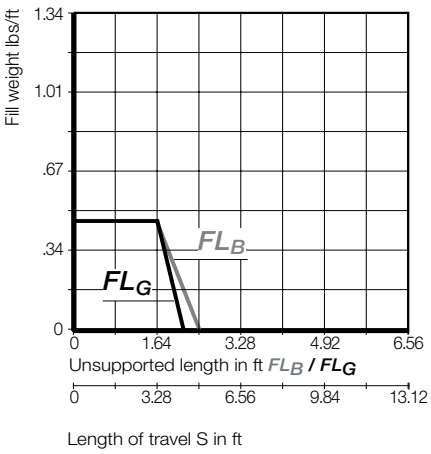
# E-Chain System® E2 Micro Series E2-10/E2i-10/E2C-10 Installation Dimensions

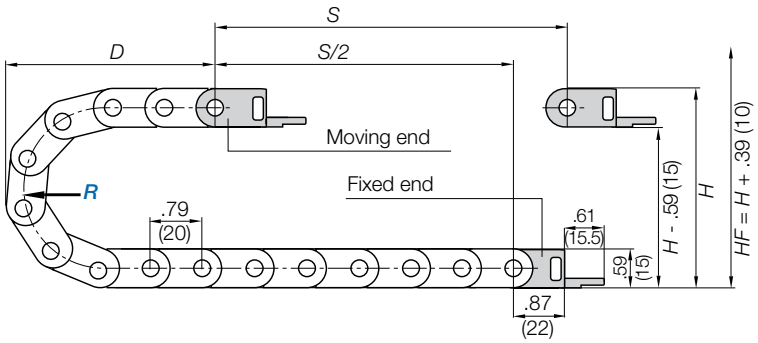


### Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .39$ **in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

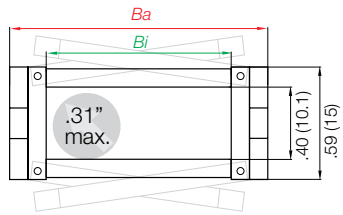
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series E2-10/E2i-10/E2C-10

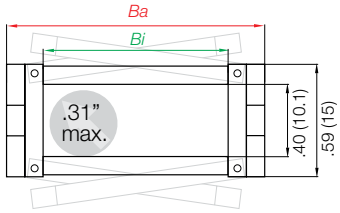
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec




## Series E2-10 - Snap-open along the outer radius from both sides

Part Number Structure

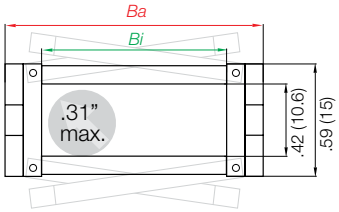
E2-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




## Series E2i-10 - Snap-open along the inner radius from both sides

Part Number Structure

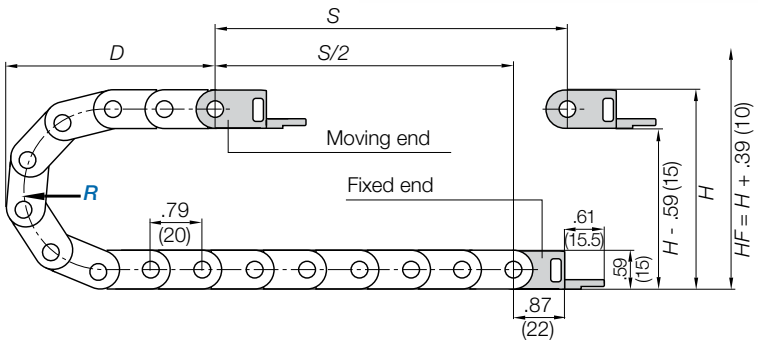
E2i-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




## Series E2C-10 - One-piece, non snap-open

Part Number Structure

E2C-10- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: E2-10-20- 038 -0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

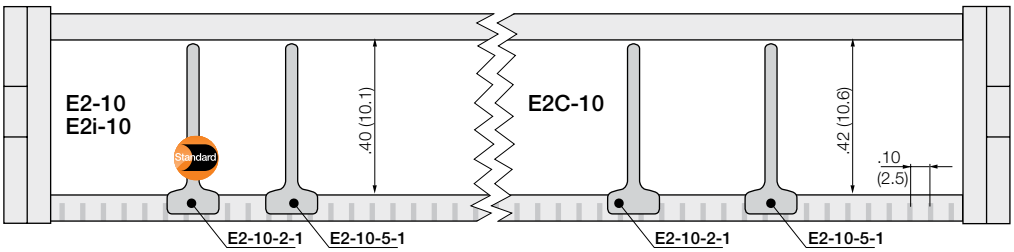
| Snap-open along outer radius | Snap-open along inner radius | One-piece non snap-open | | Bi in. (mm) | Ba in. (mm) | Weight E2-10 lbs/ft (kg/m) | Weight E2i-10 lbs/ft (kg/m) | Weight E2C-10 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| E2-10-06- | E2i-10-06- | E2C-10-06- | -0 | .28 (6) | .53 (13.4) | ≈ 0.087 (0.13) | ≈ 0.087 (0.13) | ≈ 0.094 (0.14) |
| E2-10-10- | E2i-10-10- | E2C-10-10- | -0 | .39 (10) | .69 (17.4) | ≈ 0.094 (0.14) | ≈ 0.094 (0.14) | ≈ 0.094 (0.14) |
| E2-10-16- | E2i-10-16- | E2C-10-16- | -0 | .63 (16) | .92 (23.4) | ≈ 0.107 (0.16) | ≈ 0.107 (0.16) | ≈ 0.107 (0.16) |
| E2-10-20- | E2i-10-20- | E2C-10-20- | -0 | .79 (20) | 1.08 (27.4) | ≈ 0.114 (0.17) | ≈ 0.114 (0.17) | ≈ 0.114 (0.17) |
| E2-10-30- | E2i-10-30- | E2C-10-30- | -0 | 1.18 (30) | 1.47 (37.4) | ≈ 0.128 (0.19) | ≈ 0.128 (0.19) | ≈ 0.134 (0.20) |
| E2-10-40- | E2i-10-40- | E2C-10-40- | -0 | 1.57 (40) | 1.87 (47.4) | ≈ 0.148 (0.22) | ≈ 0.148 (0.22) | ≈ 0.154 (0.23) |
| E2-10-50- | E2i-10-50- | E2C-10-50- | -0 | 1.97 (50) | 2.26 (57.4) | ≈ 0.168 (0.25) | ≈ 0.168 (0.25) | ≈ 0.168 (0.25) |

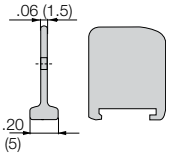
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E2-10-20- 038 -0

0=Standard color black.
For other colors see Chapter 1

| | 018 | 028 | 038 |
|---|---|---|---|
| *R* | .71 (018) | 1.10 (028) | 1.50 (038) |
| H | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

# E-Chain System® E2 Micro
# Series E2-10/E2i-10/E2C-10
# Interior Separation

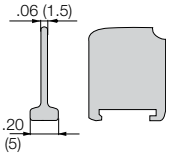





**Separator**

| | |
|---|---|
| Unassembled | **Part No. E2-10-2** |
| Assembled | **Part No. E2-10-2-1** |

- **Separator E2-10-2**
  **Standard - for all applications**
  For a simple vertical subdivision on E-Chains®. Separators can be arranged anywhere in the Energy cross section.




**Notch separator**
**For notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. E2-10-5** |
| Assembled | **Part No. E2-10-5-1** |

- **Notch separator E2-10-5**
  **Locks safely in .10" (2.5 mm) increments**
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro Series E2-10/E2i-10/E2C-10 Mounting Brackets



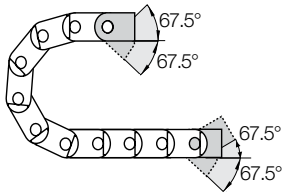
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

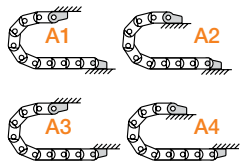
## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**E2-100-...-3PZ two side pivoting**
**E2-100-...-5PZ one side• pivoting**
**E2-100-...-1PZ locking**

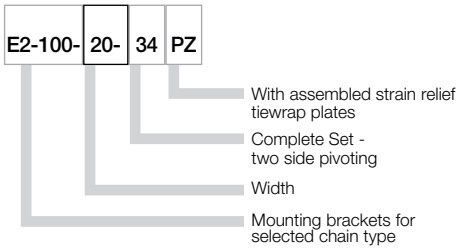


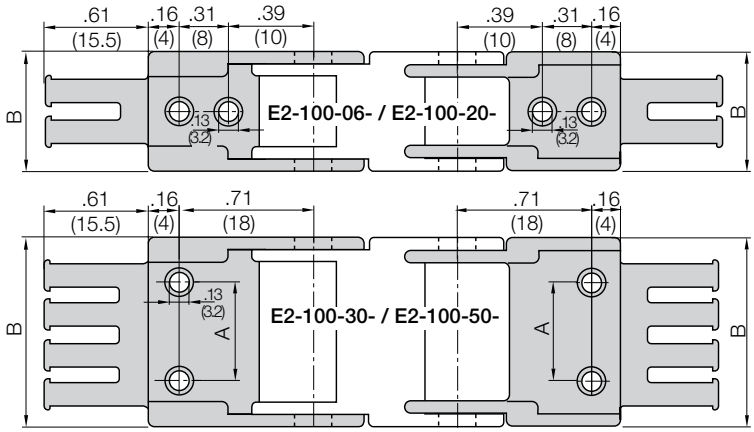
**Fixed end**
**E2-100-...-4PZ two side pivoting**
**E2-100-...-6PZ one side• pivoting**
**E2-100-...-2PZ locking**




Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**
E2-100- 20- 34 Full set, **each part with pin/bore**
**Single-part order:**
E2-100- 20- 3 Mounting bracket **with bore**
E2-100- 20- 4 Mounting bracket **with pin**

**E2-100-06-12 - E2-100-20-12:** Center bores only
**E2-100-30-12 – E2-100-64-12:** Outer bores only

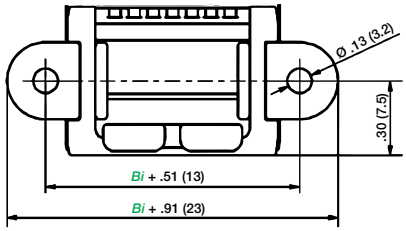
| Chain Width | Part No. full set with tiewrap plate two side pivoting | Part No. full set with tiewrap plate one side* pivoting | Part No. full set with tiewrap plate locking | Dimension A in. | (mm) | Dimension B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|---|
| -06 | **E2-100-06-34PZ** | **E2-100-06-56PZ** | **E2-100-06-12PZ** | — | — | .53 | (13.4) | 1 |
| -10 | **E2-100-10-34PZ** | **E2-100-10-56PZ** | **E2-100-10-12PZ** | — | — | .69 | (17.4) | 1 |
| -16 | **E2-100-16-34PZ** | **E2-100-16-56PZ** | **E2-100-16-12PZ** | — | — | .92 | (23.4) | 2 |
| -20 | **E2-100-20-34PZ** | **E2-100-20-56PZ** | **E2-100-20-12PZ** | — | — | 1.08 | (27.4) | 2 |
| -30 | **E2-100-30-34PZ** | **E2-100-30-56PZ** | **E2-100-30-12PZ** | .87 | (22) | 1.47 | (37.4) | 3 |
| -40 | **E2-100-40-34PZ** | **E2-100-40-56PZ** | **E2-100-40-12PZ** | 1.26 | (32) | 1.87 | (47.4) | 4 |
| -50 | **E2-100-50-34PZ** | **E2-100-50-56PZ** | **E2-100-50-12PZ** | 1.65 | (42) | 2.26 | (57.4) | 5 |

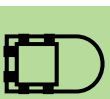
*One-side pivoting: Pivot angle = Bending radius.

One side pivoting only to the inner radius - whether mounted to A1 or A4

## Additional Accessories

**Quick flange**- the quick flange can be clipped-in laterally in all mounting brackets. Housing for haxagonal nut or M3 socket head screws M3.
**Single:**
**Part no. E2-150-QF**
**Includes mounting bracket:**
**Part No. E2-100-20-34PZQF**





# E-Chain System® E2 Micro
# Series B07

.41

For new designs we recommend E2 Micro “New Generation: E2-10

## Price Index

Series B07

## Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classifications upon request

## Features & Benefits

1. Lightweight
2. Small pitch for low-noise, smooth operation
3. Mounting bracket with integrated strain relief
4. For high acceleration
5. Snap-open along outer radius with film-hinge
6. Modular 2-piece link design - saves assembly time
7. Easy to shorten and lengthen at any given point

## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If a small lightweight E-Chain® is required
- If an small, openable, reasonably priced E-Chain® is required
- Perfect for handling machines and pick-and-place tools

- If opening of the link is not necessary
  ➤ **Series 06 E2 micro**
- If cable installation without opening lids is possible

➤ **Series E06 E-Z Chain**

- If a fast openable Energy Tube system is required

➤ **Series R07 E2 Tubes**

## Order Example: Complete E-Chain®

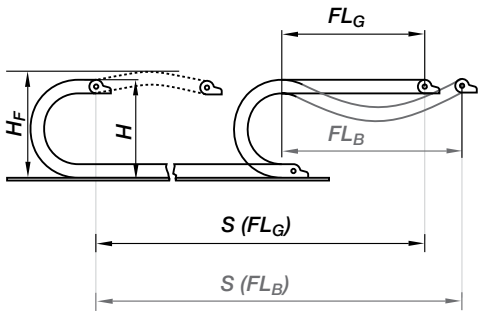
Please indicate chain length or number of links. Example:

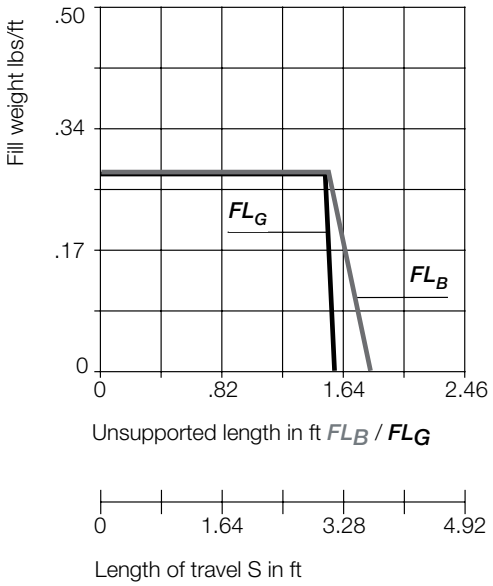
| | |
|---|---|
| 3.28 ft (1 m) **B07-20-038-0** | **E-Chain®** |
| 1 Set **060-20-12PZ** | **Mounting Bracket** |

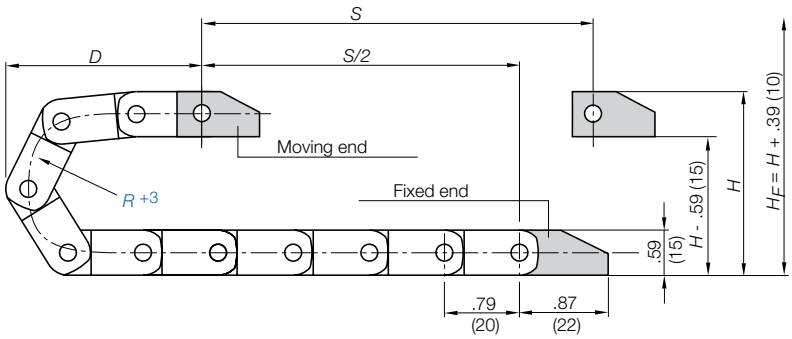
# E-Chain System® E2 Micro
# Series B07

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
**Further information ➤ Design, Chapter 1**




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ .39 in. (10 mm)** (with .13 lbs/ft (0.2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | .71 (018) | 1.10 (028) | 1.50 (038) |
|---|---|---|---|
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

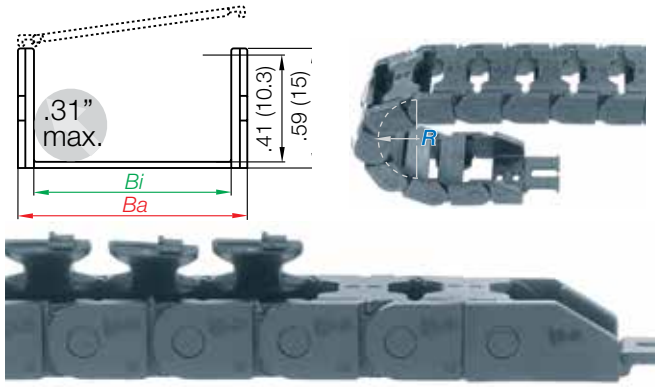
## Technical Data

Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series B07

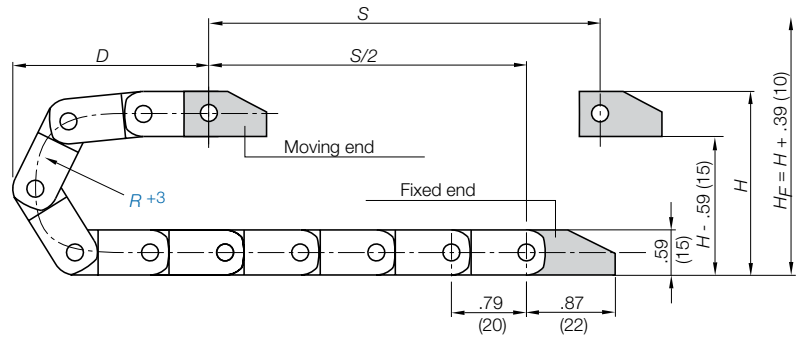
## Series B07 - E-Chain® snap-open along the outer radius




Part Number Structure

B07- 20- 038- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: B07-20-[038]-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| B07-16- | ☐ | -0 | .63 (16) | .89 (22.5) | ≈ 0.107 (0.16) |
| B07-20- | ☐ | -0 | .79 (20) | 1.06 (27.0) | ≈ 0.114 (0.17) |
| B07-30- | ☐ | -0 | 1.18 (30) | 1.46 (37.0) | ≈ 0.134 (0.20) |
| B07-40- | ☐ | -0 | 1.57 (40) | 1.85 (47.0) | ≈ 0.155 (0.23) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: B07-20-[038]-0

| | 018 | 028 | 038 |
|---|---|---|---|
| R | .71 (018) | 1.10 (028) | 1.50 (038) |
| H* | 2.01 (51) | 2.80 (71) | 3.58 (91) |
| D | 2.20 (56) | 2.60 (66) | 2.99 (76) |
| K | 3.94 (100) | 5.12 (130) | 6.30 (160) |

0=Standard color black. For other colors see Chapter 1

igus® E-Chain System®
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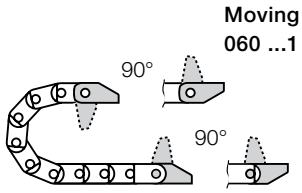
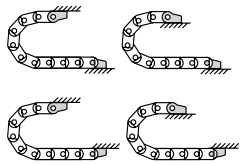
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series B07

## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates



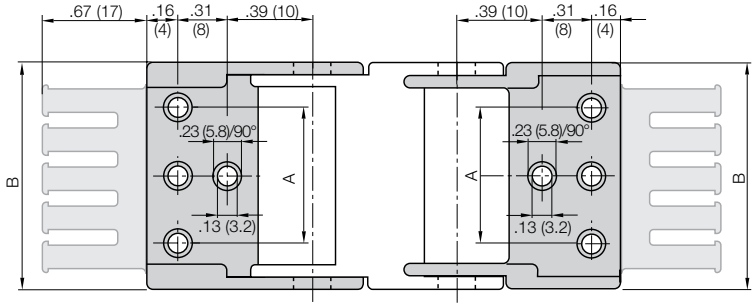


Possible installation configurations -

### Part Number Structure

060- | 20- | 12 | PZ

- PZ: With assembled strain relief tiewrap plates
- 12: Complete Set
- 20-: Width
- 060-: Mounting brackets for selected chain type




**Full set, for both ends:**
060- 20- 12 Full set, **each part with pin/bore**

**Single-part order:**
060- 20- 1 Mounting bracket **with bore**
060- 20- 2 Mounting bracket **with pin**

**060-06-12 - 060-20-12:**
Center bores only
**060-30-12 – 060-64-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| B07-16 | **060-16-12PZ** | **060-16-12** | — | — | .89 | (22.5) | 2 |
| B07-20 | **060-20-12PZ** | **060-20-12** | — | — | 1.06 | (27.0) | 2 |
| B07-30 | **060-30-12PZ** | **060-30-12** | .87 | (22) | 1.46 | (37.0) | 3 |
| B07-40 | **060-40-12PZ** | **060-40-12** | 1.26 | (32) | 1.85 | (47.0) | 4 |

## Additional Accessories

**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
**060-16-QS**
**060-20-QS**
**060-40-QS**

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**060-20-34QZ**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series B09

.49

For new designs we recommend E2 Micro “New Generation: E2-15

## Price Index

Series B09

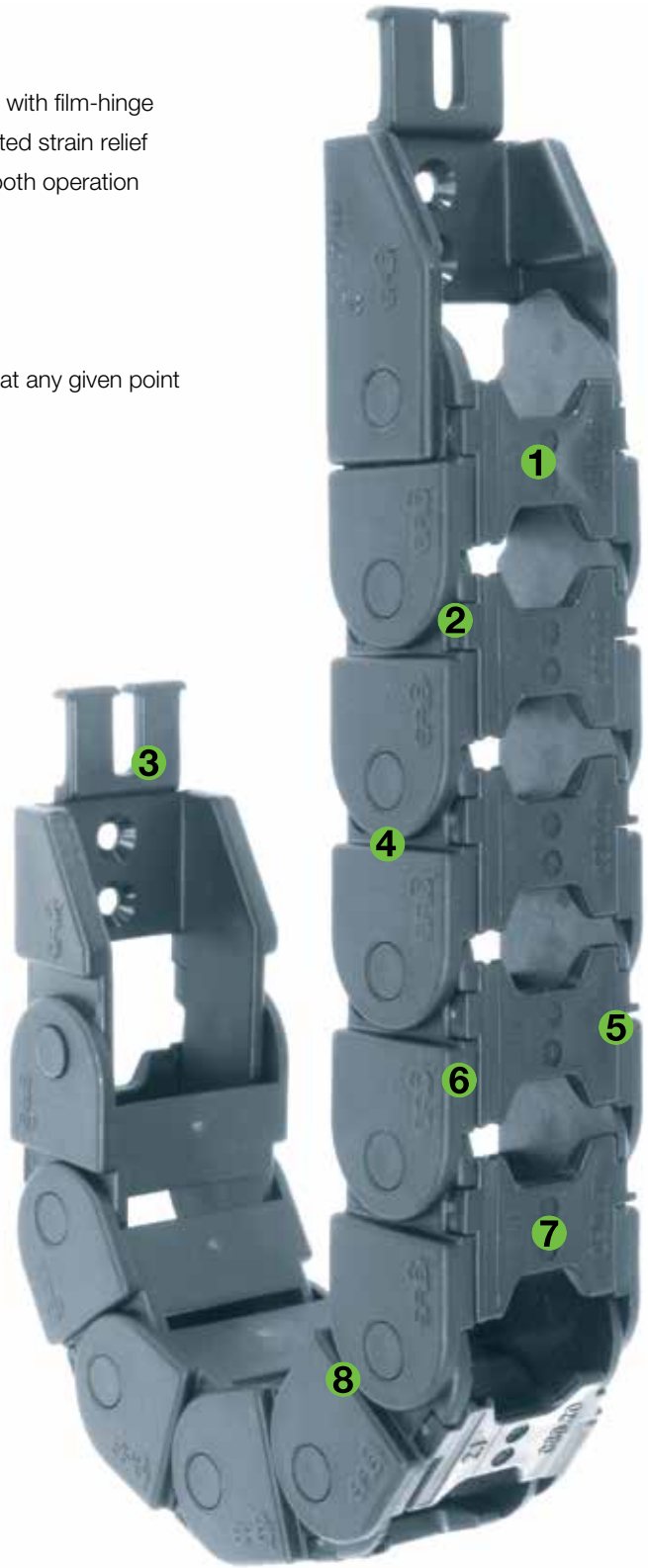
## Special Features / Options

ESD Classification: Electrically conductive ESD/ ATEX version upon request

UL94 -V2 classification version upon request

## Features & Benefits

1. Lightweight
2. Snap-open along outer radius with film-hinge
3. Mounting bracket with integrated strain relief
4. Small pitch for low-noise, smooth operation
5. Closed, easy to open version
6. Modular 2-piece link design - saves assembly time
7. For high acceleration
8. Easy to shorten and lengthen at any given point




## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If a small and lightweight E-Chain® is required
- If an small, openable, reasonably priced E-Chain® is required
- Perfect for handling machines and pick-and-place robots

- If opening of the link is not necessary
  ➤ **Series 08 E2 Micro**
- If cable installation without opening lids is possible
  ➤ **Series E08 E-Z Chain**
- If a fast, openable Energy Tube system is required
  ➤ **Series R09 Energy Tube**

## Order Example: Complete E-Chain®

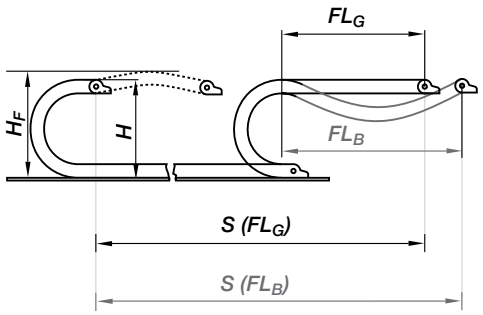
Please indicate chain length or number of links. Example:

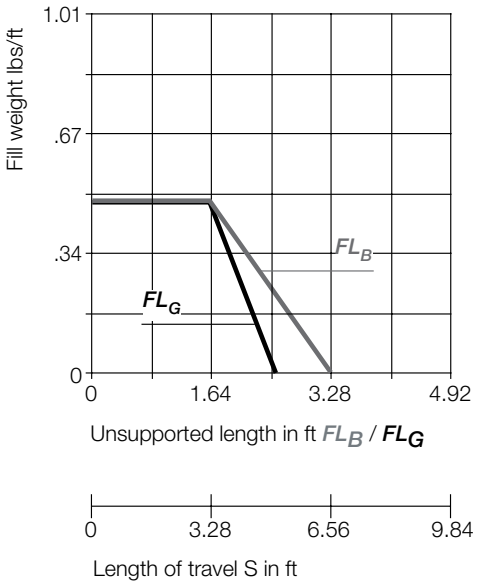
| | |
|---|---|
| 3.28 ft (1 m) **B09-20-038-0** | **E-Chain®** |
| 1 Set **080-20-12PZ** | **Mounting Bracket** |

# E-Chain System® E2 Micro Series B09

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1



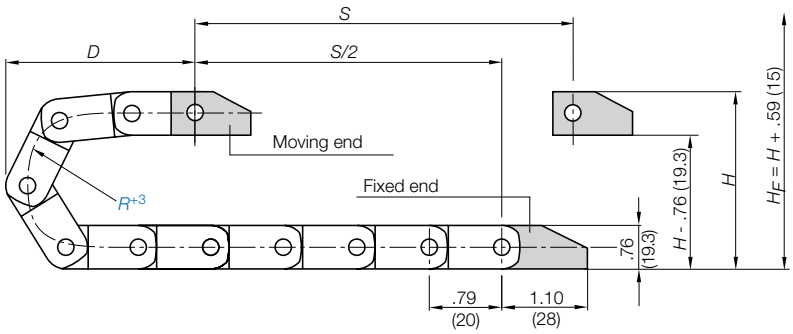

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2}$ + K

The required clearance height: $H_F$ = **H + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|
| H* | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.21 (130) | 6.41 (160) | 7.68 (195) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

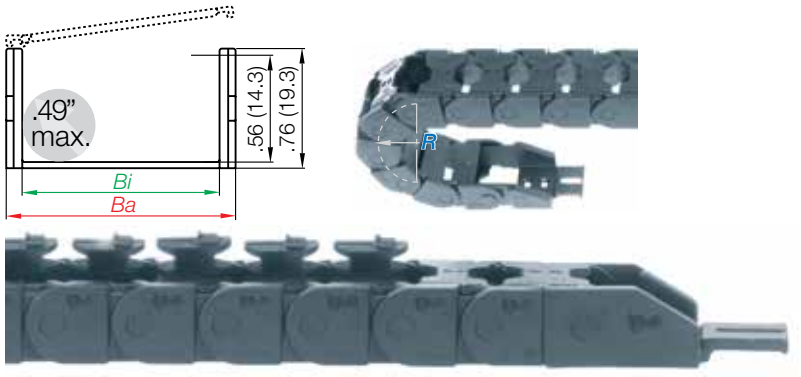
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

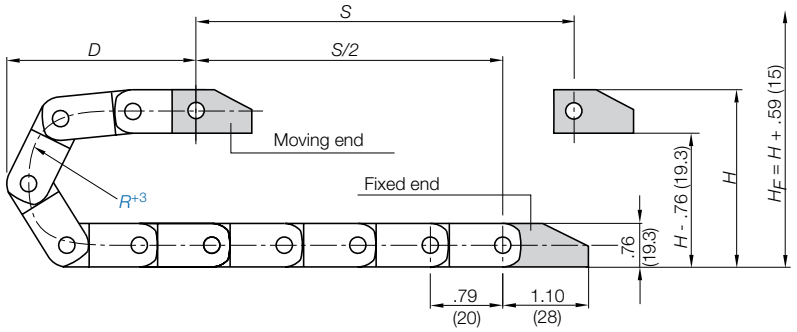
# E-Chain System® E2 Micro
# Series B09

## Series B09 - E-Chain® snap-open along the outer radius




Part Number Structure

| B09- | 20- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: B09-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| B09-16- | ☐ | -0 | .63 (16) | .95 (24.2) | ≈ 0.16 (0.24) |
| B09-20- | ☐ | -0 | .79 (20) | 1.11 (28.2) | ≈ 0.17 (0.25) |
| B09-30- | ☐ | -0 | 1.18 (30) | 1.50 (38.2) | ≈ 0.19 (0.28) |
| B09-40- | ☐ | -0 | 1.57 (40) | 1.90 (48.2) | ≈ 0.21 (0.31) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: B09-20-038-0

| | 018 | 028 | 038 |
|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H* | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 5.21 (130) | 6.41 (160) | 7.68 (195) |

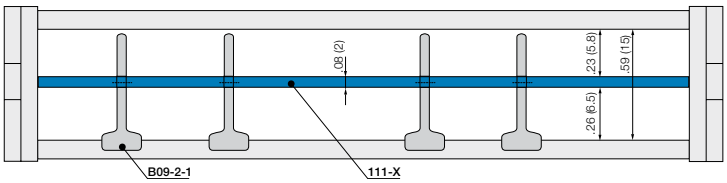
0=Standard color black. For other colors see Chapter 1

## Additional Accessories

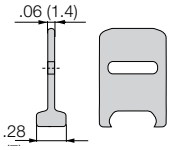
**Quicksnap -** the complete, detachable mounting unit, upon request
**Part No.**
080-20-QS
080-30-QS

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series B09
# Interior Separation - Mounting Brackets



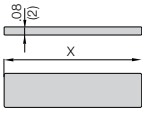

**Separators, full-width shelves** -
In the standard configuration separators are assembled every other Energy-Chain® link!




**Vertical Separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. B09-2** |
| Assembled | **Part No. B09-2-1** |

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .39 | (010) | **110-10** | **111-10** |
| .51 | (013) | **110-13** | **111-13** |
| .63 | (016) | **110-16** | **111-16** |
| .79 | (020) | **110-20** | **111-20** |

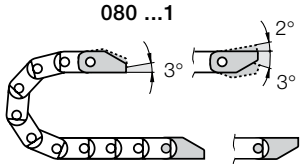
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.18 | (030) | **110-30** | **111-30** |
| 1.57 | (040) | **110-40** | **111-40** |
| 1.97 | (050) | **110-50** | **111-50** |

## Mounting Brackets

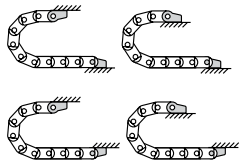
### Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**080 ...1**

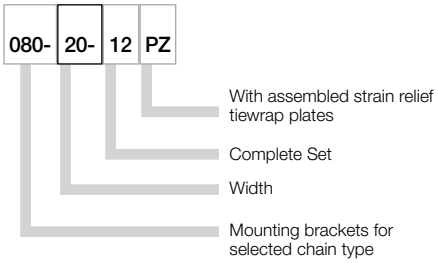


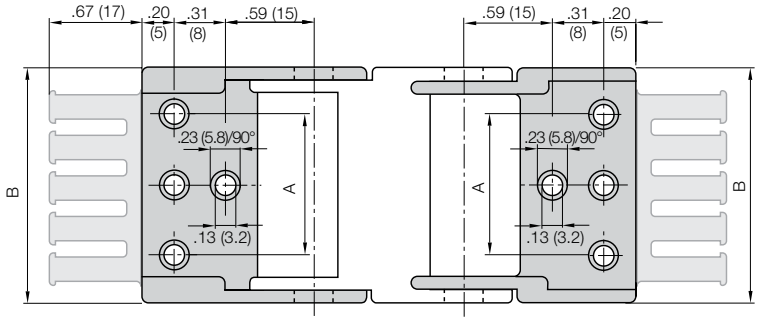

**Fixed end**
**080...2**



Possible installation configurations -

**Part Number Structure**




**Full set, for both ends:**
080- 20- 12 Full set, **each part with pin/bore**
**Single-part order:**
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

**080-10-12 - 080-20-12:**
Center bores only
**080-30-12 – 080-50-12:**
Outer bores only

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| B09-16 | **080-16-12PZ** | **080-16-12** | — | — | .95 | (24.2) | 2 |
| B09-20 | **080-20-12PZ** | **080-20-12** | — | — | 1.11 | (28.2) | 2 |
| B09-30 | **080-30-12PZ** | **080-30-12** | .87 | (22) | 1.50 | (38.2) | 3 |
| B09-40 | **080-40-12PZ** | **080-40-12** | 1.26 | (32) | 1.90 | (48.2) | 4 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series E2-15/E2i-15/E2C-15

.57 .57 .59

## Price Index

Series E2-15

## Special Features / Options

IPA Qualification Certificate:
Cleanroom test upon request

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

Easy to assemble and disassemble
Series 06 shown for demonstration purposes only

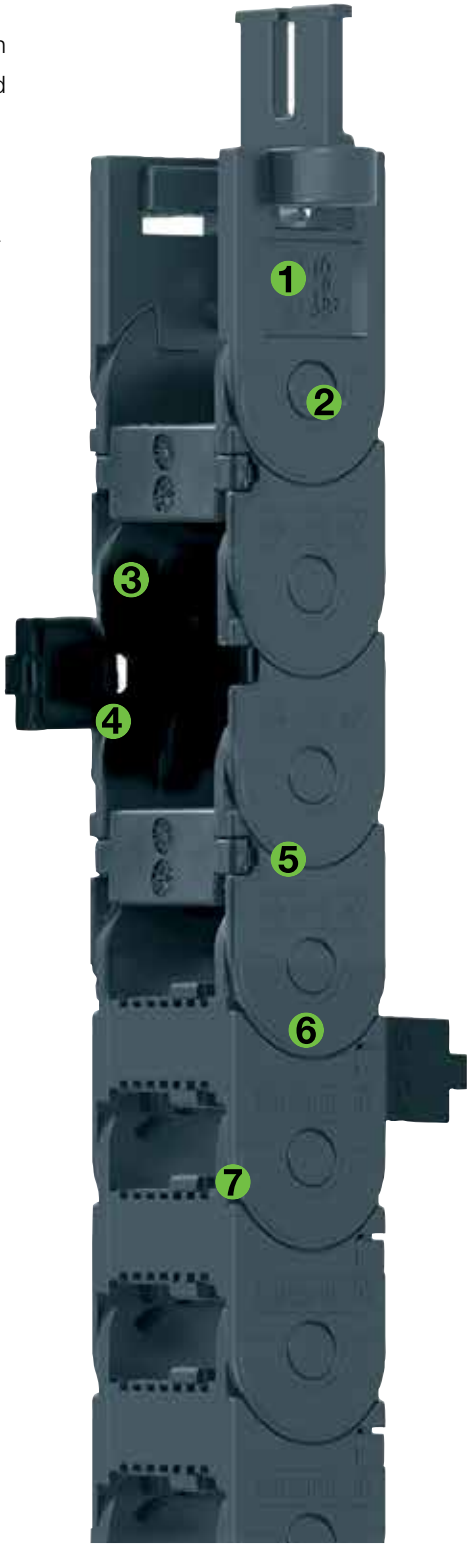
## Usage Guidelines

- When large unsupported lengths and high additional loads are required with a small E-Chain®
- For smooth, quiet operation due to small pitch
- If a large modular system in various designs is desired

- If a closed Energy Tube is required
  ➤ **Series R09 "Zipper"**
- If filling without opening lids is required
  ➤ **Series 08 E-Z Chain**

## Features & Benefits

1. Universal mounting bracket with strain relief option
2. Large, assembly friendly pins for long unsupported lengths
3. Very smooth contours ensure the best possible cable life
4. Non snap-open or snap-open in the inner or outer radius
5. Lightweight, low price
6. Square stop-dog system for large additional loads
7. Brake feature reduces noise




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E2-15-20-038-0** | **E-Chain®** |
| 1 Set **E2-150-20-34PZ** | **Mounting Bracket** |

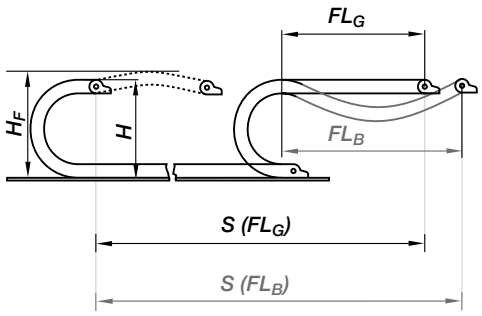
# E-Chain System® E2 Micro Series E2-15/E2i-15/E2C-15 Installation Dimensions

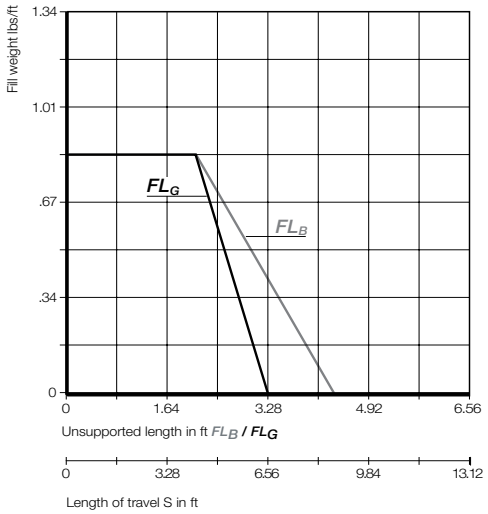


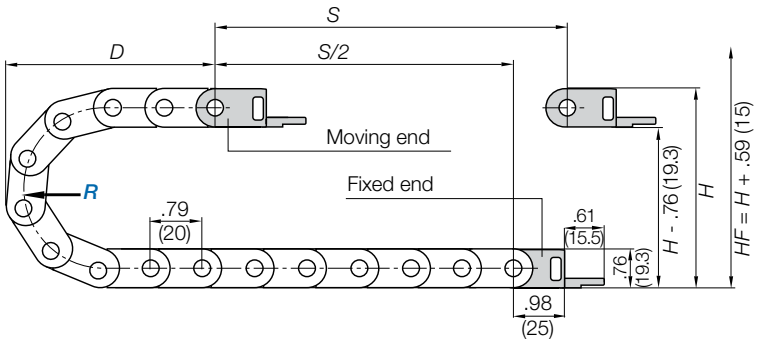
**Short travel, unsupported length**

- ● $FL_B$ = unsupported with permitted sag
- ● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***$H_F$ = H* + .59 in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075*) |
|---|---|---|---|---|
| H | 2.95 (75) | 3.74 (95) | 4.53 (115) | 6.65 (169) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) | 4.53 (115) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) | 11.02 (280) |

*Radius 075 is only available for the E2C-15-40

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

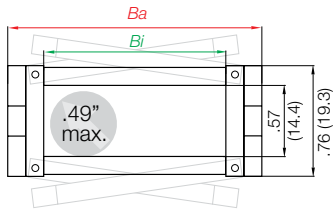
## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series E2-15/E2i-15/E2C-15

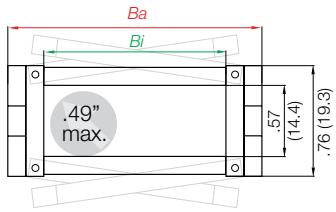
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec




## Series E2-15 - Snap-open along the outer radius from both sides

Part Number Structure

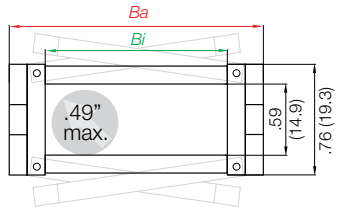
E2-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




## Series E2i-15 - Snap-open along the inner radius from both sides

Part Number Structure

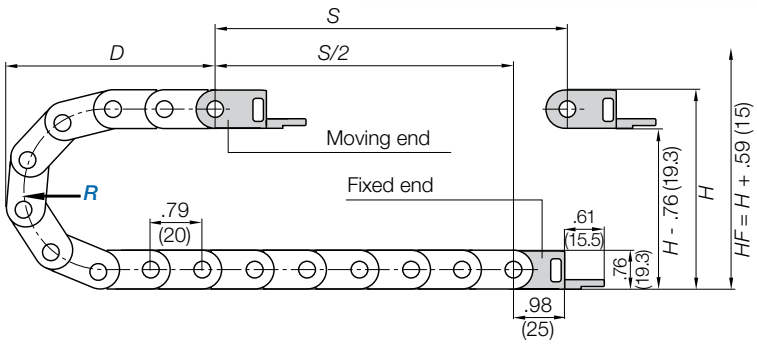
E2i-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




## Series E2C-15 - One-piece, non snap-open

Part Number Structure

E2C-15- 20- 038- 0
- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: E2-15-20- 038 -0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Snap-open along outer radius | Snap-open along inner radius | One-piece non snap-open | | Bi in. (mm) | Ba in. (mm) | Weight E2-15 lbs/ft (kg/m) | Weight E2i-15 lbs/ft (kg/m) | Weight E2C-15 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| E2-15-10- | E2i-15-10- | E2C-15-10- | -0 | .39 (10) | .69 (17.4) | ≈ 0.120 (0.18) | ≈ 0.120 (0.18) | ≈ 0.128 (0.19) |
| E2-15-13- | E2i-15-13- | E2C-15-13- | -0 | .51 (13) | .69 (17.4) | ≈ 0.128 (0.19) | ≈ 0.128 (0.19) | ≈ 0.134 (0.20) |
| E2-15-16- | E2i-15-16- | E2C-15-16- | -0 | .63 (16) | .92 (23.4) | ≈ 0.134 (0.20) | ≈ 0.134 (0.20) | ≈ 0.134 (0.20) |
| E2-15-20- | E2i-15-20- | E2C-15-20- | -0 | .79 (20) | 1.08 (27.4) | ≈ 0.141 (0.21) | ≈ 0.141 (0.21) | ≈ 0.141 (0.21) |
| E2-15-30- | E2i-15-30- | E2C-15-30- | -0 | 1.18 (30) | 1.47 (37.4) | ≈ 0.161 (0.24) | ≈ 0.161 (0.24) | ≈ 0.161 (0.24) |
| E2-15-40- | E2i-15-40- | E2C-15-40- | -0 | 1.57 (40) | 1.87 (47.4) | ≈ 0.175 (0.26) | ≈ 0.175 (0.26) | ≈ 0.175 (0.26) |
| E2-15-50- | E2i-15-50- | E2C-15-50- | -0 | 1.97 (50) | 2.26 (57.4) | ≈ 0.195 (0.29) | ≈ 0.195 (0.29) | ≈ 0.195 (0.29) |

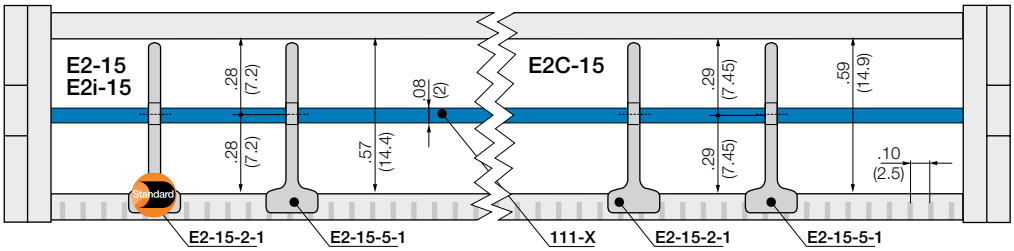
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E2-15-20- 038 -0

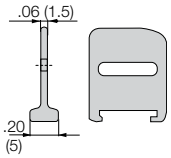
0=Standard color black.
For other colors see Chapter 1

| | 028 | 038 | 048 | 075* |
|---|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075*) |
| H | 2.95 (75) | 3.74 (95) | 4.53 (115) | 6.65 (169) |
| D | 2.68 (68) | 3.07 (78) | 3.46 (88) | 4.53 (115) |
| K | 5.12 (130) | 6.30 (160) | 7.68 (195) | 11.02 (280) |

*Radius 075 is only available for the E2C-15-40

# E-Chain System® E2 Micro
# Series E2-15/E2i-15/E2C-15
# Interior Separation

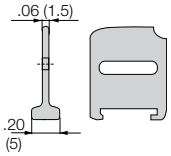





**Separator**

| | |
|---|---|
| Unassembled | **Part No. E2-15-2** |
| Assembled | **Part No. E2-15-2-1** |

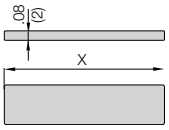
- **Separator E2-10-2**
  **Standard - for all applications**
  For a simple vertical subdivision on E-Chains®. Separators can be arranged anywhere in the Energy cross section.




**Notch separator**
**for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. E2-15-5** |
| Assembled | **Part No. E2-15-5-1** |

- **Notch separator E2-15-5**
  **Locks safely in .10" (2.5 mm) increments**
  For exact positioning in E-Chains®. Recommended for side-mounted applications.




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diameters.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .39 | (010) | **110-10** | **111-10** |
| .51 | (013) | **110-13** | **111-13** |
| .63 | (016) | **110-16** | **111-16** |
| .79 | (020) | **110-20** | **111-20** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.18 | (030) | **110-30** | **111-30** |
| 1.57 | (040) | **110-40** | **111-40** |
| 1.97 | (050) | **110-50** | **111-50** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro Series E2-15/E2i-15/E2C-15 Mounting Brackets



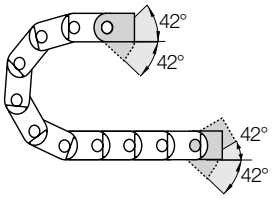
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

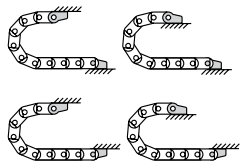
## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**E2-150-...-3PZ two side pivoting**
**E2-150-...-5PZ one side• pivoting**
**E2-150-...-1PZ locking**

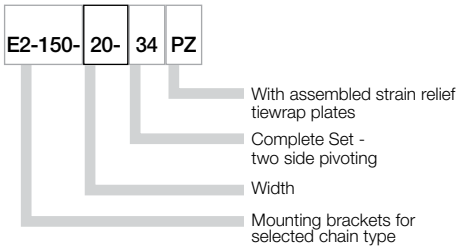


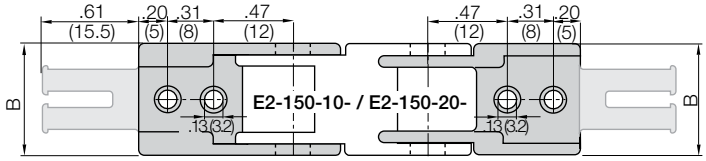
**Fixed end**
**E2-150-...-4PZ two side pivoting**
**E2-150-...-6PZ one side• pivoting**
**E2-150-...-2PZ locking**

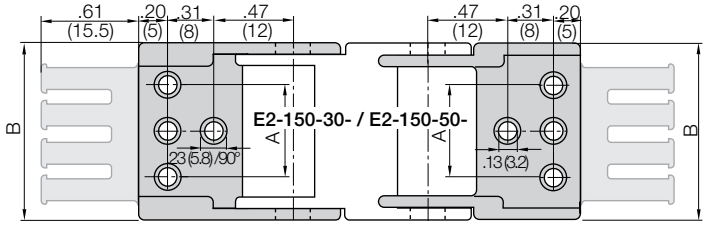


Possible installation configurations -

### Part Number Structure




**Full set, for both ends:**
E2-150- 20- 34 Full set, **each part with pin/bore**
**Single-part order:**
E2-150- 20- 3 Mounting bracket **with bore**
E2-150- 20- 4 Mounting bracket **with pin**

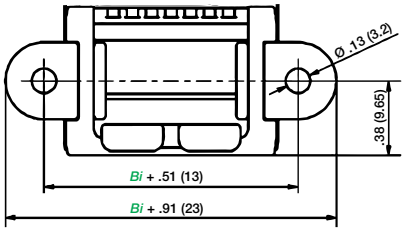
**E2-150-10-12 - E2-150-20-12:** Center bores only
**E2-150-30-12 – E2-150-64-12:** Outer bores only

| Chain Width | Part No. full set with tiewrap plate two side pivoting | Part No. full set with tiewrap plate one side* pivoting | Part No. full set with tiewrap plate locking | Dimension A in. | (mm) | Dimension B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|---|
| -10 | **E2-100-10-34PZ** | **E2-100-10-56PZ** | **E2-100-10-12PZ** | — | — | .70 | (17.8) | 1 |
| -13 | **E2-100-13-34PZ** | **E2-100-13-56PZ** | **E2-100-13-12PZ** | — | — | .82 | (20.8) | 1 |
| -16 | **E2-100-16-34PZ** | **E2-100-16-56PZ** | **E2-100-06-12PZ** | — | — | .94 | (23.8) | 2 |
| -20 | **E2-100-20-34PZ** | **E2-100-20-56PZ** | **E2-100-06-12PZ** | — | — | 1.09 | (27.8) | 2 |
| -30 | **E2-100-30-34PZ** | **E2-100-30-56PZ** | **E2-100-06-12PZ** | .87 | (22) | 1.49 | (37.8) | 3 |
| -40 | **E2-100-40-34PZ** | **E2-100-40-56PZ** | **E2-100-06-12PZ** | 1.26 | (32) | 1.88 | (47.8) | 4 |
| -50 | **E2-100-50-34PZ** | **E2-100-50-56PZ** | **E2-100-06-12PZ** | 1.65 | (42) | 2.27 | (57.8) | 5 |

*One-side pivoting: Pivot angle = Bending radius.
One side pivoting only to the inner radius

## Additional Accessories

**Quick flange**- the quick flange can be clipped-in laterally in all mounting brackets. Housing for hexagonal nut or cylinder head screws M3.
**Single:**
**Part no. E2-150-QF**
**Includes mounting bracket:**
**Part No. E2-150-20-34PZQF**



# E-Chain System® E2 Micro Series 08

.59

## Features & Benefits

1. Small pitch for very quiet operation
2. High torsional rigidity
3. Mounting brackets with strain relief options
4. One-piece, non snap-open E-Chain®
5. Very lightweight - low price
6. Dirt repellant exterior

### Price Index

Series 08

### Special Features / Options

IPA Qualification Certificate: Cleanroom test upon request

ESD Classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

### Assembly Tips

East to assemble and disassemble

### Usage Guidelines

- If quiet operation is required
- If cost is a factor
- If connection options are required (Quicksnap, Quickfix, etc.)
- If high torsional rigidity is required

- If snap-open links are required
  ➤ **Series 09 “Zipper”**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E08/Z08 E-Z Chain**

## Order Example: Complete E-Chain®

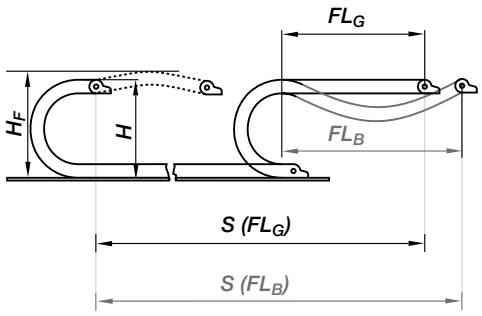
Please indicate chain length or number of links. Example:

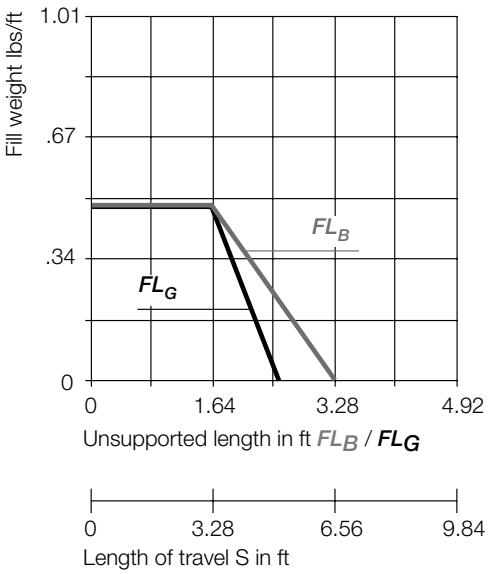
| | |
|---|---|
| 3.28 ft (1 m) **08-30-038-0** | **E-Chain®** |
| 1 Set **080-30-12PZ** | **Mounting Bracket** |

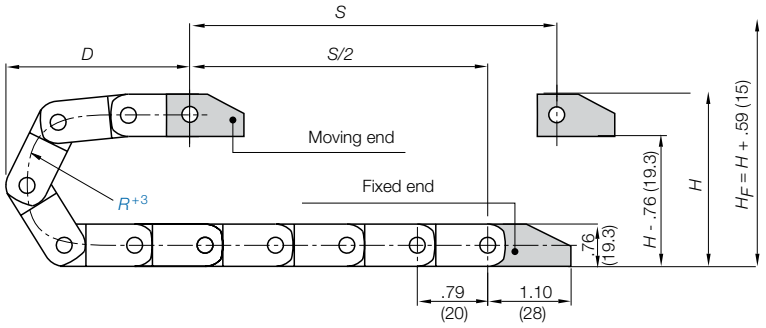
# E-Chain System® E2 Micro Series 08 Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** .79" (20 mm)
**Links per ft (m): =** 15.24 (50)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .59$ **in. (15 mm)** (with .20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | .98 (025*) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|---|
| H | 2.72 (69) | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.56 (65) | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 4.72 (120) | 5.12 (130) | 6.30 (160) | 7.48 (190) |

*Only for 08-10 and 08-20 E-Chain®

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

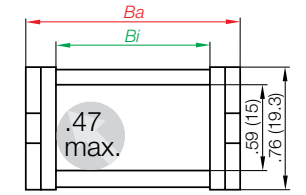
## Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Micro
# Series 08

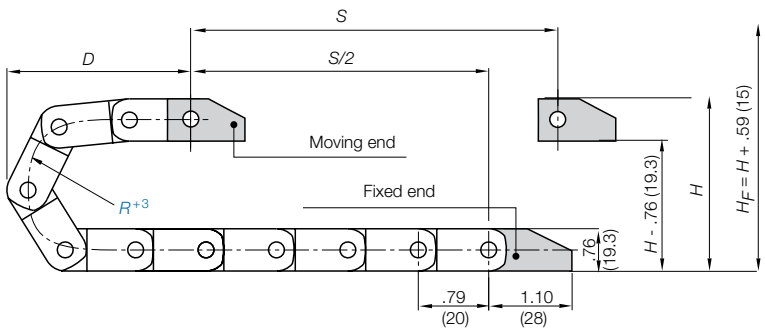
## Series 08 - E-Chain® non snap-open



**Part Number Structure**

| 08- | 30- | 038- | 0 |
|---|---|---|---|

- 038- : Bending radius
- 30- : Width
- 08- : Series
- 0 : Color - Black




Supplement part number with required radius. Example: 08-20-038-0
Pitch: .79 in. (20 mm) per link links/ft (m) = 15.24 (50)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 08-10- | ☐ | -0 | .39 (10) | .72 (18.2) | ≈ 0.14 (0.21) |
| 08-13-** | ☐ | -0 | .51 (13) | .83 (21.2) | ≈ 0.15 (0.23) |
| 08-16- | ☐ | -0 | .63 (16) | .95 (24.2) | ≈ 0.16 (0.24) |
| 08-20- | ☐ | -0 | .79 (20) | 1.11 (28.2) | ≈ 0.17 (0.25) |
| 08-30- | ☐ | -0 | 1.18 (30) | 1.50 (38.2) | ≈ 0.19 (0.28) |
| 08-40- | ☐ | -0 | 1.57 (40) | 1.90 (48.2) | ≈ 0.21 (0.31) |
| 08-50- | ☐ | -0 | 1.97 (50) | 2.29 (58.2) | ≈ 0.25 (0.37) |

Choose from the radii below for all of the above sizes
Radius (mm) Example: 08-20-038-0

| | 025* | 028 | 038 | 048 |
|---|---|---|---|---|
| R | .98 (025*) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H | 2.72 (69) | 2.95 (75) | 3.74 (95) | 4.53 (115) |
| D | 2.56 (65) | 2.68 (68) | 3.07 (78) | 3.46 (88) |
| K | 4.72 (120) | 5.12 (130) | 6.30 (160) | 7.48 (190) |

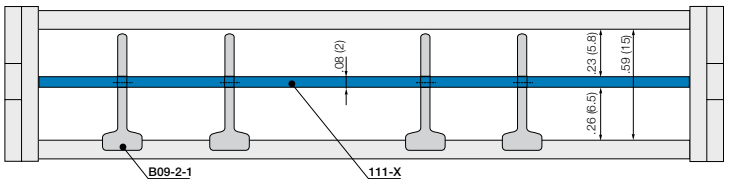
*Only for 08-10 and 08-20 E-Chain®
0=Standard color black. For other colors see Chapter 1
**only for 028 and 038 radius

## Additional Accessories

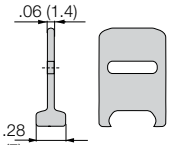
**Quicksnap** - the complete, detachable mounting unit, upon request
**Part No.**
**080-20-QS**
**080-30-QS**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Micro
# Series 08
# Interior Separation - Mounting Brackets



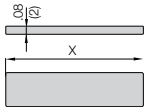

**Separators, full-width shelves** -
In the standard configuration separators are assembled every other Energy-Chain® link!




**Vertical Separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. B09-2** |
| Assembled | **Part No. B09-2-1** |

- **Slotted separator B09-2**
  This component is used when vertical separation is required. Due to its slot, it allows basic vertical/ horizontal shelving arrangements.




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  This component is used in applications with many thin cables with similar diamters.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .39 | (010) | **110-10** | **111-10** |
| .51 | (013) | **110-13** | **111-13** |
| .63 | (016) | **110-16** | **111-16** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .79 | (020) | **110-20** | **111-20** |
| 1.18 | (030) | **110-30** | **111-30** |
| 1.57 | (040) | **110-40** | **111-40** |

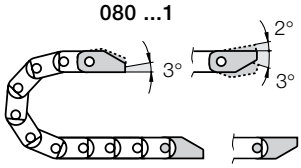
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (050) | **110-50** | **111-50** |

## Mounting Brackets

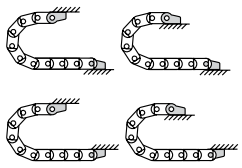
### Plastic, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

**Moving end**
**080 ...1**

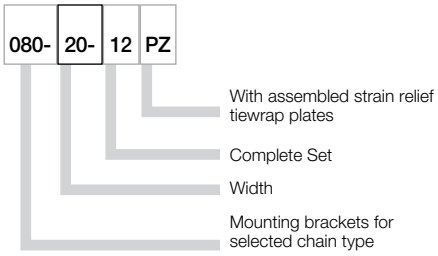


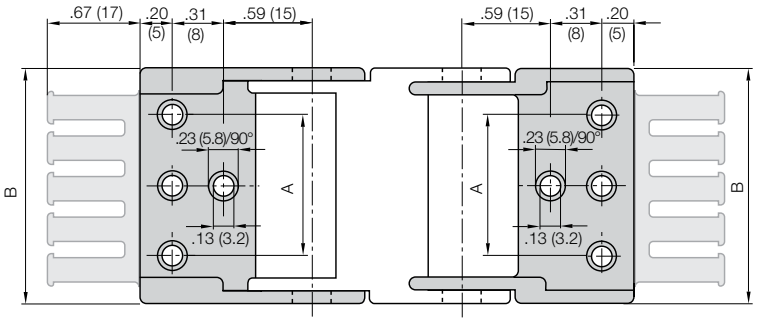

**Fixed end**
**080...2**



Possible installation configurations -

**Part Number Structure**



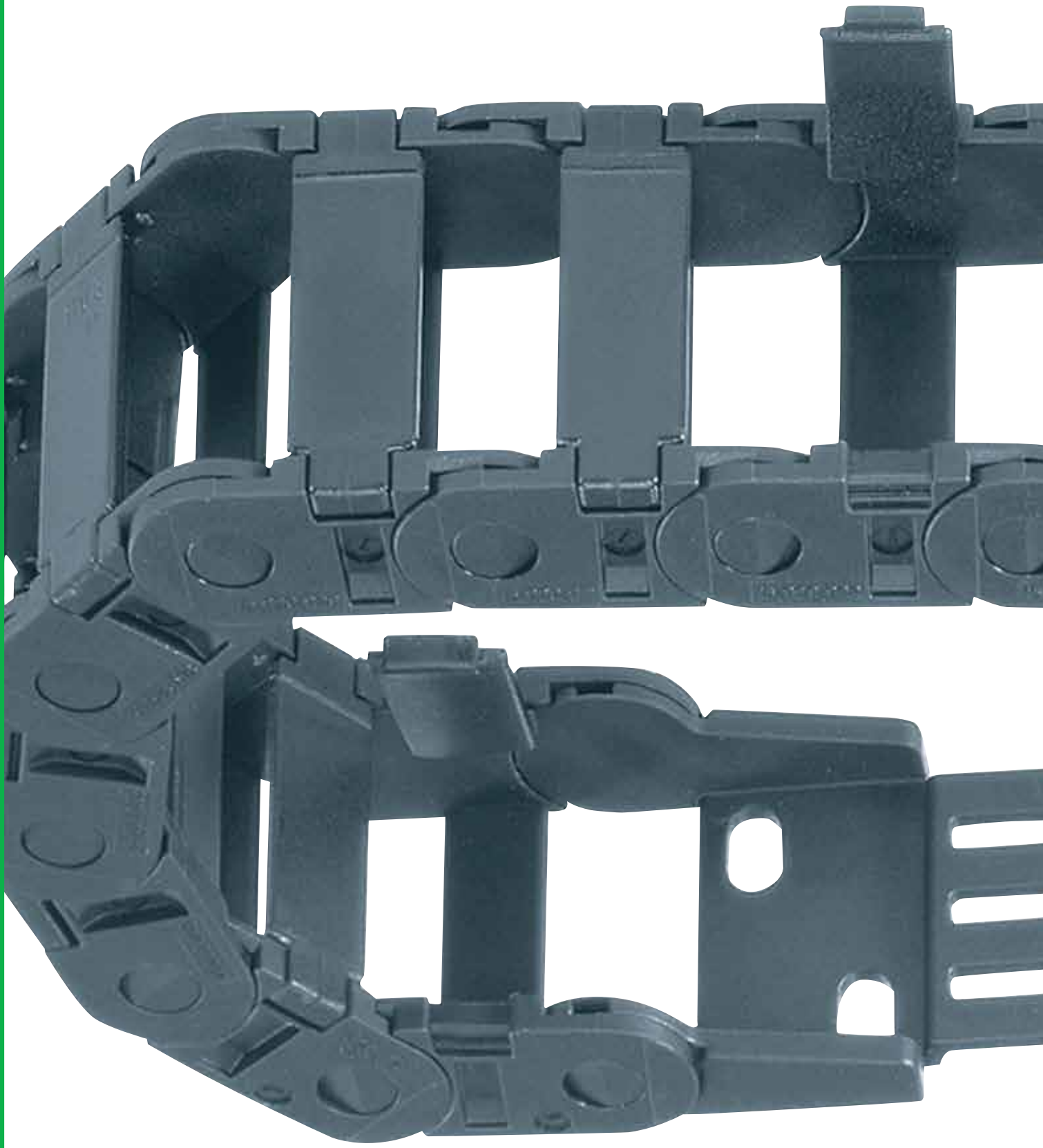




**080-10-12 - 080-20-12:** Center bores only
**080-30-12 – 080-50-12:** Outer bores only

**Full set, for both ends:**
080- 20- 12 Full set, **each part with pin/bore**
**Single-part order:**
080- 20- 1 Mounting bracket **with bore**
080- 20- 2 Mounting bracket **with pin**

| Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|---|
| 08-10 | **080-10-12PZ** | **080-10-12** | — | — | .72 | (18.2) | 1 |
| 08-13 | — | **080-13-12** | — | — | .83 | (21.2) | — |
| 08-16 | **080-16-12PZ** | **080-16-12** | — | — | .95 | (24.2) | 2 |
| 08-20 | **080-20-12PZ** | **080-20-12** | — | — | 1.11 | (28.2) | 2 |
| 08-30 | **080-30-12PZ** | **080-30-12** | .87 | (22) | 1.50 | (38.2) | 3 |
| 08-40 | **080-40-12PZ** | **080-40-12** | 1.26 | (32) | 1.90 | (48.2) | 4 |
| 08-50 | **080-50-12PZ** | **080-50-12** | 1.65 | (42) | 2.29 | (58.2) | 5 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



igus®

# E2 Mini

# E2 mini - Small sized E-Chains

**System E2 mini** is low-cost and can come equipped with interior separation to prevent cables from chaffing, twisting and corkscrewing. These E-Chains can be used in applications with long, unsupported lengths and offer a variety of different connection options

### Typical industries and applications

- Construction machinery
- Furniture
- Packaging machines
- Textile machines
- Vehicle construction
- Woodworking machines
- Glass machines
- Automation
- General machinery

Special equipment: Electrically conductive
ESD/ATEX version upon request

Cleanroom Class 1 (ISO class 3) for Series 10, tested by the Dryden Engineering Company, California

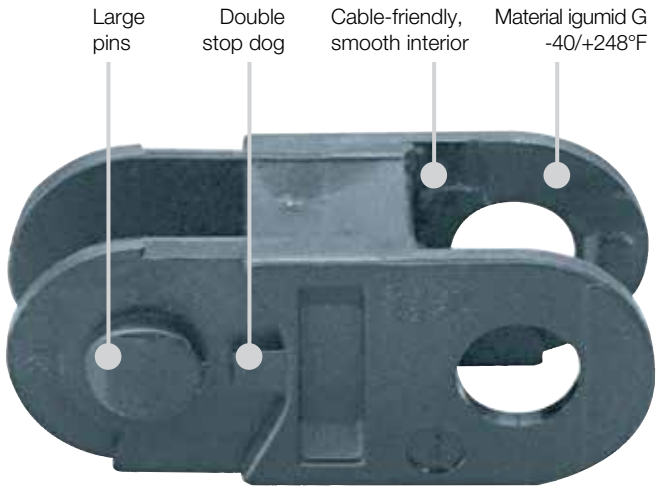
Flammability Class
VDE 0304 IIC UL94 HB

E2 mini E-Chain®, RBR-version with reverse bending radius

E2 mini E-Chain® in a tooling machine, coolant resistant

Long-travel applications up to 131 ft. (40 m) are possible - here: Series 10 in textile machine

# E-Chain System® E2 Mini
# Selection Guide




- Small pitch for smooth running
- High torsional rigidity
- Double stop dog and large pins for long service life
- Optimized relationship: weight - stability
- Large pins for long unsupported lengths
- Easy to assemble
- Various interior separation options
- You can find more technical data about the material, chemical resistance, temperatures **Design, Chapter 1**

## E2 Mini - one-piece E-Chains®
### One-piece, non snap-open

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **10** | .71 | (18) | .59-3.94 | (15-100) | 1.02-4.45 | (26-113) | .91 | (23) | 1.10-7.09 | (28-180) |

## E2 Mini - one-piece E-Chains®
### Snap-open along the inner radius with film-hinge

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **14** | .79 | (20) | .59-1.97 | (15-50) | 1.02-2.40 | (26-61) | .98 | (25) | 1.10-4.92 | (28-125) |

## E2 Mini - two-piece E-Chains®
### Snap-open along the outer radius

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **B15** | .67 | (17) | .59-3.94 | (15-100) | 1.02-4.45 | (26-113) | .91 | (23) | 1.50-7.09 | (38-180) |
| **B17** | 1.26 | (32) | .59-3.94 | (15-100) | 1.00-4.45 | (25.5-113) | 1.54 | (39) | 1.89-4.92 | (48-125) |

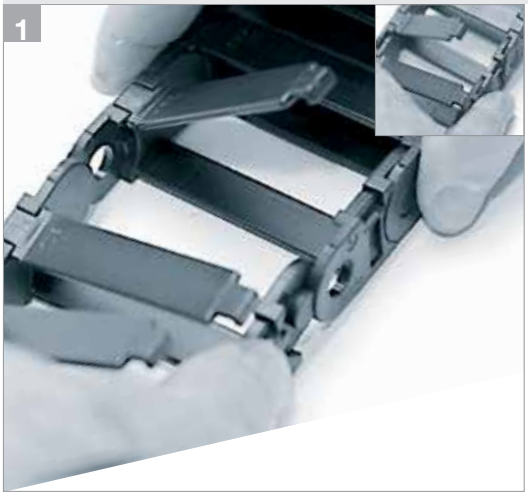
## E2 Mini - two-piece E-Chains®
### Snap-open along the inner radius

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **B15i** | .67 | (17) | .59-3.94 | (15-100) | 1.02-4.45 | (26-113) | .91 | (23) | 1.50-7.09 | (38-180) |
| **B17i** | 1.26 | (32) | .98-1.50 | (25-38) | 1.40-1.91 | (35.5-48.5) | 1.54 | (39) | 1.89-4.92 | (48-125*) |

# E-Chain System® E2 Mini
# Assembly Instructions



## **Assembling** | E2 mini




Push, click and snap in pin

Push and snap crossbars

## **Separating** | E2 mini

Lever crossbars open

Open crossbars

Release side link

Twist and pull apart

# E-Chain System® E2 Mini
# Series 10

.71

## Price Index

Series 10

## Special Features / Options

Cleanroom Class 1 (ISO class 3)

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If snap-open links are not necessary
- If a small but very stable chain is required

- If snap-open links are necessary
  ➤ **Series 15 "Zipper"**
- If quick insertion of cables with preassembled connector is required
  ➤ **Series E14 E-Z Chain**

## Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Dirt repellent exterior
3. Mounting bracket with integrated strain relief
4. One piece link design
5. Interior separation available
6. Molded-in separator available

**Series 10-050-075-S**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **10-025-038-0** | **E-Chain®** |
| With 2 separators **111** assembled every 2nd link | **Interior Separation** |
| 1 Set **1025-12PZ** | **Mounting Bracket** |

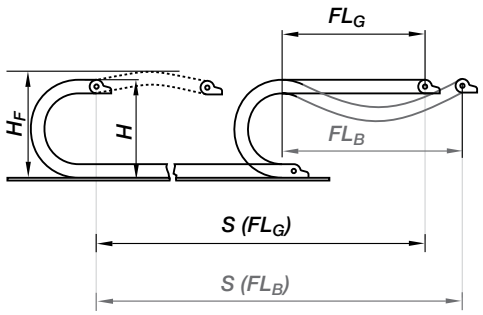
# E-Chain System® E2 Mini
# Series 10
# Installation Dimensions

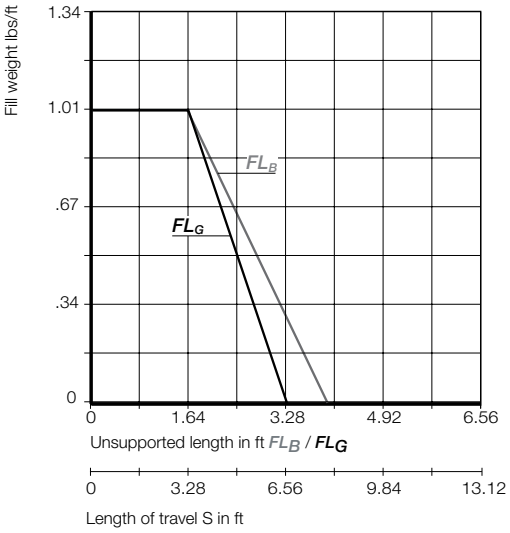
**Short travel, unsupported length**

● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**



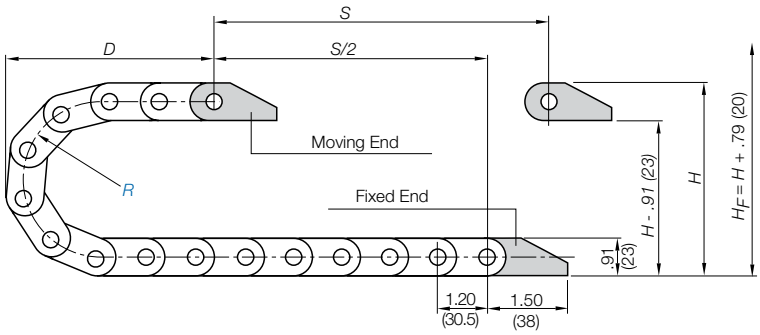




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F$ **= H + .79 in. (20 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|---|---|
| H | 3.11 (79) | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.35 (85) | 3.74 (95) | 4.3 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.16 (182) | 7.95 (202) | 9.33 (237) |
| K | 5.91 (150) | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

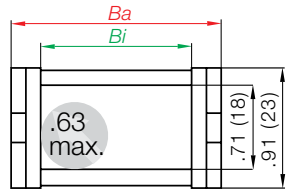
Details of material properties
**➤ Chapter 1**

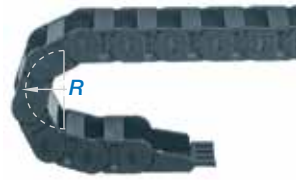


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series 10

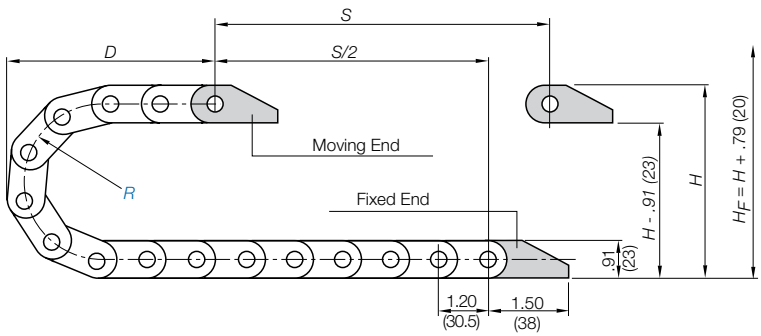
## Series 10 - E-Chain® non snap-open



**Part Number Structure**

| 10- | 025- | 038- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |




Supplement part number with required radius. Example: 10-025-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 10-015- | ☐ | -0 | .59 (15) | 1.02 (26) | ≈ 0.24 (0.35) |
| 10-025- | ☐ | -0 | .98 (25) | 1.42 (36) | ≈ 0.27 (0.40) |
| 10-038- | ☐ | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.31 (0.46) |
| 10-050- | ☐ | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.35 (0.52) |
| 10-5- | ☐ | -0 | 2.48 (63) | 2.99 (76) | ≈ 0.42 (0.63) |
| 10-6 | ☐ | -0 | 3.15 (80) | 3.70 (94) | ≈ 0.47 (0.70) |
| 10-7 | ☐ | -0 | 3.94 (100) | 4.45 (113) | ≈ 0.51 (0.76) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 10-025-[038]-0

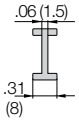
| | 028 | 038 | 048 | 075 | 100 | 110 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
| H | 3.11 (79) | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.35 (85) | 3.74 (95) | 4.3 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.16 (182) | 7.95 (202) | 9.33 (237) |
| K | 5.91 (150) | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

0=Standard color black. For other colors see Chapter 1

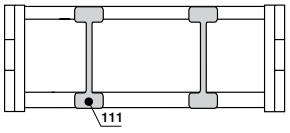
## Interior Separation

### Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.




| Separator | |
|---|---|
| Unassembled | Part No. 101 |
| Assembled | Part No. 111 |



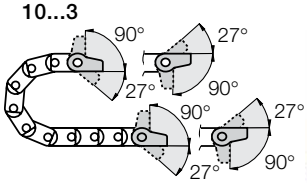
# E-Chain System® E2 Mini
# Series 10
# Mounting Brackets - Plastic

Standard

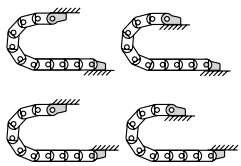
## Option 1: pivoting

- Short and long travel
- Space-restricted conditions
- Corrosion resistant

Moving end
10...3




Fixed end
10...4P(Z)

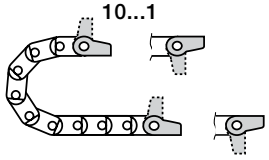


Possible installation configurations -

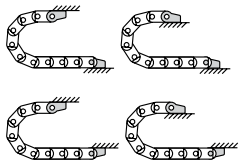
## Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

Moving end
10...1

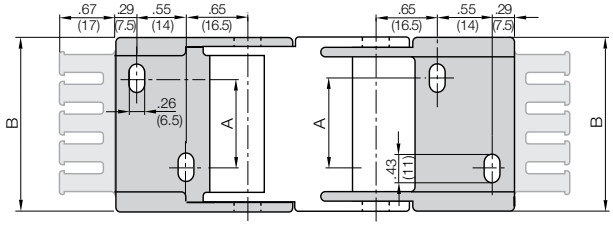


Fixed end
10...2P(Z)

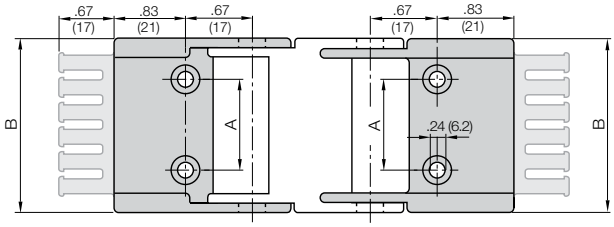


Possible installation configurations -

For E-Chain
10-015 to 10-050




For E-Chain
10-5 to 10-7




**Part Number Structure**

1025- | 34- | P | PZ

- With tiewrap plate
- Without tiewrap plate
- Complete Set
  12 = Locking
  34 = Pivoting
- Mounting brackets for selected chain type

**Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12**

**Part No. Full Set** (pivoting)
**with Tiewrap Plate**
**Series 10 with 25mm inner width**
**1025-34PZ**

**Part No. Full Set** (pivoting)
**without Tiewrap Plate**
**Series 10 with 25 mm inner width**
**1025-34P**

**Full set, for both ends:**
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|---|
| 10-015 | 1015- ☐ PZ | 1015- ☐ P | — | — | 1.00 | (25.5) |
| 10-025 | 1025- ☐ PZ | 1025- ☐ P | .39 | (10) | 1.40 | (35.5) |
| 10-038 | 1038- ☐ PZ | 1038- ☐ P | .91 | (23) | 1.91 | (48.5) |
| 10-050 | 1050- ☐ PZ | 1050- ☐ P | 1.38 | (35) | 2.38 | (60.5) |
| 10-5 | 105- ☐ PZ | 105- ☐ P | 1.89 | (48) | 2.95 | (75.0) |
| 10-6 | 106- ☐ PZ | 106- ☐ P | 2.56 | (65) | 3.62 | (92.0) |
| 10-7 | 107- ☐ PZ | 107- ☐ P | 3.35 | (85) | 4.41 | (112.0) |

34 or 12

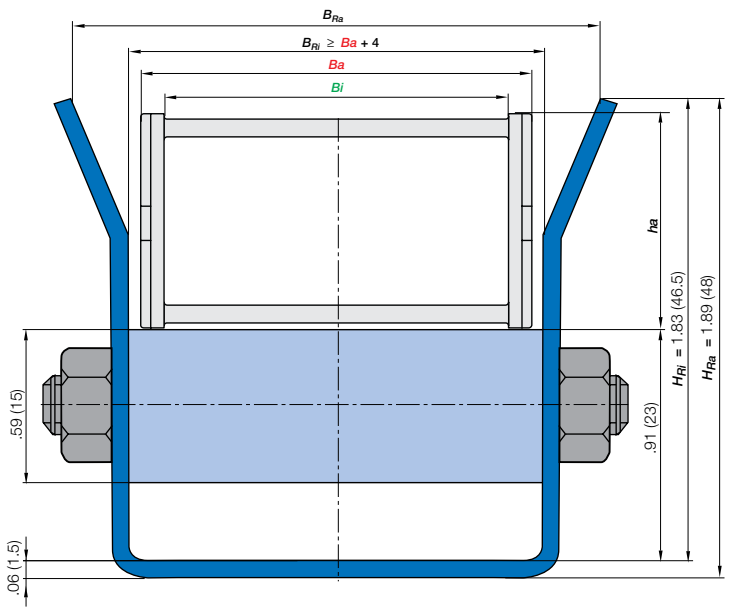
For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series 10
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

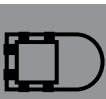
One-piece guide troughs made of steel are available for the Series 10 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.




**Dimensions Guide troughs 91-10 — 91-71**

| For Series | Part No. | $B_{Ra}$ in. | $B_{Ra}$ (mm) | $B_{Ri}$ in. | $B_{Ri}$ (mm) | Weight lbs/ft | Weight (kg/m) |
|---|---|---|---|---|---|---|---|
| **10-015** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-10** | 1.59 | (40.5) | 1.18 | (30) | 1.01 | (1.50) |
| Glide bar 6.56 ft. (2m section) | **91-11** | 1.59 | (40.5) | 1.18 | (30) | .30 | (.45) |
| **10-025** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-20** | 1.99 | (50.5) | 1.57 | (40) | 1.11 | (1.65) |
| Glide bar 6.56 ft. (2m section) | **91-21** | 1.99 | (50.5) | 1.57 | (40) | .38 | (.57) |
| **10-038** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-30** | 2.46 | (62.5) | 2.05 | (52) | 1.21 | (1.80) |
| Glide bar 6.56 ft. (2m section) | **91-31** | 2.46 | (62.5) | 2.05 | (52) | .46 | (.68) |
| **10-050** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-40** | 2.85 | (72.5) | 2.44 | (62) | 1.28 | (1.90) |
| Glide bar 6.56 ft. (2m section) | **91-41** | 2.85 | (72.5) | 2.44 | (62) | .61 | (.91) |
| **10-5** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-50** | 3.60 | (91.5) | 3.19 | (81) | 1.52 | (2.26) |
| Glide bar 6.56 ft. (2m section) | **91-51** | 3.60 | (91.5) | 3.19 | (81) | .84 | (1.25) |
| **10-6** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-60** | 4.27 | (108.5) | 3.86 | (98) | 1.83 | (2.72) |
| Glide bar 6.56 ft. (2m section) | **91-61** | 4.27 | (108.5) | 3.86 | (98) | .91 | (1.35) |
| **10-7** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-70** | 5.06 | (128.5) | 4.65 | (118) | 2.13 | (3.17) |
| Glide bar 6.56 ft. (2m section) | **91-71** | 5.06 | (128.5) | 4.65 | (118) | 1.14 | (1.70) |

**Trough material in general: St 1203 galvanized**



# E-Chain System® E2 Mini
# Series 14

.79

## Price Index

Series 14

## Special Features / Options

Cleanroom Class 1 (ISO class 3)

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

UL94-V2 Classifications

## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- For applications with low loads
- Fast installation of the cables

- For gliding applications
  ➤ **Series 15 Zipper**
- For long unsupported lengths
  ➤ **Series 15 Zipper**

## Features & Benefits

1. Flammability class UL 94
2. Mounting bracket with integrated strain relief
3. Dirt-repellent exterior
4. Snap-open along inner radius with film-hinge

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

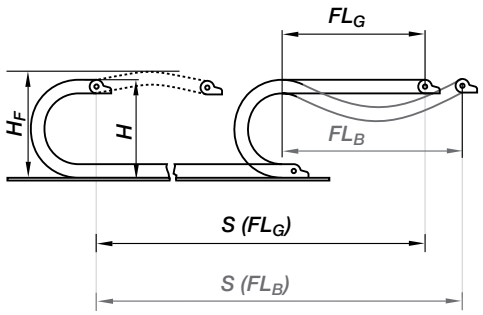
| | |
|---|---|
| 3.28 ft (1 m) **14-2-038-0** | **E-Chain®** |
| 1 Set **114-2-12PZ** | **Mounting Bracket** |

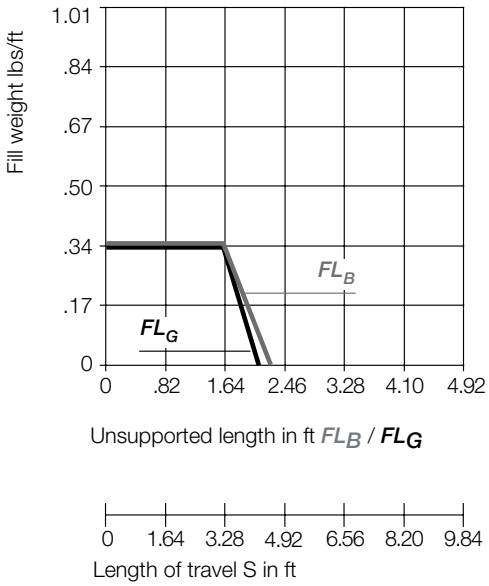
# E-Chain System® E2 Mini
# Series 14
# Installation Dimensions

**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**



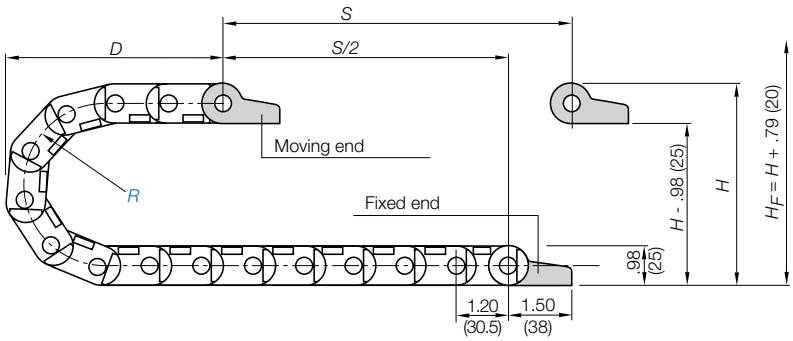




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height




The required clearance height: $H_F$ = **H + .79 in. (20 mm)** (with 0.34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2}$ + K

| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
|---|---|---|---|---|---|---|
| H | 3.19 (81) | 3.98 (101) | 4.76 (121) | 6.89 (175) | 8.86 (225) | 10.83 (275) |
| D | 3.39 (86) | 3.78 (96) | 4.17 (106) | 5.24 (133) | 6.22 (158) | 7.20 (183) |
| K | 6.02 (150) | 7.42 (185) | 8.61 (215) | 11.81 (300) | 14.96 (380) | 17.91(455) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

## Technical Data

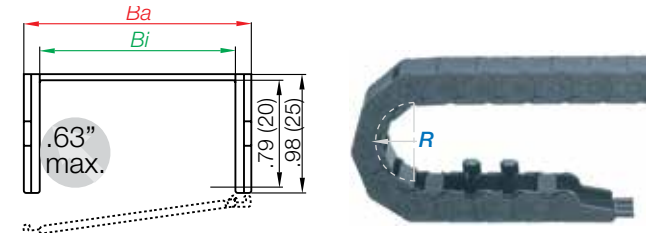
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series 14

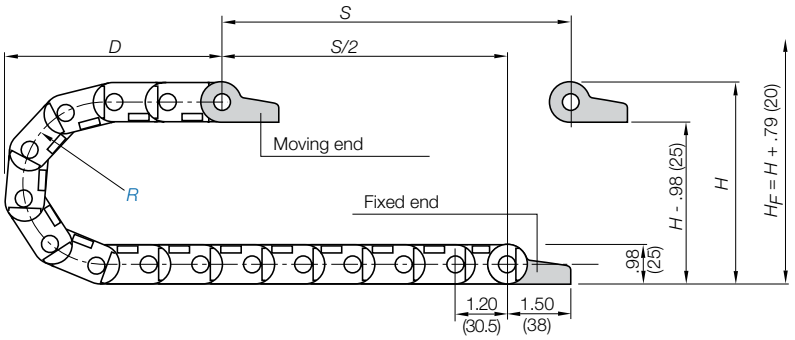
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 14 - E-Chain® snap-open alomg the inner radius



Part Number Structure

| 14- | 2- | 038- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |




Supplement part number with required radius. Example: 14-2-[038]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 14-1- | ☐ | -0 | .59 (15) | 1.02 (26) | ≈ 0.21 (0.31) |
| 14-2- | ☐ | -0 | .98 (25) | 1.42 (36) | ≈ 0.22 (0.32) |
| 14-3- | ☐ | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.27 (0.40) |
| 14-4- | ☐ | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.28 (0.41) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 14-2-[038]-0

| | 028 | 038 | 048 | 075 | 100 | 125 |
|---|---|---|---|---|---|---|
| R | 1.10 (028) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
| H | 3.19 (81) | 3.98 (101) | 4.76 (121) | 6.89 (175) | 8.86 (225) | 10.83 (275) |
| D | 3.39 (86) | 3.78 (96) | 4.17 (106) | 5.24 (133) | 6.22 (158) | 7.20 (183) |
| K | 6.02 (150) | 7.42 (185) | 8.61 (215) | 11.81 (300) | 14.96 (380) | 17.91(455) |

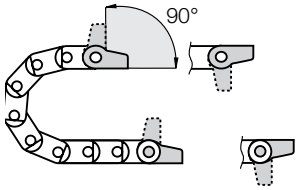
0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Mini
# Series 14
# Mounting Brackets

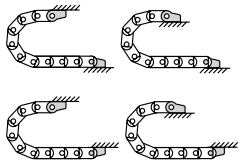
## Polymer, one-piece

- One-piece mounting bracket
- Corrosion resistant
- Available preassembled
- Inner and outer attachment possible
- Available with or without strain relief tiewrap plates

Moving end
114...1P(Z)



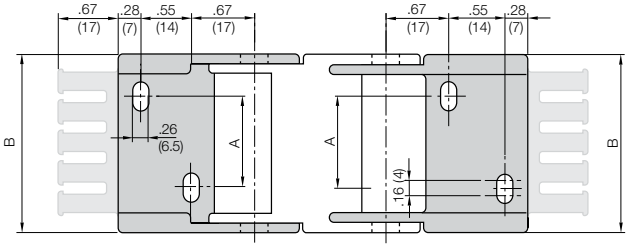

Fixed end
114...2P(Z)



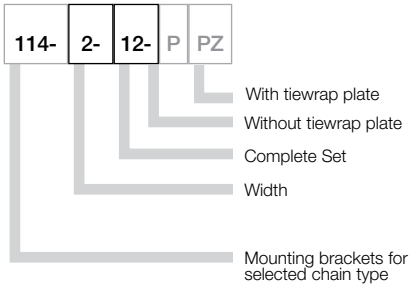
Possible installation configurations -

Moving end
114...1P(Z)

Fixed end
114...2P(Z)




Part Number Structure




| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|---|
| 14.1 | **114-1-12-PZ** | **114-1-12-P** | — | — | 1.04 | (26.3) |
| 14.2 | **114-2-12-PZ** | **114-2-12-P** | .39 | (10) | 1.43 | (36.3) |
| 14.3 | **114-3-12-PZ** | **114-3-12-P** | .91 | (23) | 1.94 | (49.3) |
| 14.4 | **114-4-12-PZ** | **114-4-12-P** | 1.38 | (35) | 2.41 | (61.3) |

**Full set, for both ends:**

114- 2- 12- PZ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

114- 2- 1- PZ Mounting bracket **with bore + tiewrap plate**

114- 2- 2- PZ Mounting bracket **with pin + tiewrap plate**

## Additional Accessories

**Quickfix -** mounting bracket with dowel, upon request
**Part No.**
**114-3-12QZ**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series B15 / B15i



## Price Index

Series B15 / B15i

## Special Features / Options

ESD Classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Features & Benefits

1. Large pins and double stop dog for superior life and long unsupported length
2. Mounting bracket with integrated strain relief
3. Can be opened along the outer radius (Series B15) or along the inner radius (Series B15i), these Series can be combined
4. Interior separation available
5. Dirt repellent exterior

## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If snap-open accessibility is required
- If a small but very stable chain is required

- If snap-open accessibility is not required
  ➤ **Series 10 E2 Mini**
- If quick insertion of cables is needed
  ➤ **Series E14 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **B15-025-038-0** | **E-Chain®** |
| With 2 separators **154** assembled every 2nd link | **Interior Separation** |
| 1 Set **1025-12PZ** | **Mounting Bracket** |

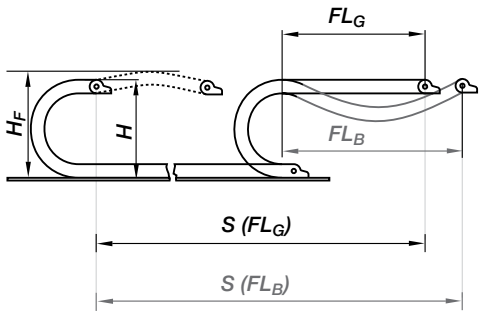
# E-Chain System® E2 Mini
# Series B15 / B15i
# Installation Dimensions

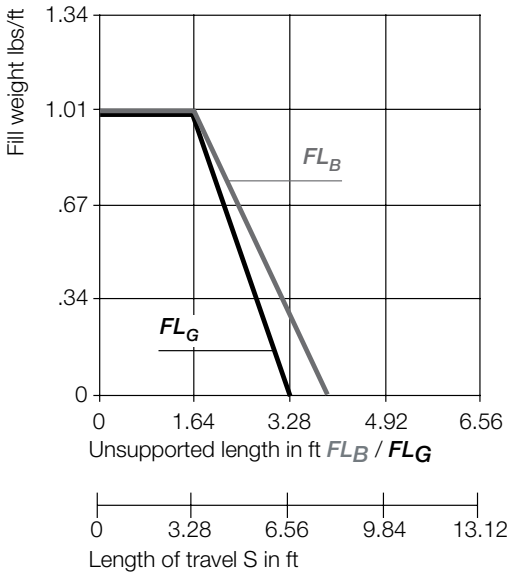
**Short travel, unsupported length**

● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



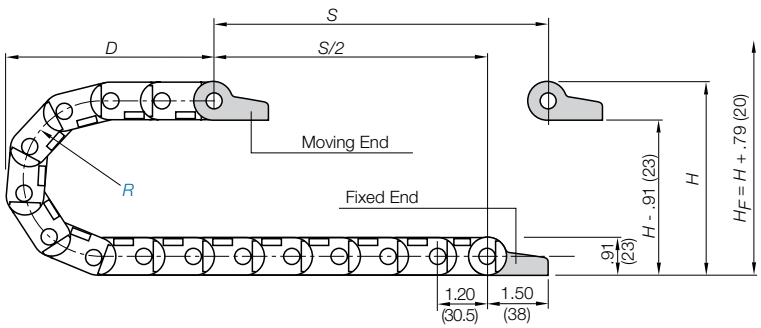




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
$H_F$ = Required clearance height




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + .79$ **in. (20 mm)** (with 1.01 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|---|
| H | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.74 (95) | 4.13 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.17 (182) | 7.95 (202) | 9.33 (237) |
| K | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series B15 / B15i

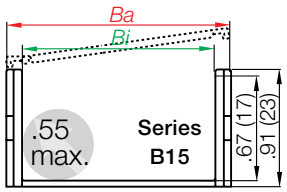


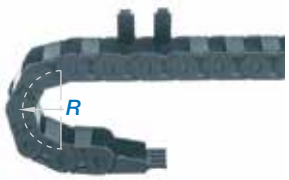
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

STANDARD

## Series B15 - Snap-open along the outer radius - Standard



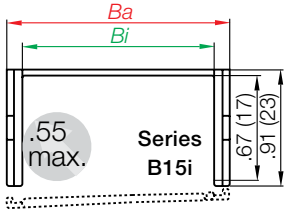



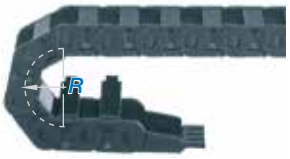

Part Number Structure

B15- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series

## Series B15i - Snap-open along the inner radius

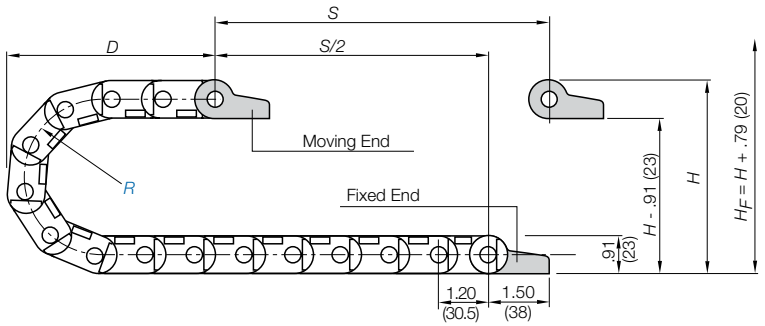



Part Number Structure

B15i- 025- 038- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: B15-025- 038 -0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

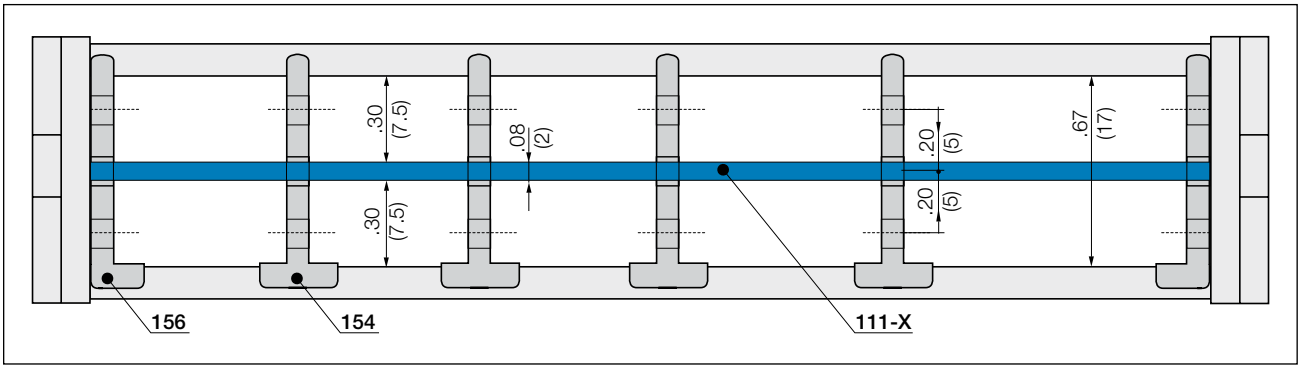
| Part Number Snap-open outer radius | Snap-open inner radius | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| B15-015- | B15i-015- | ☐ | -0 | .59 (15) | 1.02 (26) | ≈ 0.24 (0.35) |
| B15-025- | B15i-025- | ☐ | -0 | .98 (25) | 1.42 (36) | ≈ 0.27 (0.40) |
| B15-038- | B15i-038- | ☐ | -0 | 1.50 (38) | 1.93 (49) | ≈ 0.31 (0.46) |
| B15-050- | B15i-050- | ☐ | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.35 (0.52) |
| B15-5- | B15i-5- | ☐ | -0 | 2.48 (63) | 2.99 (76) | ≈ 0.42 (0.63) |
| B15-6- | B15i-6- | ☐ | -0 | 3.15 (80) | 3.70 (94) | ≈ 0.47 (0.70) |
| B15-7- | B15i-7- | ☐ | -0 | 3.94 (100) | 4.45 (113) | ≈ 0.51 (0.76) |

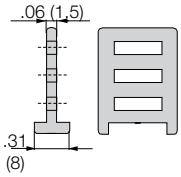
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: B15-025- 038 -0

| | 038 | 048 | 075 | 100 | 110 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|---|
| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 ( 145) | 7.09 (180) |
| H | 3.90 (99) | 4.69 (119) | 6.81 (173) | 8.78 (223) | 9.57 (243) | 10.75 (273) | 12.32 (313) | 15.08 (383) |
| D | 3.74 (95) | 4.13 (105) | 5.20 (132) | 6.18 (157) | 6.57 (167) | 7.17 (182) | 7.95 (202) | 9.33 (237) |
| K | 7.28 (185) | 8.46 (215) | 11.81 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Mini
# Series B15 / B15i
# Interior Separation

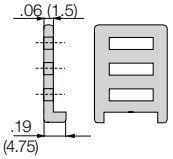





**Slotted separator for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 153** |
| Assembled | **Part No. 154** |

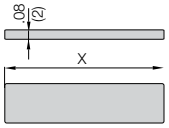
- **Slotted separator 153**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Side plate for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 155** |
| Assembled | **Part No. 156** |

- **Side plate 155**
  Side plate for use with full-width shelf 110-X and slotted separator 153




**Full width shelf for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .59 | (015) | **110-15** | **111-15** |
| .98 | (025) | **110-25** | **111-25** |
| 1.50 | (038) | **110-38** | **111-38** |
| 1.97 | (050) | **110-50** | **111-50** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.48 | (063) | **110-63** | **111-63** |
| 3.15 | (080) | **110-80** | **111-80** |
| 3.94 | (100) | **110-100** | **111-100** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

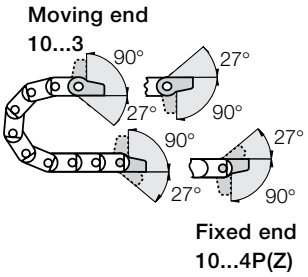
# E-Chain System® E2 Mini
# Series B15 / B15i
# Mounting Brackets - Plastic

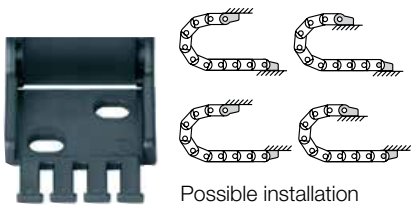
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

- Short and long travel
- Space-restricted conditions
- Corrosion resistant

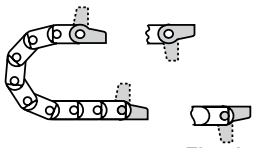


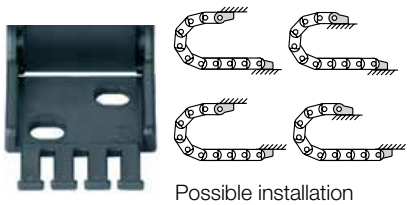


Possible installation configurations -

## Option 2: locking

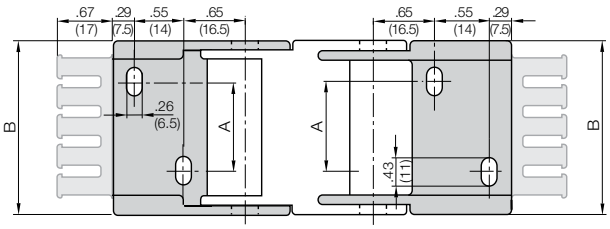
- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant



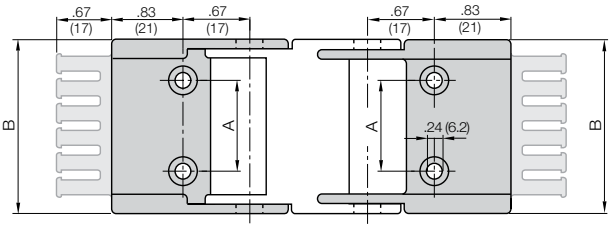


Possible installation configurations -

**For E-Chain B15/B15i-015 to B15/B15i-050**




**For E-Chain B15/B15i-5 to B15/B15i-7**




**Part Number Structure**

| 1025- | 34- | P | PZ |
|---|---|---|---|

- PZ: With tiewrap plate
- P: Without tiewrap plate
- 34-: Complete Set **12 = Locking 34 = Pivoting**
- 1025-: Mounting brackets for selected chain type

**Part number examples are shown for pivoting brackets. For locking brackets fill in the blank with 12**

**Part No. Full Set** (pivoting)
**with Tiewrap Plate**
**Series B15/B15i with 25mm inner width**
**1025-34PZ**

**Part No. Full Set** (pivoting)
**without Tiewrap Plate**
**Series B15/B15i with 25 mm inner width**
**1025-34P**

**Full set, for both ends:**
1025- 34- PZ Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
1025- 3- PZ Mounting bracket **with bore + tiewrap plate**
1025- 4- PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | Dimension A (mm) | Dimensions B in. | Dimensions B (mm) |
|---|---|---|---|---|---|---|
| B15/B15i-015 | 1015- ☐ PZ | 1015- ☐ P | — | — | 1.00 | (25.5) |
| B15/B15i-025 | 1025- ☐ PZ | 1025- ☐ P | .39 | (10) | 1.40 | (35.5) |
| B15/B15i-038 | 1038- ☐ PZ | 1038- ☐ P | .91 | (23) | 1.91 | (48.5) |
| B15/B15i-050 | 1050- ☐ PZ | 1050- ☐ P | 1.38 | (35) | 2.38 | (60.5) |
| B15/B15i-5 | 105- ☐ PZ | 105- ☐ P | 1.89 | (48) | 2.95 | (75.0) |
| B15/B15i-6 | 106- ☐ PZ | 106- ☐ P | 2.56 | (65) | 3.62 | (92.0) |
| B15/B15i-7 | 107- ☐ PZ | 107- ☐ P | 3.35 | (85) | 4.41 | (112.0) |

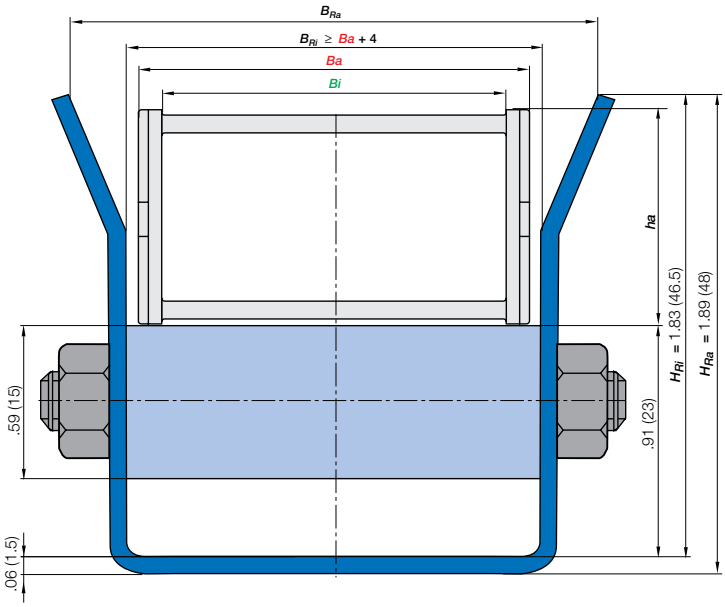
34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 1025- 34 PZ

# E-Chain System® E2 Mini
# Series B15 / B15i
# Guide Trough



One-piece guide troughs made of steel are available for the Series B15 Energy Chains®. These guide troughs are available from stock for outer chain widths up to 4.45 in. (113 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.




**Dimensions Guide troughs 91-10 — 91-71**

| For Series | Part No. | $B_{Ra}$ in. | $B_{Ra}$ (mm) | $B_{Ri}$ in. | $B_{Ri}$ (mm) | Weight lbs/ft | Weight (kg/m) |
|---|---|---|---|---|---|---|---|
| **B15/015** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-10** | 1.59 | (40.5) | 1.18 | (30) | 1.01 | (1.50) |
| Glide bar 6.56 ft. (2m section) | **91-11** | 1.59 | (40.5) | 1.18 | (30) | .30 | (.45) |
| **B15-025** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-20** | 1.99 | (50.5) | 1.57 | (40) | 1.11 | (1.65) |
| Glide bar 6.56 ft. (2m section) | **91-21** | 1.99 | (50.5) | 1.57 | (40) | .38 | (.57) |
| **B15-038** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-30** | 2.46 | (62.5) | 2.05 | (52) | 1.21 | (1.80) |
| Glide bar 6.56 ft. (2m section) | **91-31** | 2.46 | (62.5) | 2.05 | (52) | .46 | (.68) |
| **B15-050** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-40** | 2.85 | (72.5) | 2.44 | (62) | 1.28 | (1.90) |
| Glide bar 6.56 ft. (2m section) | **91-41** | 2.85 | (72.5) | 2.44 | (62) | .61 | (.91) |
| **B15-5** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-50** | 3.60 | (91.5) | 3.19 | (81) | 1.52 | (2.26) |
| Glide bar 6.56 ft. (2m section) | **91-51** | 3.60 | (91.5) | 3.19 | (81) | .84 | (1.25) |
| **B15-6** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-60** | 4.27 | (108.5) | 3.86 | (98) | 1.83 | (2.72) |
| Glide bar 6.56 ft. (2m section) | **91-61** | 4.27 | (108.5) | 3.86 | (98) | .91 | (1.35) |
| **B15-7** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-70** | 5.06 | (128.5) | 4.65 | (118) | 2.13 | (3.17) |
| Glide bar 6.56 ft. (2m section) | **91-71** | 5.06 | (128.5) | 4.65 | (118) | 1.14 | (1.70) |

**Trough material in general: St 1203 galvanized**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series B17/B17i



## Price Index

Series B17

## Special Features / Options

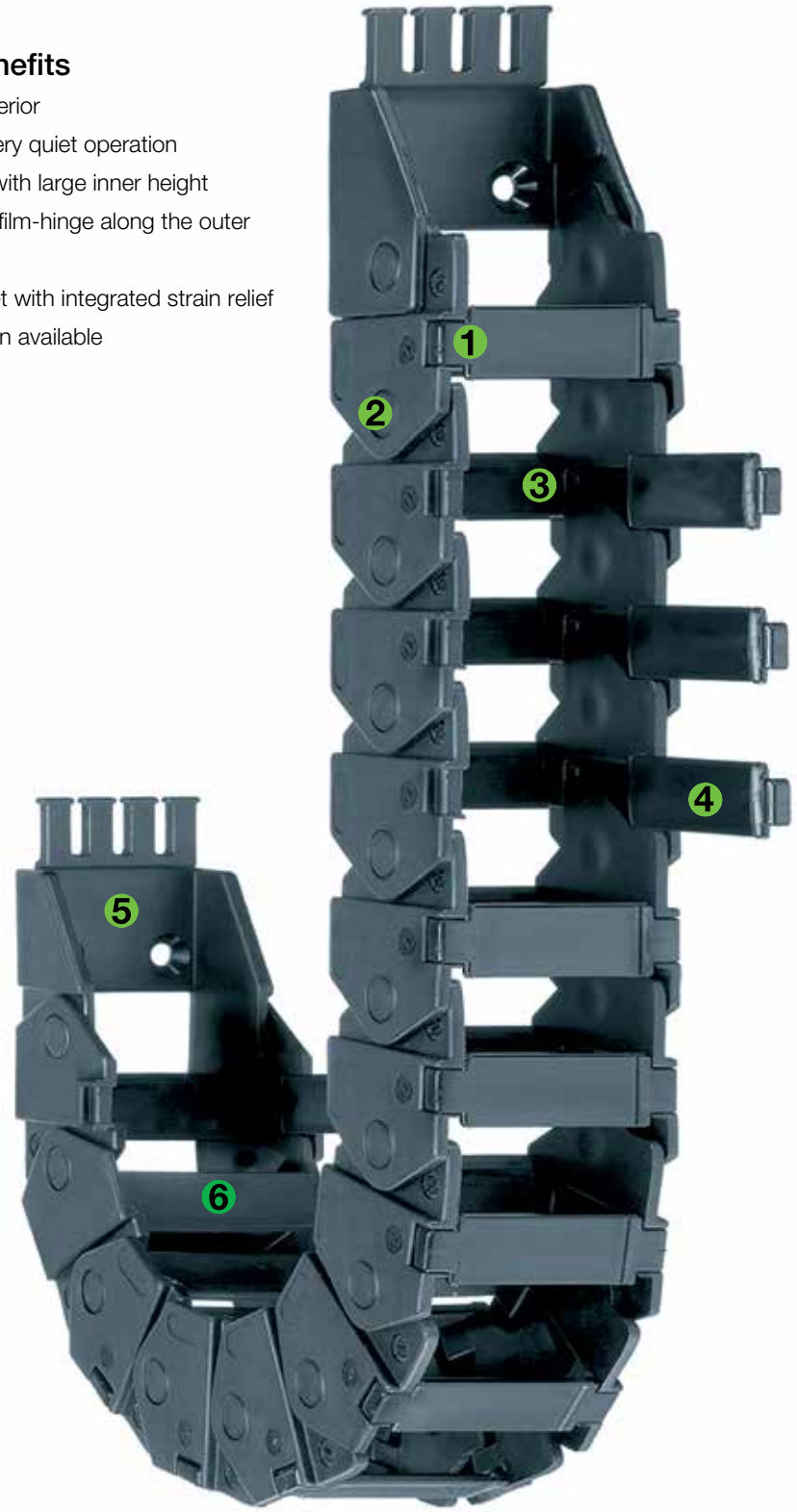
Special Equipment:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Features & Benefits

1. Dirt-repellent exterior
2. Small pitch for very quiet operation
3. Small E-Chain® with large inner height
4. Snap-open with film-hinge along the outer
5. radius
6. Mounting bracket with integrated strain relief

Interior separation available




## Assembly Tips

Easy to assemble and disassemble

## Usage Guidelines

- If snap-open accessibility is required
- If a rather small chain with a broad inner width is required

- If quick opening of the links is required
  ➤ **Series 17 Zipper**
- If quick insertion of cables with preassembled connectors is required
  ➤ **Series E16 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

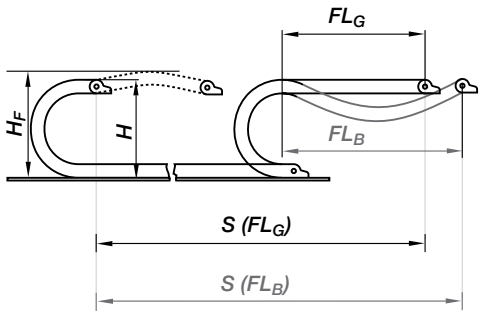
| | |
|---|---|
| 3.28 ft (1 m) **B17-1-063-0** | **E-Chain®** |
| With 2 separators **172** assembled every 2nd link | **Interior Separation** |
| 1 Set **117-1-12PZ** | **Mounting Bracket** |

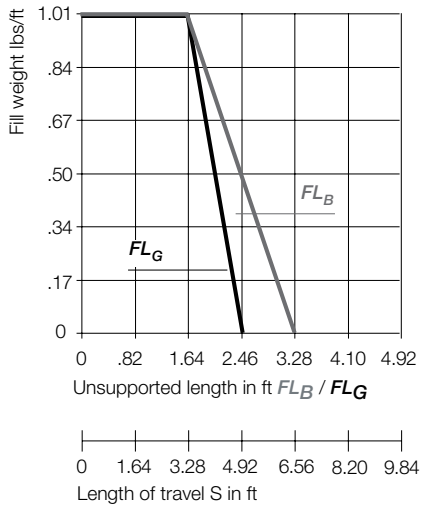
# E-Chain System® E2 Mini
# Series B17/B17i
# Installation Dimensions

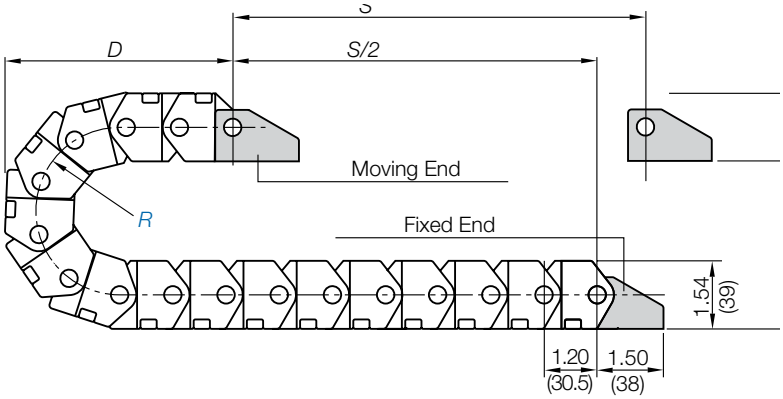
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F$ **= H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.89 (048) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
|---|---|---|---|---|---|
| H | 5.31 (135) | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 4.45 (113) | 5.04 (128) | 5.51 (140) | 6.50 (165) | 7.48 (190) |
| K | 8.46 (215) | 10.24 (260) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
**➤ Chapter 1**



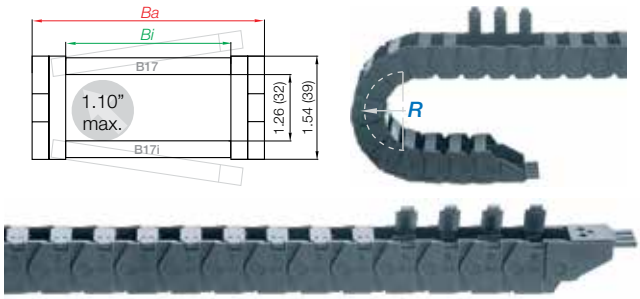
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series B17/B17i

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

STANDARD

## Series B17 - Snap-open along the outer radius - Standard

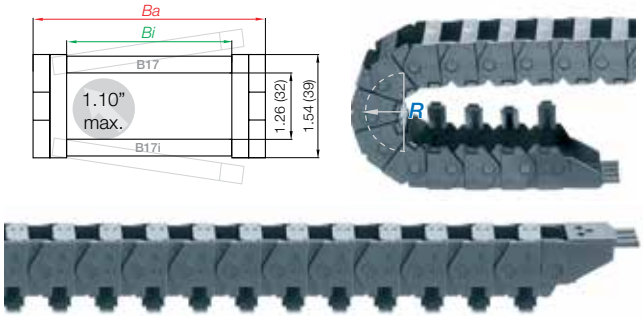



Part Number Structure

| B17- | 2- | 075- | 0 |
|---|---|---|---|

Color - Black
Bending radius
Width
Series

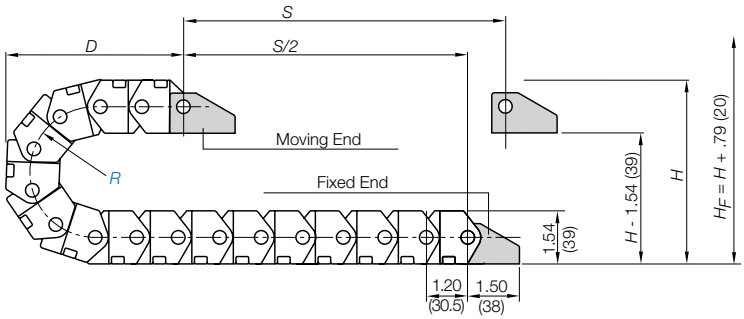
## Series B17i - Snap-open along the inner radius




Part Number Structure

| B17i- | 2- | 075- | 0 |
|---|---|---|---|

Color - Black
Bending radius
Width
Series




Supplement part number with required radius. Example: B17-2-[063]-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part number Snap-open along outer radius | Part number Snap-open along inner radius | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| B17-1- | — | [ ] -0 | .59 (15) | 1.00 (25.5) | ≈ 0.35 (0.52) |
| B17-2- | B17i-2- | [ ] -0 | .98 (25) | 1.40 (35.5) | ≈ 0.40 (0.59) |
| B17-3- | B17i-3- | [ ] -0 | 1.50 (38) | 1.91 (48.5) | ≈ 0.44 (0.65) |
| B17-4- | B17i-4- | [ ] -0 | 1.97 (50) | 2.38 (60.5) | ≈ 0.47 (0.70) |
| B17-5- | — | [ ] -0 | 2.48 (63) | 2.99 (76) | ≈ 0.56 (0.83) |
| B17-6 | — | [ ] -0 | 3.15 (80) | 3.66 (93) | ≈ 0.62 (0.92) |
| B17-7 | — | [ ] -0 | 3.94 (100) | 4.45 (113) | ≈ 0.71 (1.06) |

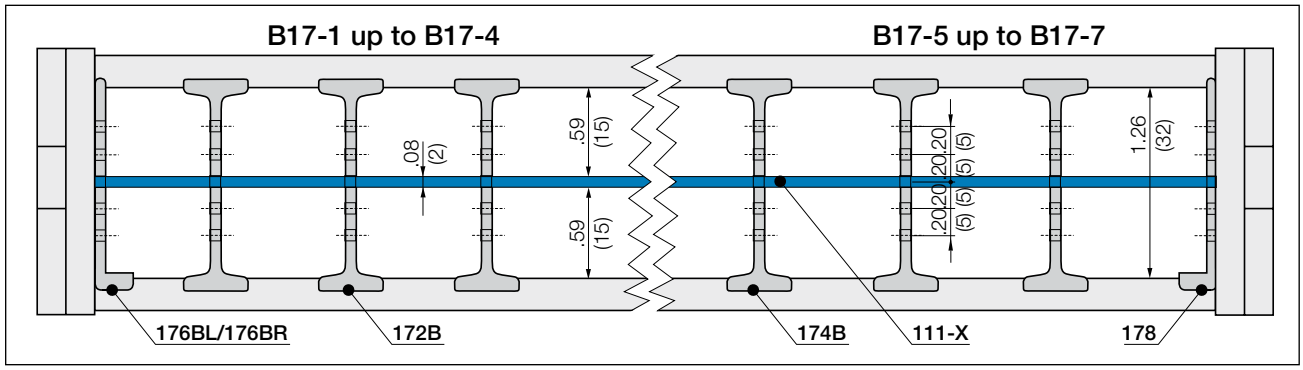
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: B17-2-[075]-0

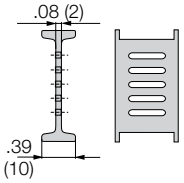
| | 048** | 063* | 075 | 100* | 125* |
|---|---|---|---|---|---|
| R | 1.89 (048) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) |
| H | 5.31 (135) | 6.50 (165) | 7.44 (189) | 9.41 (239) | 11.38 (289) |
| D | 4.45 (113) | 5.04 (128) | 5.51 (140) | 6.50 (165) | 7.48 (190) |
| K | 8.46 (215) | 10.24 (260) | 11.81 (300) | 14.96 (380) | 17.91 (455) |

* Radii 063, 100, 125 not available for the B17i-3
** Radius 048 is not available for the B17-5 or B17-7

0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Mini
# Series B17/B17i
# Interior Separation

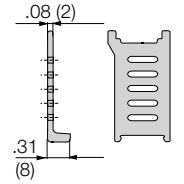





**Slotted separator for B17-1 up to B17-4**

| | |
|---|---|
| Unassembled | **Part No. 171B** |
| Assembled | **Part No. 172B** |

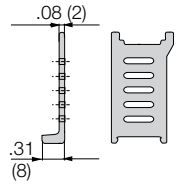
- **Slotted separator 171B**
  (B17-1 up to B17-4)
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Side plate (left) for B17-1 up to B17-4**

| | |
|---|---|
| Unassembled | **Part No. 175BL** |
| Assembled | **Part No. 176BL** |

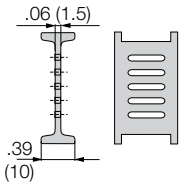
- **Side plate 175BL**
  (B17-1 up to B17-4)
  Side plate (left) for use with full-width shelf 110-X and slotted separator 171B




**Side plate (right) for B17-1 up to B17-4**

| | |
|---|---|
| Unassembled | **Part No. 175BR** |
| Assembled | **Part No. 176BR** |

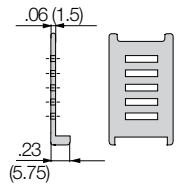
- **Side plate 175BR**
  (B17-1 up to B17-4)
  Side plate (right) for use with full-width shelf 110-X and slotted separator 171B




**Slotted separator for B17-5 up to B17-7**

| | |
|---|---|
| Unassembled | **Part No. 173B** |
| Assembled | **Part No. 174B** |

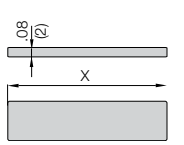
- **Slotted separator 173B**
  (B17-5 up to B17-7)
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Side plate for B17-5 up to B17-7**

| | |
|---|---|
| Unassembled | **Part No. 177** |
| Assembled | **Part No. 178** |

- **Side plate 177**
  (B17-5 up to B17-7)
  Side plate for use with full-width shelf 110-X and slotted separator 173B




**Full width shelf, for all widths**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  this option makes sense in applications with many thin cables with similar diameters. Full width shelves can be arranged at 5 different heights in .20" (5 mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .59 | (015) | **110-15** | **111-15** |
| .98 | (025) | **110-25** | **111-25** |
| 1.50 | (038) | **110-38** | **111-38** |
| 1.97 | (050) | **110-50** | **111-50** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.48 | (063) | **110-63** | **111-63** |
| 3.15 | (080) | **110-80** | **111-80** |
| 3.94 | (100) | **110-100** | **111-100** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Mini
# Series B17/B17i
# Mounting Brackets - Plastic



Telephone 1-800-521-2747
Fax 1-401-438-7270

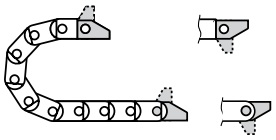
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

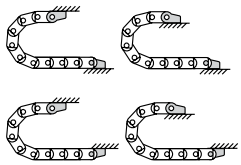
Standard

## Option: locking

- One-piece mounting bracket
- Corrosion resistant
- Available pre-assembled
- Inner and outer attachment possible
- With or without strain relief tiewrap plates

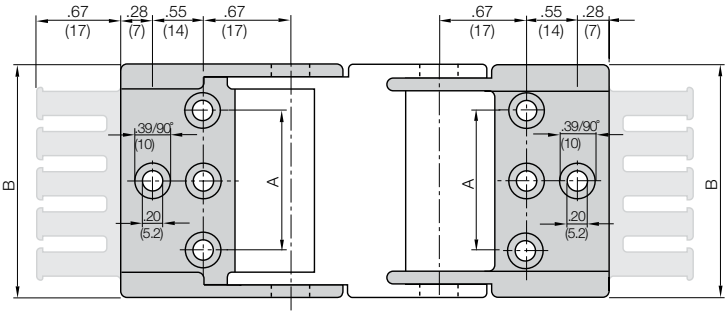
**Moving end with bore**
**117...1P(Z)**



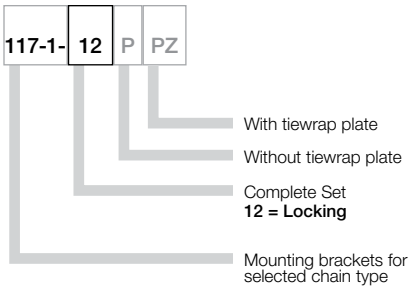


Possible installation configurations -

**Fixed end with pin**
**117...2P(Z)**



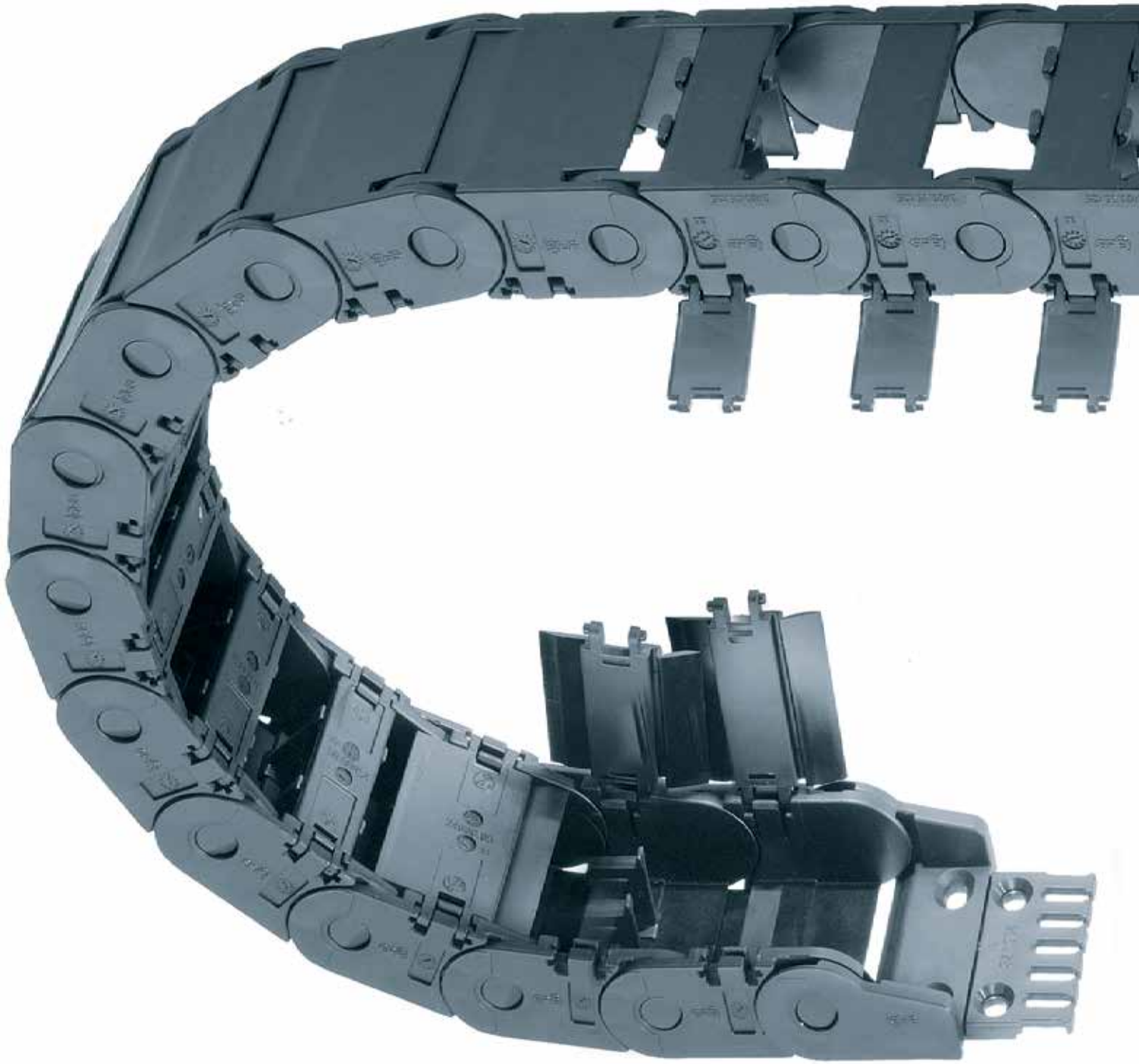

**Part Number Structure**

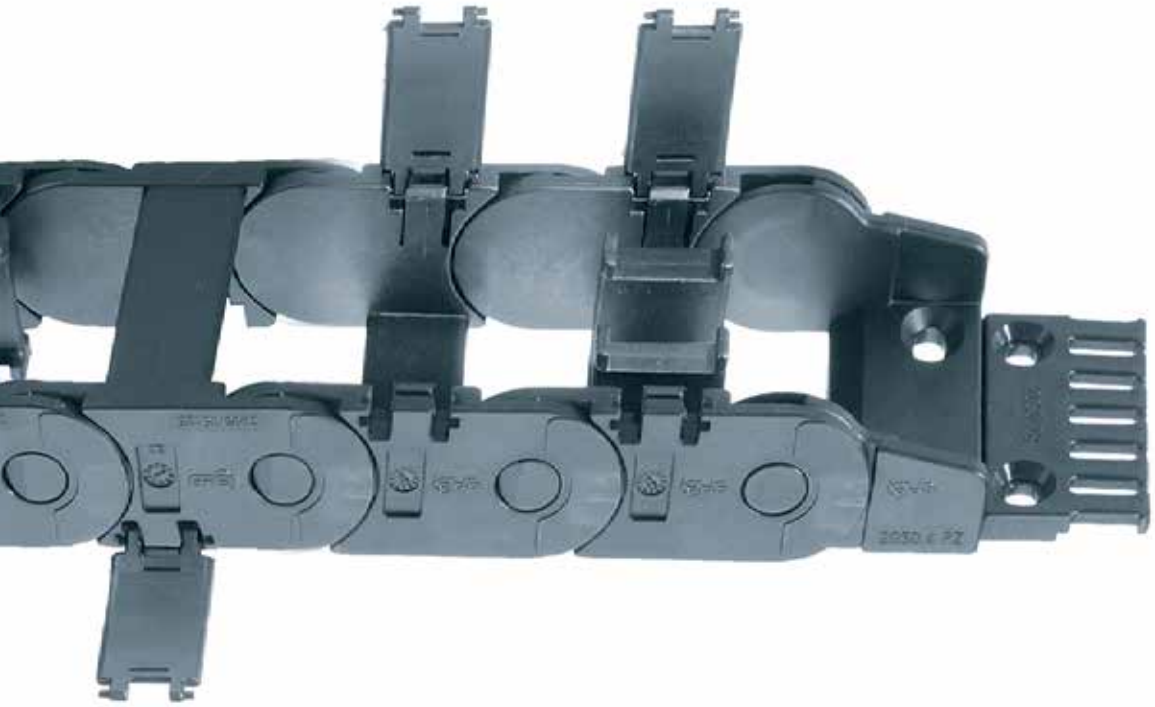



**Full set, for both ends:**
117-1-12-PZ Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
117-1-1-PZ Mounting bracket **with bore + tiewrap plate**
117-1-2-PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Number of Teeth | Dimension A in. | (mm) | Dimensions B in. | (mm) |
|---|---|---|---|---|---|---|---|
| B17-1 | **117-1-12PZ** | **117-1-12P** | 2 | — | — | 1.00 | (25.5) |
| B17/B17i-2 | **117-2-12PZ** | **117-2-12P** | 3 | .47 | (12) | 1.40 | (35.5) |
| B17/B17i-3 | **117-3-12PZ** | **117-3-12P** | 4 | .98 | (25) | 1.91 | (48.5) |
| B17/B17i-4 | **117-4-12PZ** | **117-4-12P** | 5 | 1.46 | (37) | 2.38 | (60.5) |
| B17-5 | **117-5-12PZ** | **117-5-12P** | 6 | 1.89 | (48) | 2.99 | (76.0) |
| B17-6 | **117-6-12PZ** | **117-6-12P** | 8 | 2.56 | (65) | 3.66 | (93.0) |
| B17-7 | **117-7-12PZ** | **117-7-12P** | 10 | 3.35 | (85) | 4.45 | (113.0) |

**117-1-P(Z): Center bores only**
**117-2-12P(Z) - 117-7-P(Z): Outer bores only**





# igus®
# E2/000

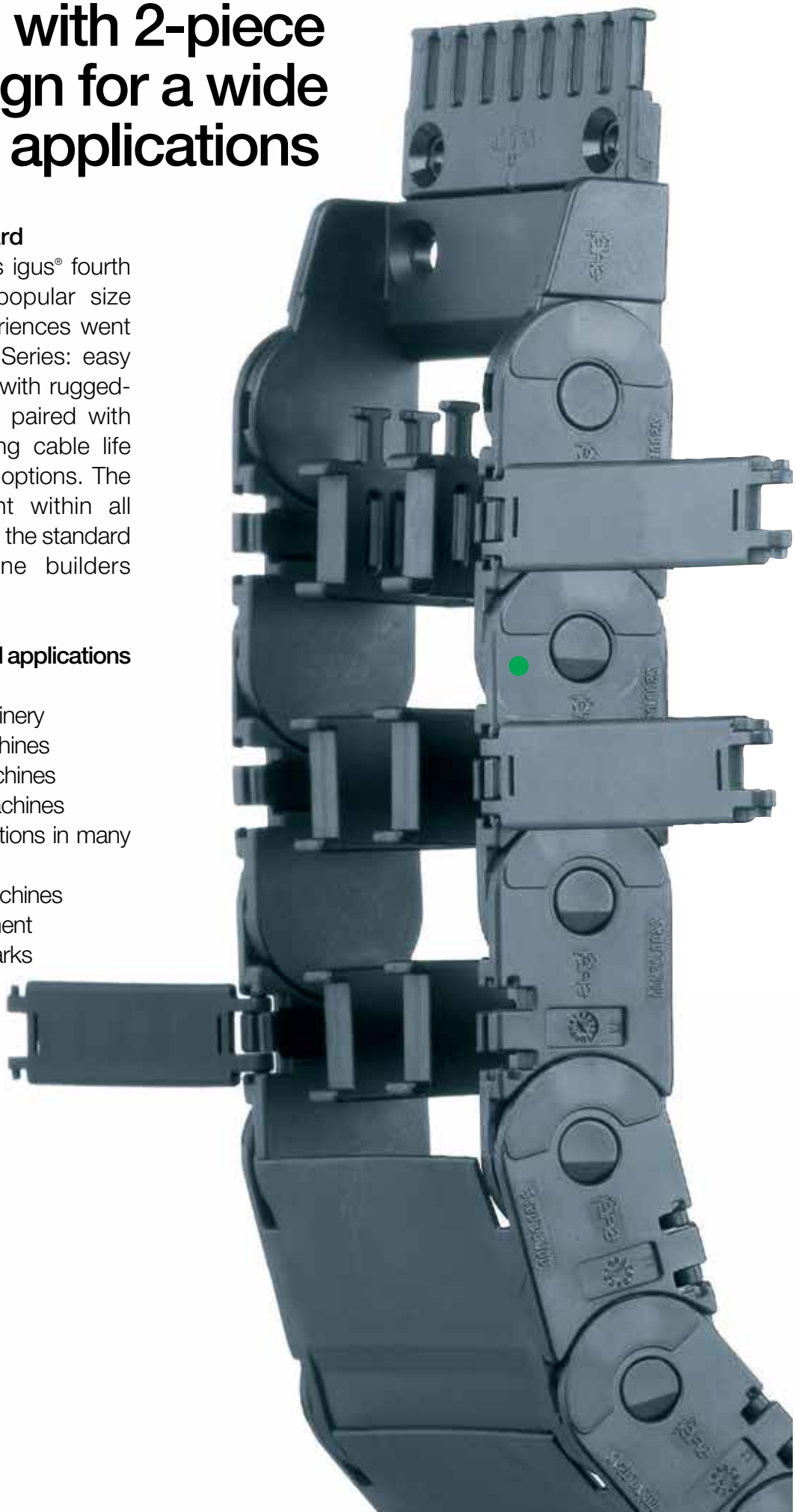
# E2/000 - with 2-piece link-design for a wide range of applications

**E2/000 - the standard**

The E2/000 Series is igus® fourth generation in this popular size range. All past experiences went into this Millennium Series: easy assembly combined with ruggedness - high stability paired with quieter motion - long cable life and many mounting options. The design is consistent within all E2/000 variations. It is the standard product for machine builders around the world.

**Typical industries and applications**

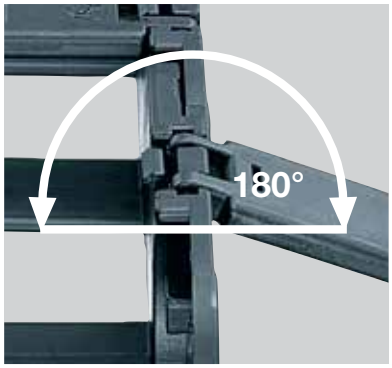
- Material handling
- Construction machinery
- Woodworking machines
- Glass handling machines
- Plastic handling machines
- Long travel applications in many industries
- Semiconductor machines
- Theatre, entertainment and amusement parks
- Vehicles
- General machinery



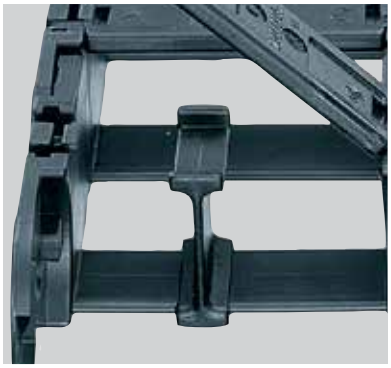
Harnessed E2/000 E-Chain® - turnkey solution delivered with cables and sheet metal parts attached and ready for installation

# E2/000 features

New snap-open mechanism, choice of snap-open on left or right



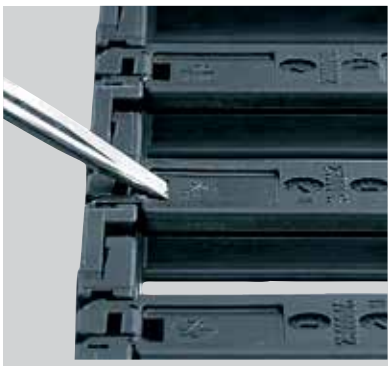

Hinged crossbar can be swiveled by more than 180° on both sides



Secure fit of separators and interior separation even when E-Chain® is open

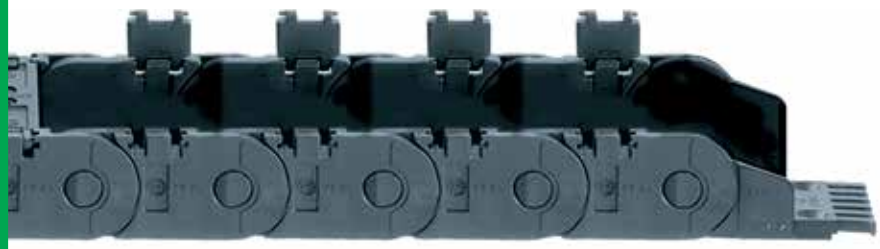
Half E-Tube - Fully enclosed in outer radius. Choice of swiveling interior radius to the left or right

Lightning-fast closing by the touch of a thumb - secure fit without additional locking devices



Opening mechanism accessible from above - rapid opening with a screwdriver or the E-Chain® opener

# E-Chain System® E2/000
# Selection Guide



## E2/000 E-Chains®
## Standard for System E2
snap-open along outer radius from both sides

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **1500** | .83 | (21) | .59-4.92 | (15 - 125) | 1.12-5.45 | (28.5 - 138.5) | 1.10 | (28) | 1.38-7.09 | (35 - 180) |
| **2500** | .98 | (25) | .98-4.92 | (25 - 125) | 1.61-5.55 | (41.0 - 141.0) | 1.38 | (35) | 2.44-9.84 | (55 - 250) |
| **2700** | 1.38 | (35) | 1.97-6.89 | (50 - 175) | 2.60-7.64 | (66.0 - 194.0) | 1.97 | (50) | 2.48-9.84 | (63 - 250) |
| **3500** | 1.77 | (45) | 1.97-9.84 | (50 - 250) | 2.76-10.63 | (70.0 - 270.0) | 2.52 | (64) | 2.95-11.81 | (75 - 300) |
| **255** | .94 | (24) | 1.50-4.06 | (38 - 103) | 2.13-4.69 | (54.0 - 119.0) | 1.38 | (35) | 2.17-9.84 | (55 - 250) |

## E2/000 E-Chains®
snap-open along inner radius from both sides

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1400** | .83 | (21) | .59-4.92 | (15 - 125) | 1.12-5.45 | (28.5 - 138.5) | 1.10 | (28) | 1.38-7.09 | (35 - 180) |
| **2400** | .98 | (25) | .98-4.92 | (25 - 125) | 1.61-5.55 | (41.0 - 141.0) | 1.38 | (35) | 2.44-9.84 | (55 - 250) |
| **2600** | 1.38 | (35) | 1.97-6.89 | (50 - 175) | 2.60-7.64 | (66.0 - 194.0) | 1.97 | (50) | 2.48-9.84 | (63 - 250) |
| **3400** | 1.77 | (45) | 1.97-9.84 | (50 - 250) | 2.76-10.63 | (70.0 - 270.0) | 2.52 | (64) | 2.95-11.81 | (75 - 300) |

## Half E-Tubes
snap-open along inner radius from both sides

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1450** | .83 | (21) | .59-4.92 | (15 - 125) | 1.12-5.45 | (28.5 - 138.5) | 1.10 | (28) | 2.95-7.09 | (75 - 180) |
| **2450** | .98 | (25) | .98-4.92 | (25 - 125) | 1.61-5.55 | (41.0 - 141.0) | 1.38 | (35) | 2.95-9.84 | (75 - 250) |
| **2650** | 1.38 | (35) | 1.97-6.89 | (50 - 175) | 2.60-7.64 | (66.0 - 194.0) | 1.97 | (50) | 3.94-9.84 | (100 - 250) |
| **3450** | 1.77 | (45) | 1.97-9.84 | (50 - 250) | 2.76-10.63 | (70.0 - 270.0) | 2.52 | (64) | 4.92-11.81 | (125 - 300) |

## Full E-Tubes
snap-open along inner radius from both sides

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **1480** | .83 | (21) | .59-4.92 | (15 - 125) | 1.12-5.45 | (28.5 - 138.5) | 1.10 | (28) | 2.95-7.09 | (75 - 180) |
| **2480** | .98 | (25) | .98-4.92 | (25 - 125) | 1.61-5.55 | (41.0 - 141.0) | 1.38 | (35) | 2.95-9.84 | (75 - 250) |
| **2680** | 1.38 | (35) | 1.97-6.89 | (50 - 175) | 2.60-7.64 | (66.0 - 194.0) | 1.97 | (50) | 3.94-9.84 | (100 - 250) |
| **3480** | 1.77 | (45) | 1.97-9.84 | (50 - 250) | 2.76-10.63 | (70.0 - 270.0) | 2.52 | (64) | 4.92-11.81 | (125 - 300) |

# E-Chain System® E2/000
# Assembly Instructions

## E-Chains® - Opening and Closing E2 Series R1000 E-Tubes

Open: swivel lids

Close: push and snap

Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

Remove lid

## E-Chains® - Separating E2 Series R1000 E-Tubes

Release side link

Twist and pull apart

# E-Chain System® E2/000
# Series 1400/1500

.83 .83

## Price Index

Series 1400/1450/1500

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 HB

## Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 65.6 ft (20 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. ≤ 2.30 ft (0.7 m) |
| Rotary requires further calculation |

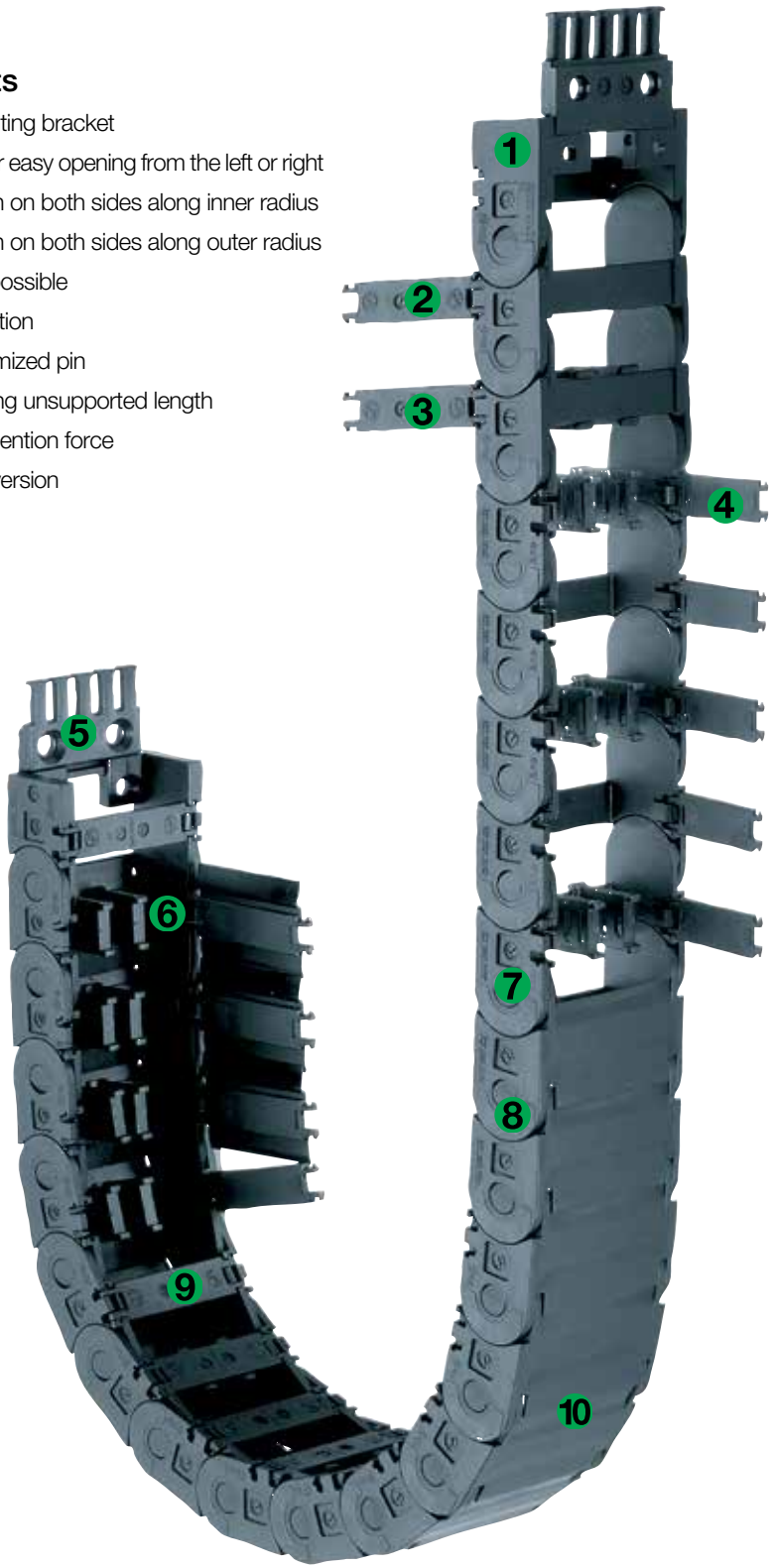
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If half E-Tube is required (Series 1450)
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1400 snap-open on both sides along inner radius
4. Series 1500 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **1400-038-100-0** | **E-Chain®** |
| With 2 separators **14011** assembled every 2nd link | **Interior Separation** |
| 1 Set **15000-038-34PZB** | **Mounting Bracket** |

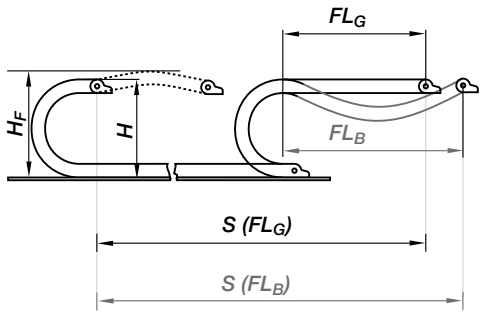
# E-Chain System® E2/000
# Series 1400/1500
# Installation Dimensions

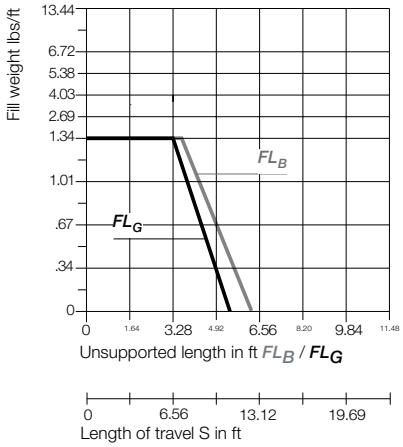


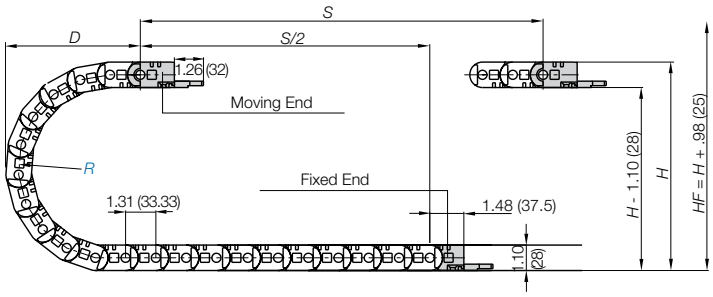
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.31" (33.3 mm)
**Links per ft (m): =** 9.14 (30)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H + .98$ in. (25 mm) (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.38 (035) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|---|
| H | 3.86 (98) | 4.09 (104) | 4.88 (124) | 7.01 (178) | 8.98 (228) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 3.90 (99) | 4.02 (102) | 4.41 (112) | 5.47 (139) | 6.46 (164) | 7.44 (189) | 8.23 (209) | 9.61 (244) |
| K | 7.09 (180) | 7.48 (190) | 8.66 (220) | 12.01 (305) | 15.16 (385) | 18.11 (460) | 20.67 (525) | 25.00 (635) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

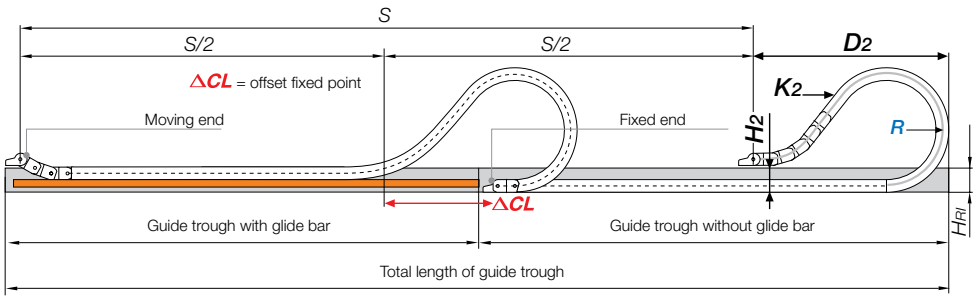
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K = π • R + safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 1.38 (035) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | – | – | – | – | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2^{+25}$ | – | – | – | – | 13.39 (340) | 19.49 (495) | 21.26 (540) | 27.17 (690) |
| $K_2$ | – | – | – | – | 23.62 (600) | 31.50 (800) | 37.01 (940) | 46.06 (1170) |
| ΔCL | – | – | – | – | 7.05 (179) | 12.01 (305) | 13.39 (340) | 17.52 (445) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

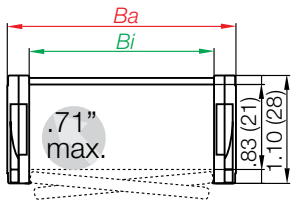
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

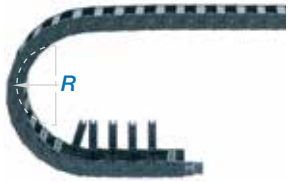
➤ Chapter 9

# E-Chain System® E2/000
# Series 1400/1500

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 1400 - Snap-open along the inner radius



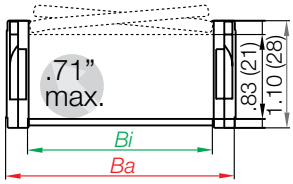



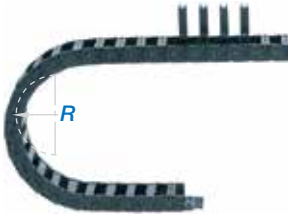

Part Number Structure

1400- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series

## Series 1500 - Snap open along the outer radius

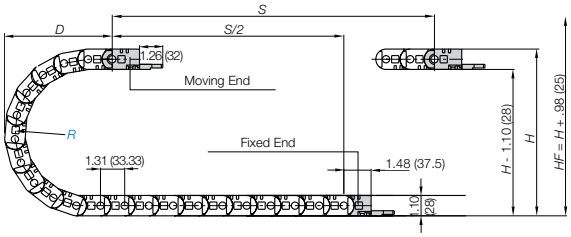



Part Number Structure

1500- 038- 100- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: 1400-038-100 -0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

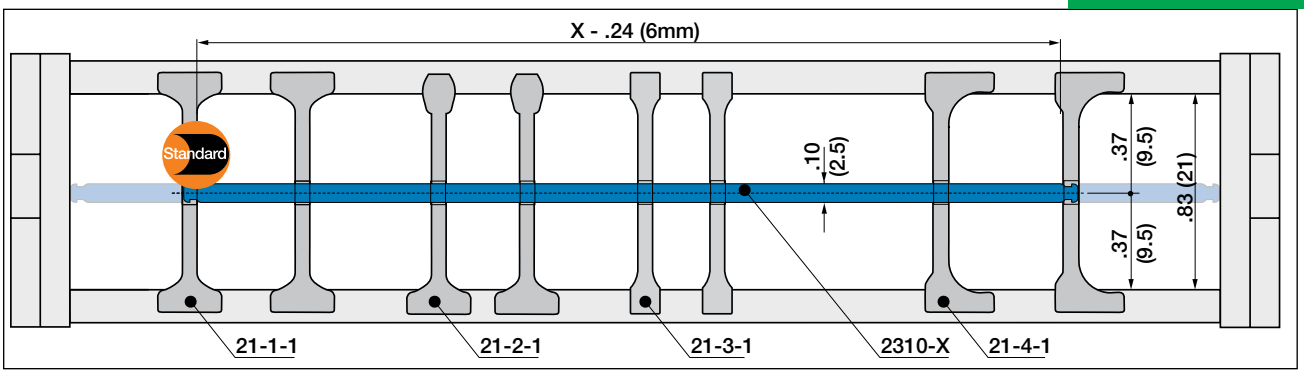
| Part Number Snap-open Inner Radius | Part Number Snap-open Outer Radius | | Bi in. (mm) | Ba in. (mm) | Weight 1400/1500 lbs/ft (kg/m) | Weight 1450 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| 1400-015- | 1500-015- | -0 | .59 (15) | 1.12 (28.5) | ≈ 0.31 (0.46) | ≈ 0.32 (0.48) |
| 1400-020- | 1500-020- | -0 | .79 (20) | 1.32 (33.5) | ≈ 0.32 (0.47) | – |
| 1400-025- | 1500-025- | -0 | .98 (25) | 1.52 (38.5) | ≈ 0.33 (0.49) | ≈ 0.38 (0.57) |
| 1400-038- | 1500-038- | -0 | 1.50 (38) | 2.03 (51.5) | ≈ 0.36 (0.53) | ≈ 0.40 (0.59) |
| 1400-050- | 1500-050- | -0 | 1.97 (50) | 2.50 (63.5) | ≈ 0.38 (0.56) | ≈ 0.44 (0.65) |
| 1400-068- | 1500-068- | -0 | 2.68 (68) | 3.21 (81.5) | ≈ 0.42 (0.63) | ≈ 0.50 (0.74) |
| 1400-080- | 1500-080- | -0 | 3.15 (80) | 3.68 (93.5) | ≈ 0.45 (0.67) | ≈ 0.54 (0.80) |
| 1400-100- | 1500-100- | -0 | 3.94 (100) | 4.47 (113.5) | ≈ 0.50 (0.74) | ≈ 0.60 (0.90) |
| 1400-125- | 1500-125- | -0 | 4.92 (125) | 5.45 (138.5) | ≈ 0.56 (0.83) | ≈ 0.69 (1.03) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 1400-038-100 -0

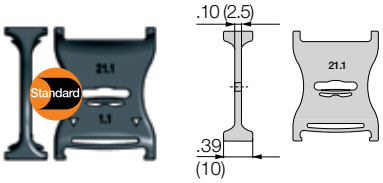
| | 035 | 038 | 048 | 075 | 100 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|---|
| R | 1.38 (035) | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.71 (145) | 7.09(180) |
| H+4 | 3.86 (98) | 4.09 (104) | 4.88 (124) | 7.01 (178) | 8.98 (228) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 3.90 (99) | 4.02 (102) | 4.41 (112) | 5.47 (139) | 6.46 (164) | 7.44 (189) | 8.23 (209) | 9.61 (244) |
| K | 7.09 (180) | 7.48 (190) | 8.66 (220) | 12.01 (305) | 15.16 (385) | 18.11 (460) | 20.67 (525) | 25.00 (635) |

# E-Chain System® E2/000
# Series 1400/1500
# Interior Separation - New Generation





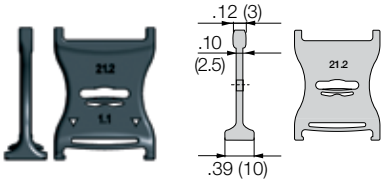

**In the standard configuration separators are assembled every 2nd E-Chain® link**
**Note: Only suitable for E-Chain® Series 1400/1500**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 21.1** |
| Assembled | **Part No. 21.1.1** |

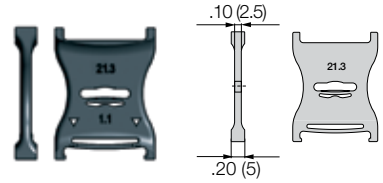
- **Standard separator 21.1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 21.2** |
| Assembled | **Part No. 21.2.1** |

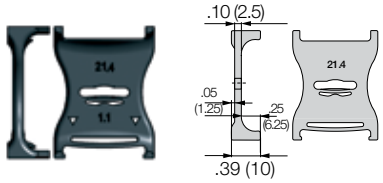
- **Separator 21.2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 21.3** |
| Assembled | **Part No. 21.3.1** |

- **Separator 21.3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

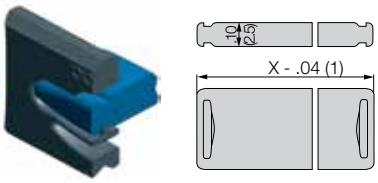



**Separator, assymetrical**

| | |
|---|---|
| Unassembled | **Part No. 21.4** |
| Assembled | **Part No. 21.4.1** |

- **Separator 21.4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 015 | **2300-15** | **2310-15** | 060 | **2300-60** | **2310-60** | 087 | **2300-87** | **2310-87** |
| 025 | **2300-25** | **2310-25** | 062 | **2300-62** | **2310-62** | 090 | **2300-90** | **2310-90** |
| 030 | **2300-30** | **2310-30** | 065 | **2300-65** | **2310-65** | 100 | **2300-100** | **2310-100** |
| 038 | **2300-38** | **2310-38** | 070 | **2300-70** | **2310-70** | 103 | **2300-103** | **2310-103** |
| 040 | **2300-40** | **2310-40** | 075 | **2300-75** | **2310-75** | 110 | **2300-110** | **2310-110** |
| 050 | **2300-50** | **2310-50** | 077 | **2300-77** | **2310-77** | 120 | **2300-120** | **2310-120** |
| 057 | **2300-57** | **2310-57** | 080 | **2300-80** | **2310-80** | 125 | **2300-125** | **2310-125** |

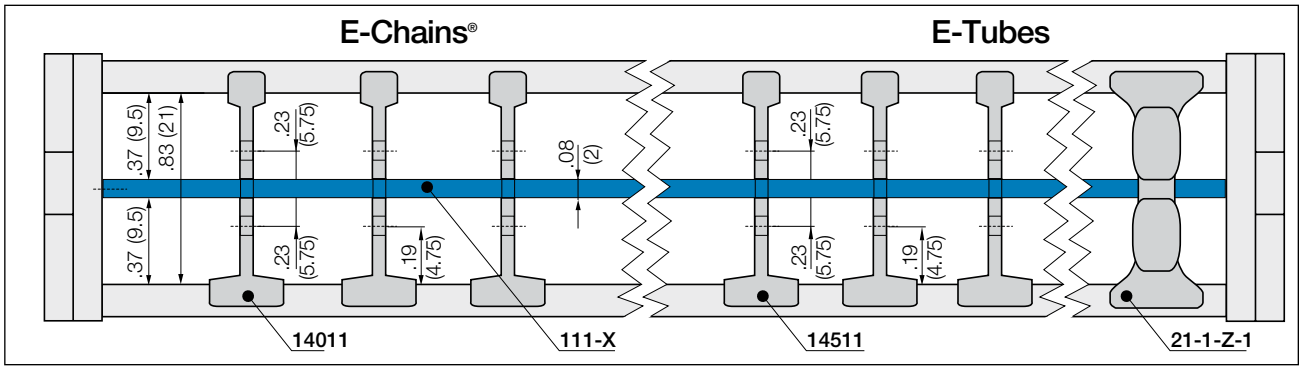
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 1400/1500
# Mounting Brackets - One Piece

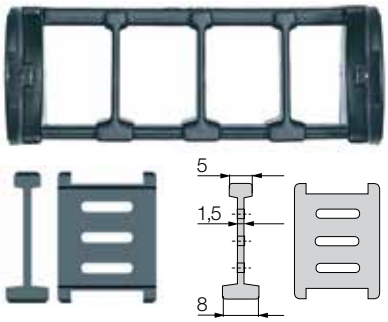
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

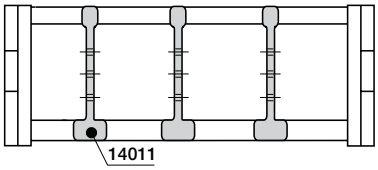
## Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




### Separators, full-width shelves, Strain relief separators
### In the standard configuration separators are assembled every 2nd E-Chain® link



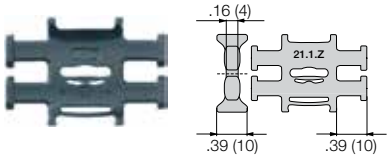

**Slotted separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 14001** |
| Assembled | **Part No. 14011** |

- **Slotted separator 14001 (Chains only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Option 2: Strain relief separator

Can be integrated into the mounting bracket and can be placed there at any position. To be used assembled on either the first or last E-Chain® link. Ideal for restricted space conditions.



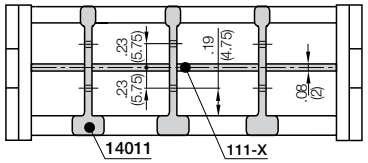

**Strain relief separator for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 21.1.Z** |
| Assembled | **Part No. 21.1.Z.1** |

- **Slotted separator 21.1.Z (Chains only)** It combines strain relief and interior separation.

## Option 3: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 0.59 | (15) | **110-15** | **111-15** |
| 0.79 | (20) | **110-20** | **111-20** |
| 0.98 | (25) | **110-25** | **111-25** |
| 1.50 | (38) | **110-38** | **111-38** |
| 1.97 | (50) | **110-50** | **111-50** |
| 2.68 | (68) | **110-68** | **111-68** |
| 3.15 | (80) | **110-80** | **111-80** |
| 3.94 | (100) | **110-100** | **111-100** |
| 4.92 | (125) | **110-125** | **111-125** |

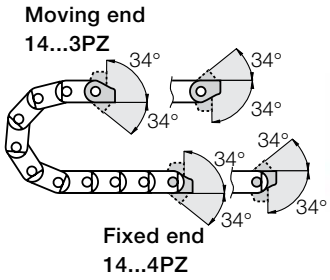
- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

# E-Chain System® E2/000
# Series 1400/1500
# Mounting Brackets - Plastic

Standard

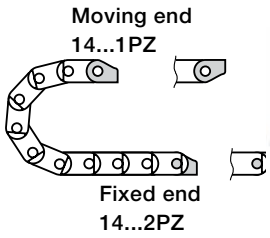
## Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions

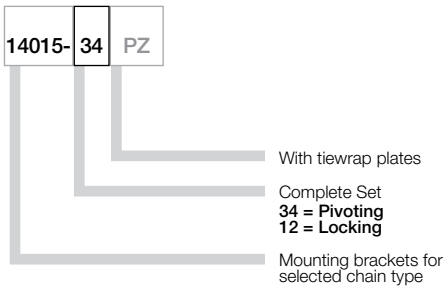


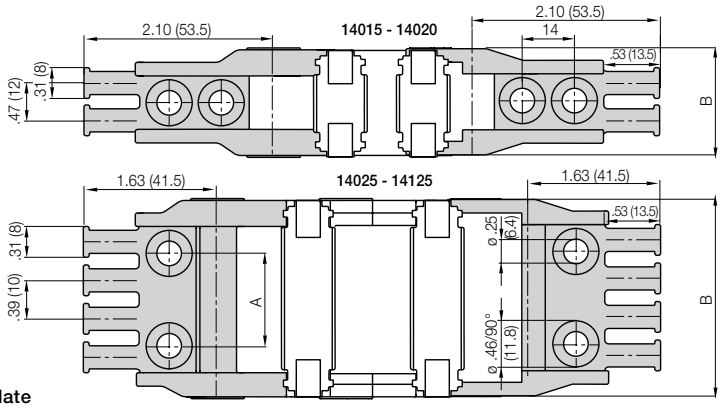
## Option 2: locking

- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height ($H_F$)
- Various mounting positions



**Part Number Structure**




**Full set, for both ends:**

14015- 34 PZ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

14015- 3 PZ Mounting bracket **with bore + tiewrap plate**

14015- 4 PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Dimension A in. | (mm) | Dimension B in. | (mm) | Number |
|---|---|---|---|---|---|---|
| 1400/1450/1500-015 | **14015-** ☐ **PZ** | – | – | 1.12 | (28.5) | 2 |
| 1400/1450/1500-020 | **14020-** ☐ **PZ** | – | – | 1.32 | (33.5) | 2 |
| 1400/1450/1500-025 | **14025-** ☐ **PZ** | .51 | (13) | 1.52 | (38.5) | 2 |
| 1400/1450/1500-038 | **14038-** ☐ **PZ** | .94 | (24) | 2.03 | (51.5) | 4 |
| 1400/1450/1500-050 | **14050-** ☐ **PZ** | 1.42 | (36) | 2.50 | (63.5) | 6 |
| 1400/1450/1500-068 | **14068-** ☐ **PZ** | 2.13 | (54) | 3.21 | (81.5) | 7 |
| 1400/1450/1500-080 | **14080-** ☐ **PZ** | 2.60 | (66) | 3.68 | (93.5) | 8 |
| 1400/1450/1500-100 | **14100-** ☐ **PZ** | 3.39 | (86) | 4.47 | (113.5) | 10 |
| 1400/1450/1500-125 | **14125-** ☐ **PZ** | 4.37 | (111) | 5.45 | (138.5) | 13 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

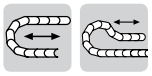
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 1400/1500
# Mounting Brackets - Plastic



Telephone 1-800-521-2747
Fax 1-401-438-7270

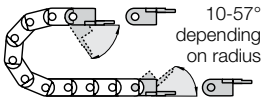
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



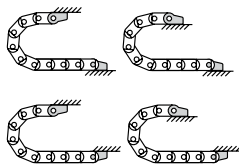
## Option 3: plastic

- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

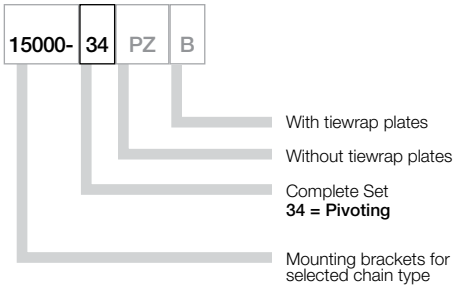
**Moving end with bore**
**15000...3PZ(B)**




**Fixed end with pin**
**15000...4PZ(B)**

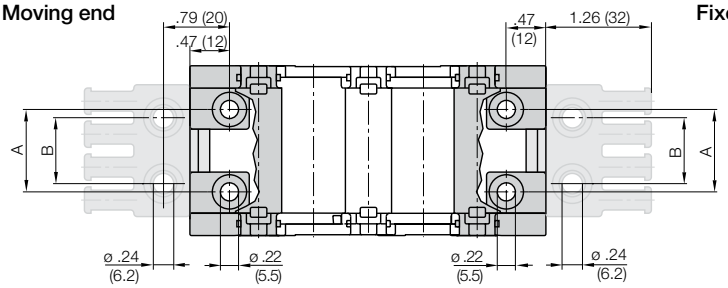


### Part Number Structure




**15000...3PZ(B)**
**Moving end**

**15000...4PZ(B)**
**Fixed end**




**Full set, for both ends:**
15000-34PZB Full set, **each part with pin/bore + tiewrap plate**

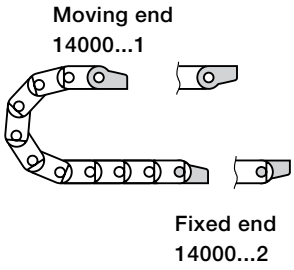
**Single-part order:**
15000-3PZB Mounting bracket **with bore + tiewrap plate**
15000-4PZB Mounting bracket **with pin + tiewrap plate**

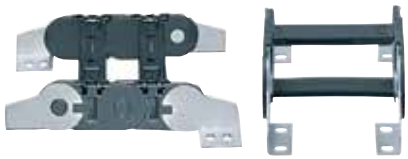
| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|---|
| 1400/1500-015 | – | – | – | – | – | – | – |
| 1400/1500-020 | – | – | – | – | – | – | – |
| 1400/1500-025 | **15000-025-34PZB** | **15000-025-34PZ** | **15000-025-34PZBK1** | .47 | (12) | .59 | (15) |
| 1400/1500-038 | **15000-038-34PZB** | **15000-038-34PZ** | **15000-038-34PZBK1** | .98 | (25) | .79 | (20) |
| 1400/1500-050 | **15000-050-34PZB** | **15000-050-34PZ** | **15000-050-34PZBK1** | 1.46 | (37) | 1.18 | (30) |
| 1400/1500-068 | **15000-068-34PZB** | **15000-068-34PZ** | **15000-068-34PZBK1** | 2.17 | (55) | 1.57 | (40) |
| 1400/1500-080 | **15000-080-34PZB** | **15000-080-34PZ** | **15000-080-34PZBK1** | 2.64 | (67) | 2.36 | (60) |
| 1400/1500-100 | **15000-100-34PZB** | **15000-100-34PZ** | **15000-100-34PZBK1** | 3.43 | (87) | 3.15 | (80) |
| 1400/1500-125 | **15000-125-34PZB** | **15000-125-34PZ** | **15000-125-34PZBK1** | 4.41 | (112) | 4.13 | (105) |

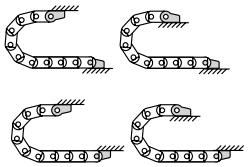
# E-Chain System® E2/000
# Series 1400/1500
# Mounting Brackets - Steel

## Option 4: Steel

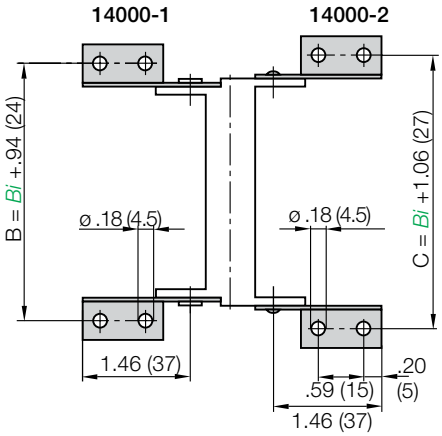
- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

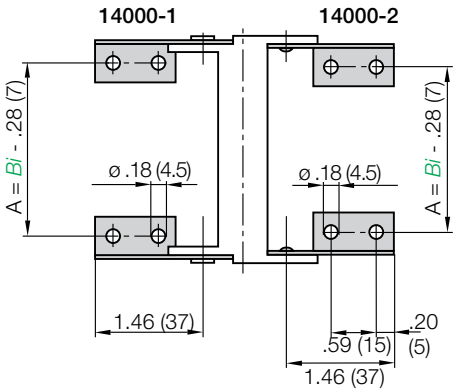




Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) | Dimension C in. | (mm) |
|---|---|---|---|---|---|---|---|
| 1400/1500-015 | **14000-12** | .31 | (8) | 1.54 | (39) | 1.65 | (42) |
| 1400/1500-020 | **14000-12** | .51 | (13) | 1.73 | (44) | 1.85 | (47) |
| 1400/1500-025 | **14000-12** | .71 | (18) | 1.93 | (49) | 2.05 | (52) |
| 1400/1500-038 | **14000-12** | 1.22 | (31) | 2.44 | (62) | 2.56 | (65) |
| 1400/1500-050 | **14000-12** | 1.69 | (43) | 2.91 | (74) | 3.03 | (77) |
| 1400/1500-068 | **14000-12** | 2.40 | (61) | 3.62 | (92) | 3.74 | (95) |
| 1400/1500-080 | **14000-12** | 2.87 | (73) | 4.09 | (104) | 4.21 | (107) |
| 1400/1500-100 | **14000-12** | 3.66 | (93) | 4.88 | (124) | 5.00 | (127) |
| 1400/1500-125 | **14000-12** | 4.65 | (118) | 5.87 | (149) | 5.98 | (152) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 1400/1500:
**14000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 1400/1500:
**14000-1**

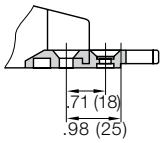
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 1400/1500:
**14000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

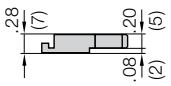
# E-Chain System® E2/000
# Series 1400/1500
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

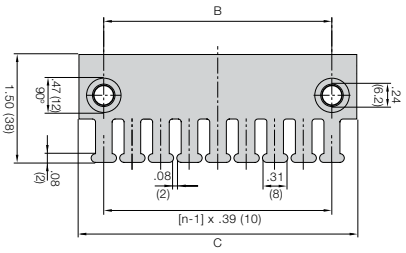



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes



## Price Index

Series R1480

## Special Features / Options

IPA Qualification Certificate
Air Cleanliness Class ISO Class 3
(at v = 6.56 ft/s) upon request

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 65.6 ft (20 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. ≤ 2.3 ft (0.7 m) |
| Rotary requires further calculation |

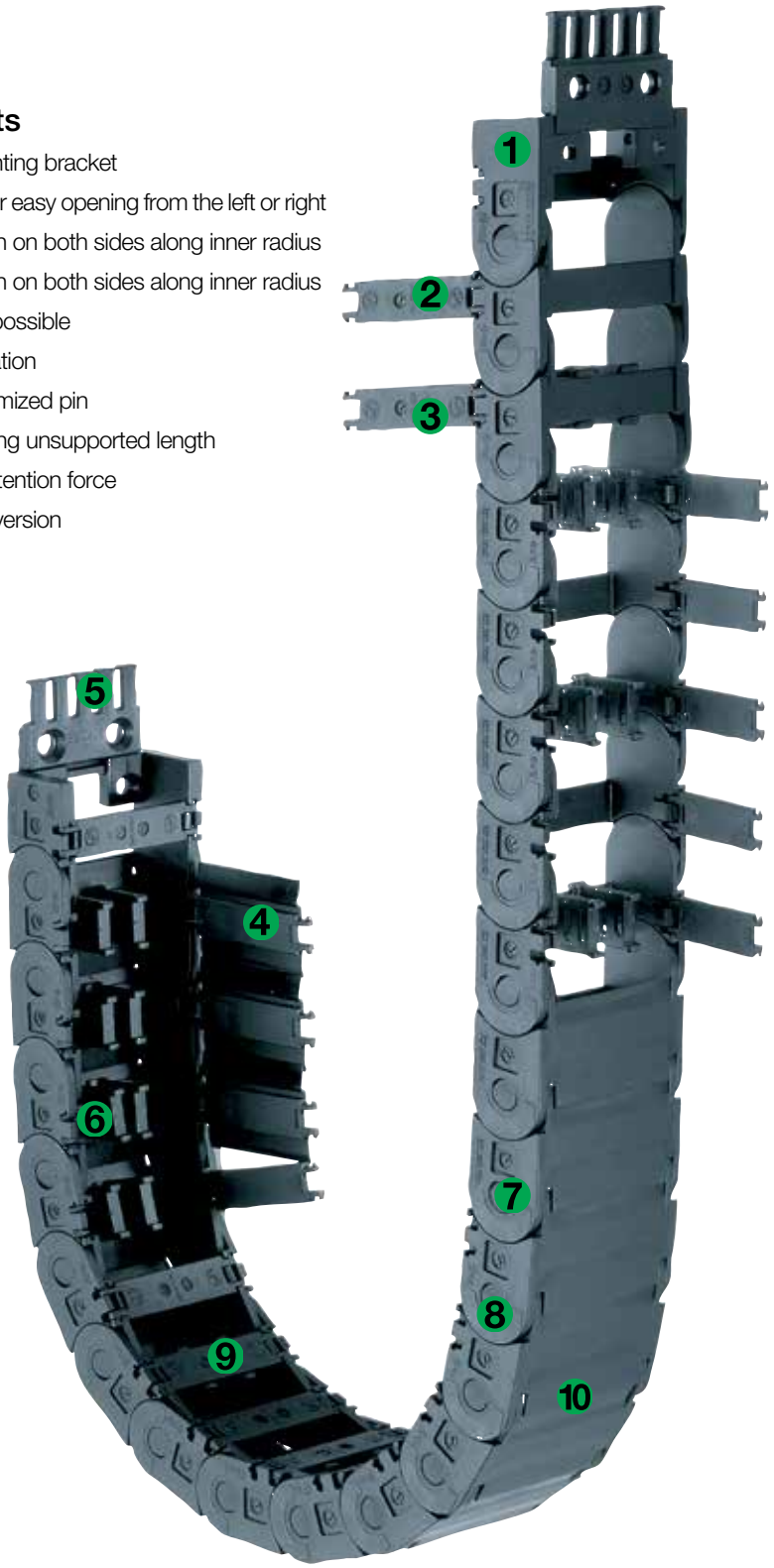
## Usage Guidelines

- If hinged, snap-open accessibility along the inner radius is required
- If integrated strain relief is required at the connection point
- If long service life is required
- If chip protection is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E14 E-Z Chain**
- If greater stability is needed
  ➤ **Series E4-21 System E4-1**
- If an E-Tube with a small bending radius is required
  ➤ **Series R117 E2 Tubes**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 1450 snap-open on both sides along inner radius
4. Series 1480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **1480-038-075-0** | **E-Chain®** |
| With 2 separators **14501** assembled every 2nd link | **Interior Separation** |
| 1 Set **15000-038-34PZB** | **Mounting Bracket** |

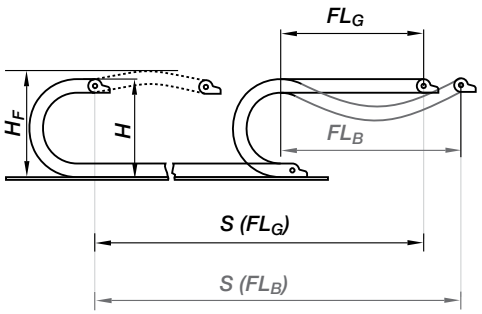
# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Installation Dimensions

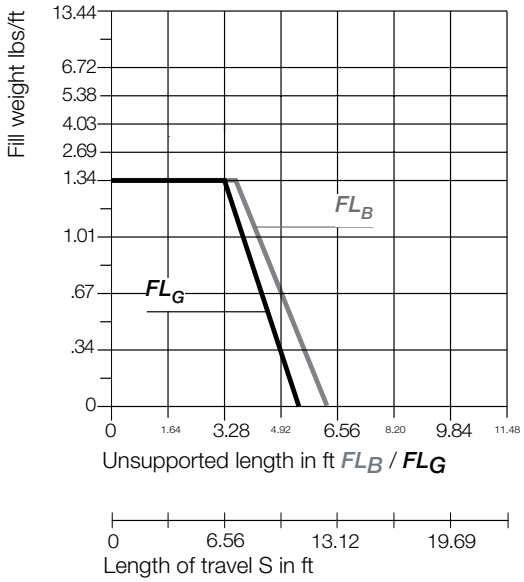


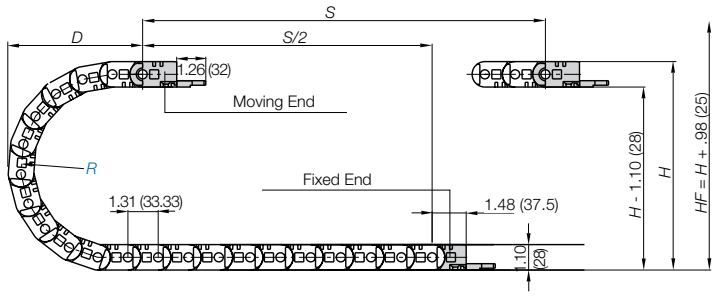
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.31" (33 mm)
**Links per ft (m): =** 9.41 (30)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: **$H_F$ = H + .98 in. (25 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
|---|---|---|---|---|---|
| H | 7.01 (178) | 8.98 (228) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 5.47 (139) | 6.46 (164) | 7.44 (189) | 8.23 (209) | 9.61 (244) |
| K | 12.01 (305) | 15.16 (385) | 18.11 (460) | 20.67 (525) | 25.00 (635) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

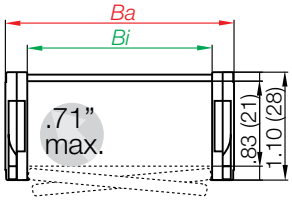
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

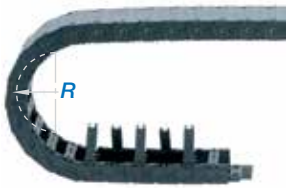
# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

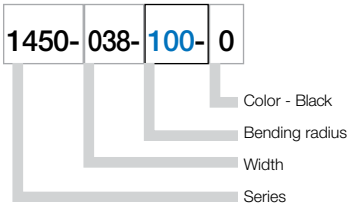


## Series 1450 - Half E-Tube - Snap-open along the inner radius

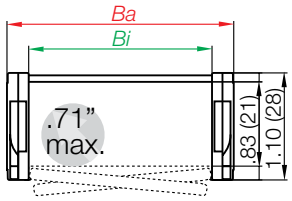


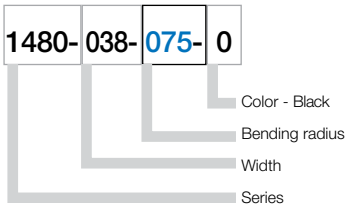

**Part Number Structure**

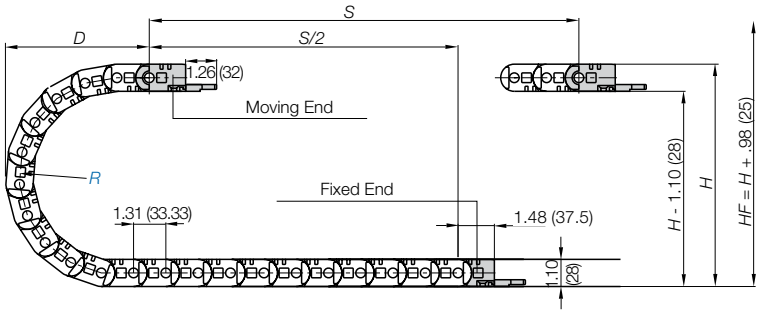



## Series 1480 - hinged, snap-open along the inner radius



**Part Number Structure**




Supplement part number with required radius. Example: 1480-038-100-0
Pitch: 1.31 in. (33 mm) per link links/ft(m) = 9.41 (30)

| Part Number. Half E-Tube Snap-open Inner Radius | Full E-Tube Snap-open Inner Radius | | *Bi* in. (mm) | *Ba* in. (mm) | Weight 1450 lbs/ft (kg/m) | Weight 1480 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| 1450-015- | 1480-015- | -0 | .79 (15) | 1.12 (28.5) | ≈ 0.32 (0.48) | ≈ 0.34 (0.50) |
| 1450-025- | 1480-025- | -0 | .98 (25) | 1.52 (38.5) | ≈ 0.36 (0.54) | ≈ 0.38 (0.57) |
| 1450-038- | 1480-038- | -0 | 1.50 (38) | 2.03 (51.5) | ≈ 0.40 (0.59) | ≈ 0.41 (0.61) |
| 1450-050- | 1480-050- | -0 | 1.97 (50) | 2.50 (63.5) | ≈ 0.44 (0.65) | ≈ 0.45 (0.67) |
| 1450-068- | 1480-068- | -0 | 2.68 (68) | 3.21 (81.5) | ≈ 0.50 (0.74) | ≈ 0.52 (0.77) |
| 1450-080- | 1480-080- | -0 | 3.15 (80) | 3.68 (93.5) | ≈ 0.54 (0.80) | ≈ 0.56 (0.84) |
| 1450-100- | 1480-100- | -0 | 3.94 (100) | 4.47 (113.5) | ≈ 0.60 (0.90) | ≈ 0.65 (0.96) |
| 1450-125- | 1480-125- | -0 | 4.92 (125) | 5.45 (138.5) | ≈ 0.69 (1.03) | ≈ 0.73 (1.08) |

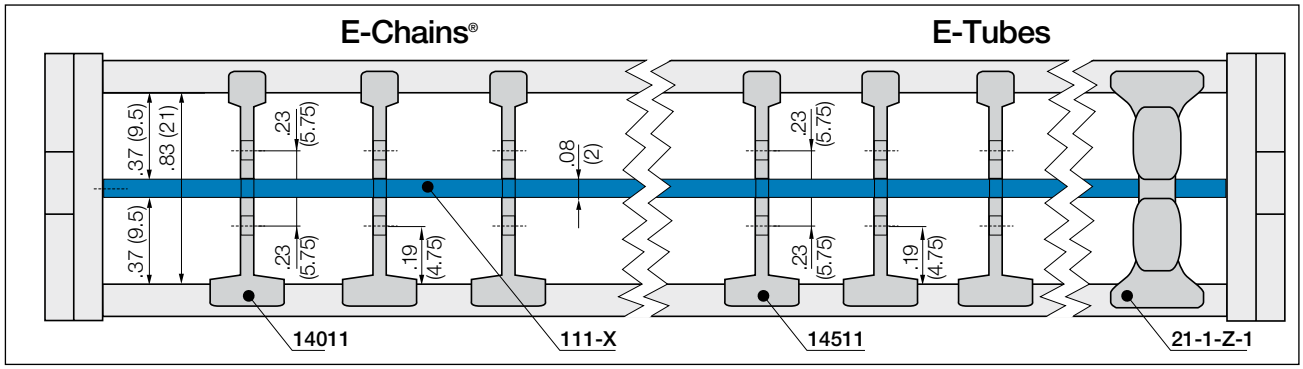
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 1480-038-100-0

| | 075 | 100 | 125 | 145 | 180 |
|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
| H | 7.01 (178) | 8.98 (228) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 5.47 (139) | 6.46 (164) | 7.44 (189) | 8.23 (209) | 9.61 (244) |
| K | 12.01 (305) | 15.16 (385) | 18.11 (460) | 20.67 (525) | 25.00 (635) |

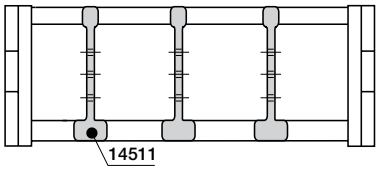
# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Interior Separation

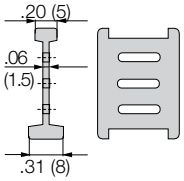
## Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




**Separators, full-width shelves**
**In the standard configuration separators are assembled every 2nd E-Chain® link**





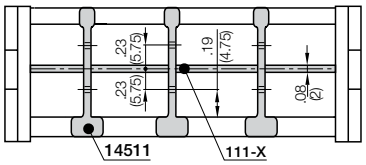

**Slotted separator for E-Tubes**

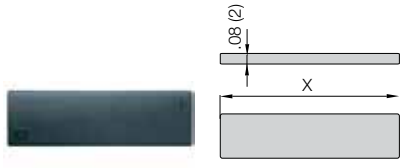
| | |
|---|---|
| Unassembled | **Part No. 14501** |
| Assembled | **Part No. 14511** |

- **Slotted separator 14501 (Tubes only)** is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Option 2: Full-width shelf

It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.




| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 0.59 | (15) | **110-15** | **111-15** |
| 0.79 | (20) | **110-20** | **111-20** |
| 0.98 | (25) | **110-25** | **111-25** |
| 1.50 | (38) | **110-38** | **111-38** |
| 1.97 | (50) | **110-50** | **111-50** |
| 2.68 | (68) | **110-68** | **111-68** |
| 3.15 | (80) | **110-80** | **111-80** |
| 3.94 | (100) | **110-100** | **111-100** |
| 4.92 | (125) | **110-125** | **111-125** |

- **Full-width shelf 110-X (Chains®/Tubes)** this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .23" (5.75mm) increments

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

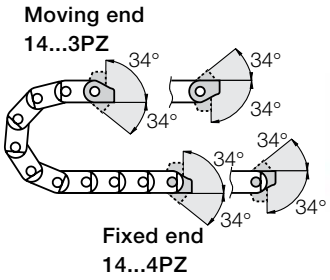
# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Mounting Brackets - One Piece

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

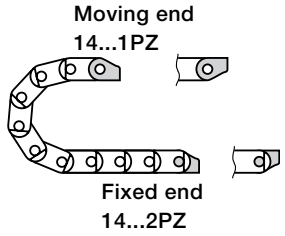
## Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Integrated strain relief
- Easy to assemble
- Various mounting positions



## Option 2: locking

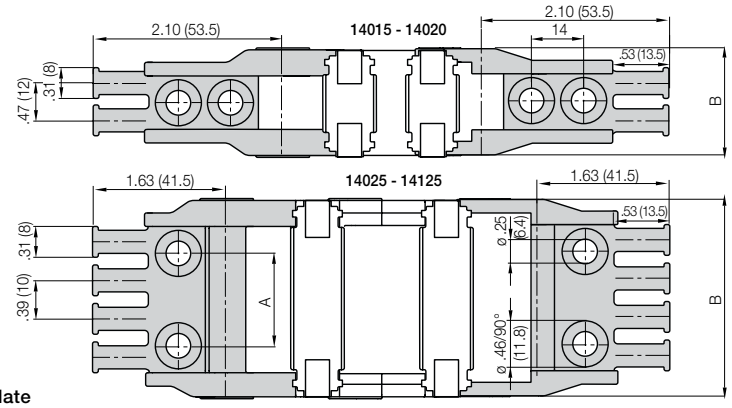
- Unsupported applications
- Extreme speed/accelerations
- If space is limited for height ($H_F$)
- Various mounting positions



### Part Number Structure

14015- | 34 | PZ

- 34 = With tiewrap plates
- Complete Set
  - 34 = Pivoting
  - 12 = Locking
- Mounting brackets for selected chain type




**Full set, for both ends:**

14015- | 34 | PZ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

14015- | 3 | PZ Mounting bracket **with bore + tiewrap plate**

14015- | 4 | PZ Mounting bracket **with pin + tiewrap plate**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) | Number |
|---|---|---|---|---|---|---|
| 1450/1480-015 | 14015- ☐ PZ | – | – | 1.12 | (28.5) | 2 |
| 1450/1480-020 | 14020- ☐ PZ | – | – | 1.32 | (33.5) | 2 |
| 1450/1480-025 | 14025- ☐ PZ | .51 | (13) | 1.52 | (38.5) | 2 |
| 1450/1480-038 | 14038- ☐ PZ | .94 | (24) | 2.03 | (51.5) | 4 |
| 1450/1480-050 | 14050- ☐ PZ | 1.42 | (36) | 2.50 | (63.5) | 6 |
| 1450/1480-068 | 14068- ☐ PZ | 2.13 | (54) | 3.21 | (81.5) | 7 |
| 1450/1480-080 | 14080- ☐ PZ | 2.60 | (66) | 3.68 | (93.5) | 8 |
| 1450/1480-100 | 14100- ☐ PZ | 3.39 | (86) | 4.47 | (113.5) | 10 |
| 1450/1480-125 | 14125- ☐ PZ | 4.37 | (111) | 5.45 | (138.5) | 13 |

34 or 12

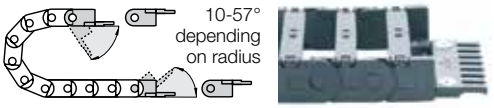
For pivoting brackets choose 34
For locking brackets choose 12
Example: 14015- 34 PZB

# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Mounting Brackets - Plastic

## Option 3: plastic

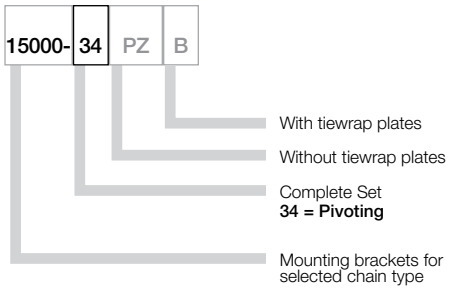
- Unsupported applications
- Space-restricted conditions
- Strain relief with detachable tiewrap plates
- Can be attached at either the fixed end or the moving end

**Moving end with bore**
**15000...3PZ(B)**



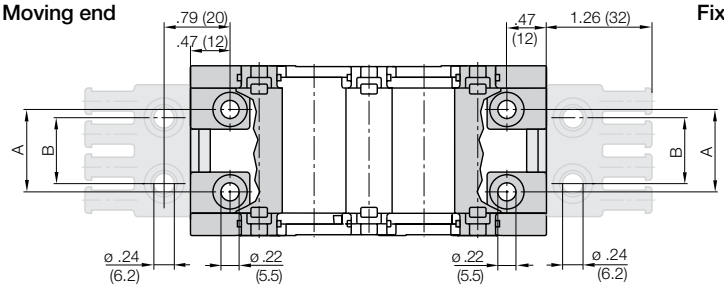

**Fixed end with pin**
**15000...4PZ(B)**

### Part Number Structure




**15000...3PZ(B)**
**Moving end**

**15000...4PZ(B)**
**Fixed end**




**Full set, for both ends:**
15000-34PZB Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
15000-3PZB Mounting bracket **with bore + tiewrap plate**
15000-4PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 1480:
**15000-Width-34**

**Part No. Mounting bracket with bore**
2 parts, 1 left & 1 right
Series 1480:
**15000-Width-3**

**Part No. Mounting bracket with pin**
2 parts, 1 left & 1 right
Series 1480:
**15000-Width-4**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| 1450/1480-025 | **15000-025-34PZB** | **15000-025-34PZBK1** | .47 | (12) | .59 | (15) |
| 1450/1480-038 | **15000-038-34PZB** | **15000-038-34PZBK1** | .98 | (25) | .79 | (20) |
| 1450/1480-050 | **15000-050-34PZB** | **15000-050-34PZBK1** | 1.46 | (37) | 1.18 | (30) |
| 1450/1480-068 | **15000-068-34PZB** | **15000-068-34PZBK1** | 2.17 | (55) | 1.57 | (40) |
| 1450/1480-080 | **15000-080-34PZB** | **15000-080-34PZBK1** | 2.64 | (67) | 2.36 | (60) |
| 1450/1480-100 | **15000-100-34PZB** | **15000-100-34PZBK1** | 3.43 | (87) | 3.15 | (80) |
| 1450/1480-125 | **15000-125-34PZB** | **15000-125-34PZBK1** | 4.41 | (112) | 4.13 | (105) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

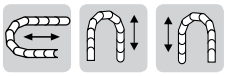
# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Mounting Bracket - Steel



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

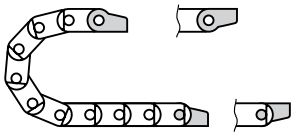




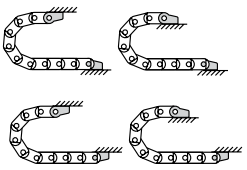
## Option 4: steel

- Locked connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

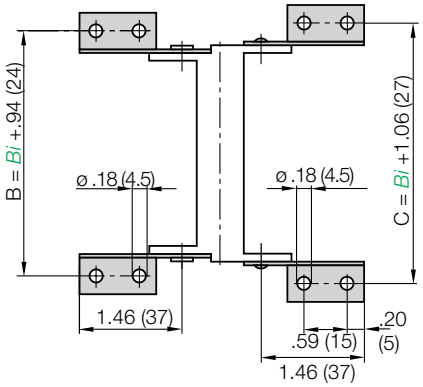
**Moving end**
**14000...1**

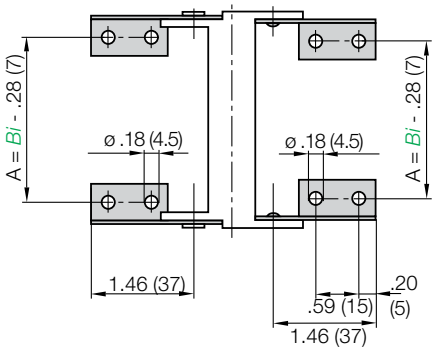


**Fixed end**
**14000...2**



Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) | Dimension C in. | (mm) |
|---|---|---|---|---|---|---|---|
| 1450/1480-015 | **14000-12** | .31 | (8) | 1.54 | (39) | 1.65 | (42) |
| 1450/1480-020 | **14000-12** | .51 | (13) | 1.73 | (44) | 1.85 | (47) |
| 1450/1480-025 | **14000-12** | .71 | (18) | 1.93 | (49) | 2.05 | (52) |
| 1450/1480-038 | **14000-12** | 1.22 | (31) | 2.44 | (62) | 2.56 | (65) |
| 1450/1480-050 | **14000-12** | 1.69 | (43) | 2.91 | (74) | 3.03 | (77) |
| 1450/1480-068 | **14000-12** | 2.40 | (61) | 3.62 | (92) | 3.74 | (95) |
| 1450/1480-080 | **14000-12** | 2.87 | (73) | 4.09 | (104) | 4.21 | (107) |
| 1450/1480-100 | **14000-12** | 3.66 | (93) | 4.88 | (124) | 5.00 | (127) |
| 1450/1480-125 | **14000-12** | 4.65 | (118) | 5.87 | (149) | 5.98 | (152) |

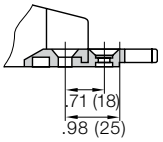
**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 1480:
**14000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 1480:
**14000-1**

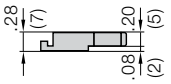
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 1480:
**14000-2**

# E-Chain System® E2/000
# Series 1450/1480 Half-Tubes and Full Tubes
# Mounting Bracket - Steel

## Tiewrap Plates




Shown assembled

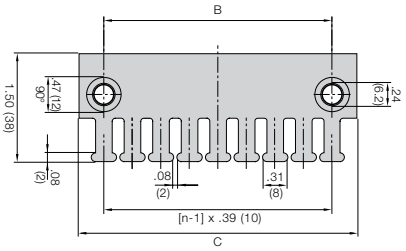



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2400/2500

.98 .98

## Price Index

Series 2400/2500

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131.24 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

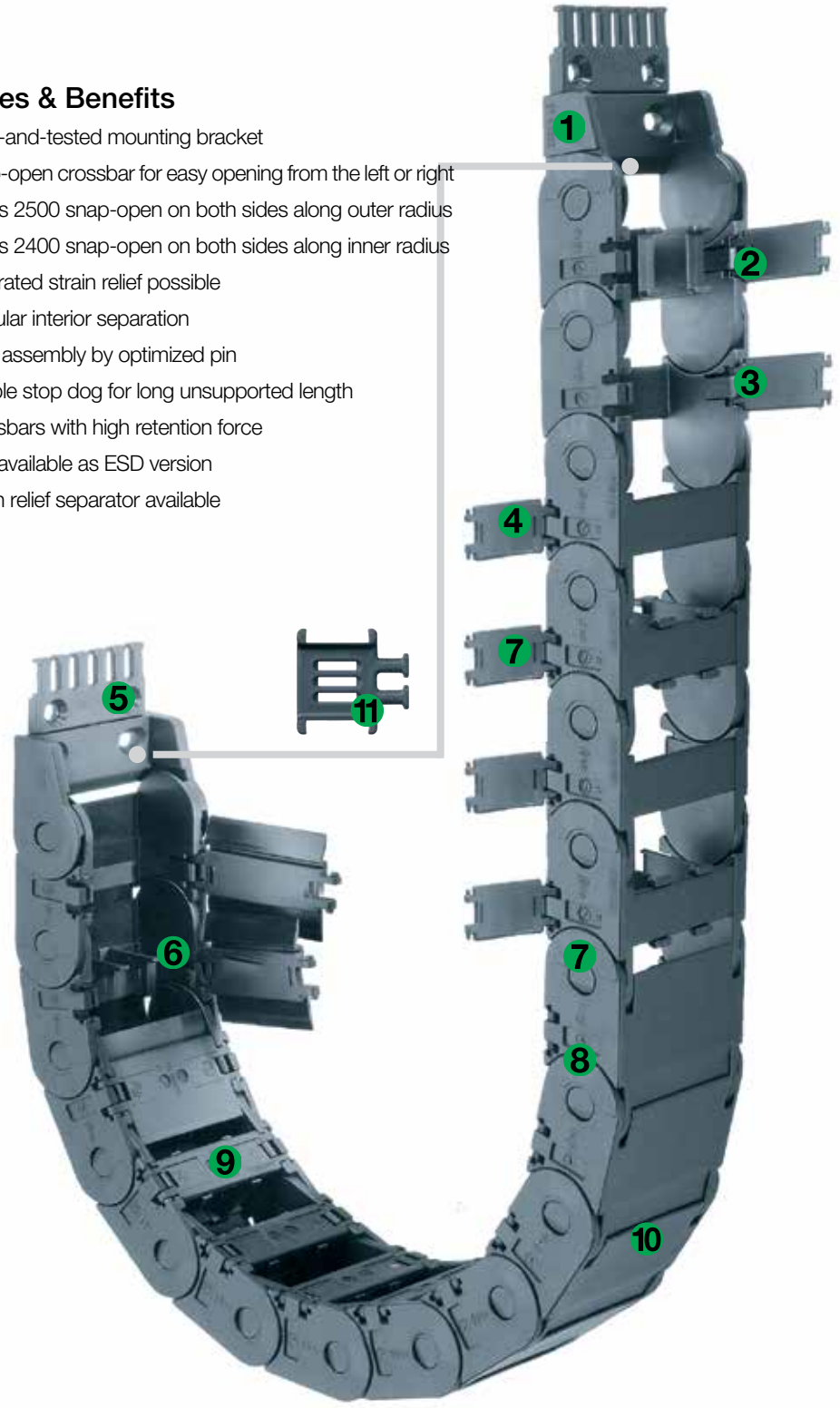
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2500 snap-open on both sides along outer radius
4. Series 2400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **2500-10-100-0** | **E-Chain®** |
| With 2 separators **25.1** assembled every 2nd link | **Interior Separation** |
| 1 Set **2100-34PZB+** | **Mounting Bracket** |

# E-Chain System® E2/000
# Series 2400/2500
# Installation Dimensions

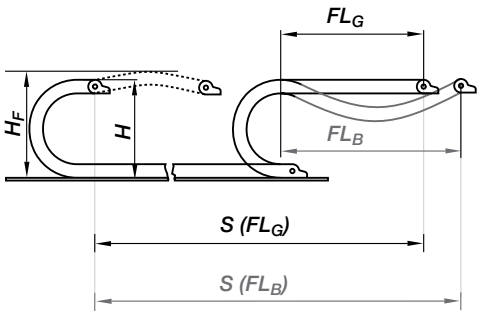


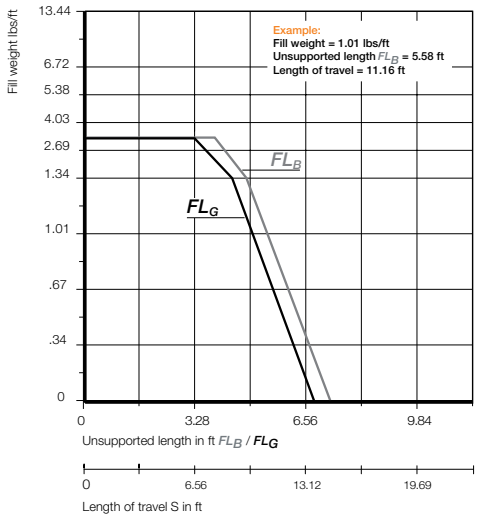
## Short travel, unsupported length

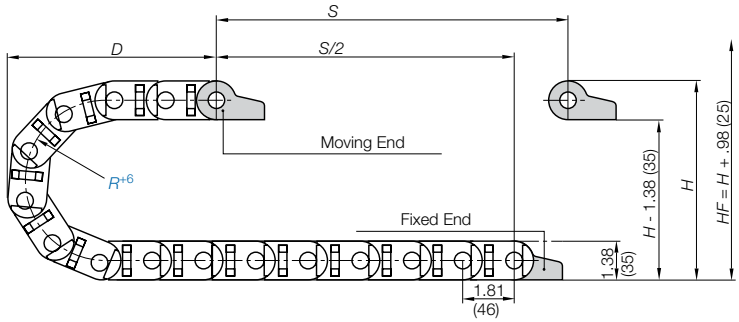
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F$ **= H + .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.38 (055**) | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 8.35 (212) | 9.33 (237) | 10.31 (262) | 11.30 (287) | 12.28 (312) | 13.27 (337) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 31.50 (800) | 34.65 (880) |

**upon request

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

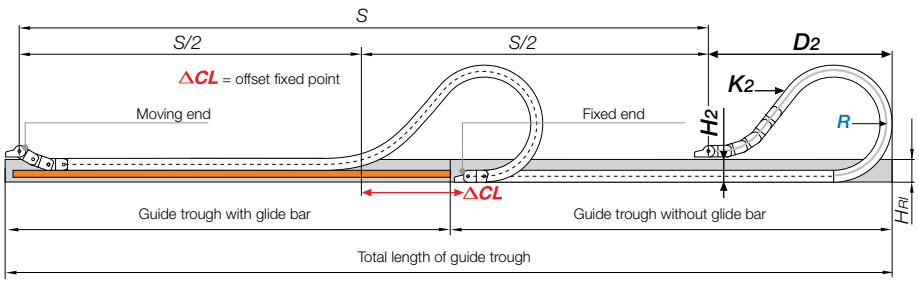
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)**
**Note: For using Series 2400 for long travels (gliding), please consult with igus® first.**
**For long travels, igus® specifies Series 2500 that snap open on the outer radius.**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




| R | 1.38 (055) | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 4.33 (110) | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$+25 | 5.59 (142) | 6.38 (162) | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_2$ | 10.43 (265) | 12.99 (330) | 25.35 (644) | 28.98 (736) | 39.84 (1012) | 48.90 (1242) | 57.95 (1472) | 63.39 (1610) | 70.63 (1794) |
| ΔCL | – | – | 8.03 (204) | 9.61 (244) | 14.33 (364) | 19.84 (504) | 26.54 (674) | 29.69 (754) | 31.65 (804) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

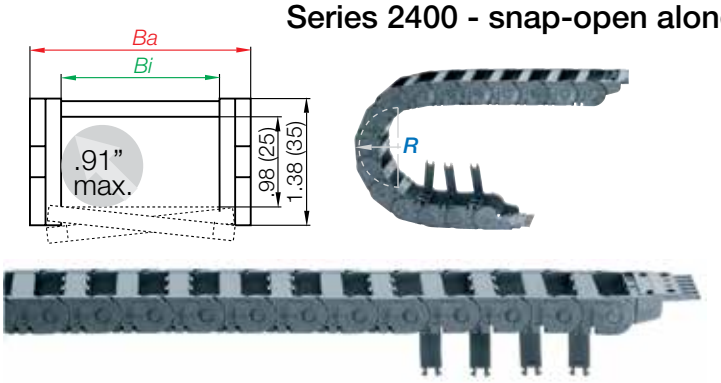
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

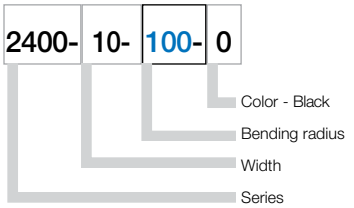
# E-Chain System® E2/000
# Series 2400/2500

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

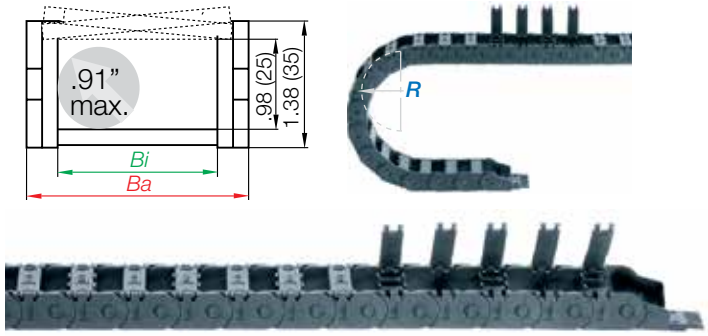
## Series 2400 - snap-open along the inner radius



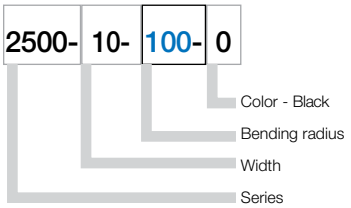

**Part Number Structure**

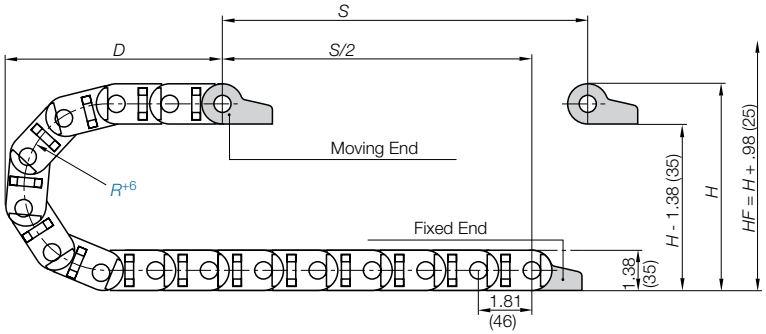



## Series 2500 - snap-open along the outer radius




**Part Number Structure**



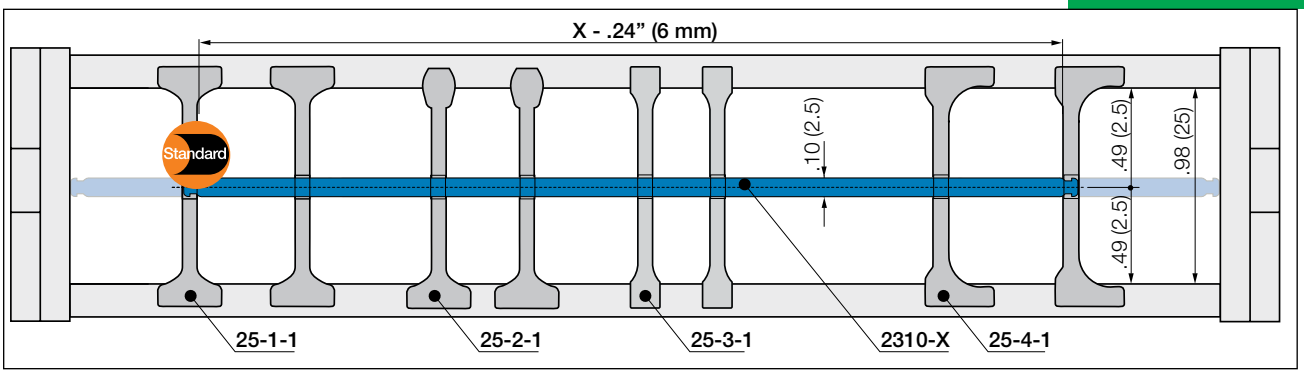

Supplement part number with required radius. Example: 2400-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

| Part Number. Snap-open inner radius | Snap-open outer radius | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|
| 2400-02-[ ]-0 | 2500-02-[ ]-0 | .98 (25) | 1.61 (41) | ≈ 0.52 (0.77) |
| 2400-03-[ ]-0 | 2500-03-[ ]-0 | 1.50 (38) | 2.13 (54) | ≈ 0.56 (0.83) |
| 2400-05-[ ]-0 | 2500-05-[ ]-0 | 2.24 (57) | 2.87 (73) | ≈ 0.61 (0.91) |
| 2400-07-[ ]-0 | 2500-07-[ ]-0 | 3.03 (77) | 3.66 (93) | ≈ 0.68 (1.01) |
| 2400-09-[ ]-0 | 2500-09-[ ]-0 | 3.50 (89) | 4.13 (105) | ≈ 0.73 (1.08) |
| 2400-10-[ ]-0 | 2500-10-[ ]-0 | 4.06 (103) | 4.69 (119) | ≈ 0.77 (1.15) |
| 2400-12-[ ]-0 | 2500-12-[ ]-0 | 4.92 (125) | 5.55 (141) | ≈ 0.82 (1.22) |

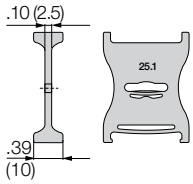
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2400-10-100-0

| | 055 | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| R | 1.38 (055) | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| H | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 8.35 (212) | 9.33 (237) | 10.31 (262) | 11.30 (287) | 12.28 (312) | 13.27 (337) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 31.50 (800) | 34.65 (880) |

# E-Chain System® E2/000
# Series 2400/2500
# Interior Separation



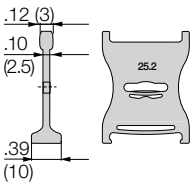

## In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 25.1** |
| Assembled | **Part No. 25.1.1** |

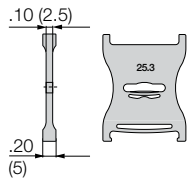
- **Standard separator 25.1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 25.2** |
| Assembled | **Part No. 25.2.1** |

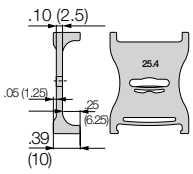
- **Separator 25.2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 25.3** |
| Assembled | **Part No. 25.3.1** |

- **Separator 25.3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

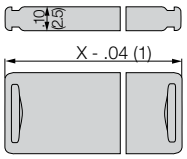



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 25.4** |
| Assembled | **Part No. 25.4.1** |

- **Separator 25.4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

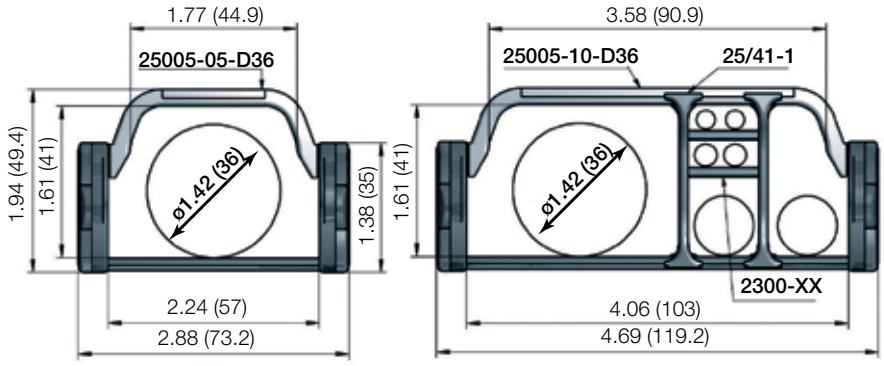
| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2400/2500
# Extender crossbars



**Part Number.**

| Extender crossbars for E-Chains® that snap-open along inner radius | Extender crossbars for E-Chains® that snap-open along outer radius | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| 2400-05D36- ☐ -0 | 2500-05D36- ☐ -0 | 2.24 (57) | 2.87 (73) |
| 2400-10D36- ☐ -0 | 2500-10D36- ☐ -0 | 4.06 (103) | 4.69 (119) |

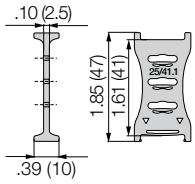
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 2400-10D36- [100] -0

| | 055* | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| R | 1.38 (055*) | 1.50 (075*) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |

*Radius 055 only possible with Series 2500 E-Chains®

## Interior separation for extender crossbars

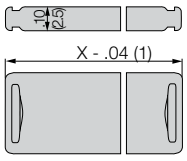



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 25/41.1** |
| Assembled | **Part No. 25/41.1.1** |

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. 2020-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

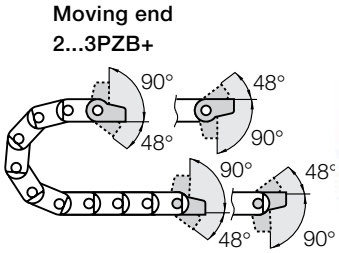
For more information ➤ **Chapter 10, Strain Relief**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 2400/2500
# Mounting Bracket - Plastic

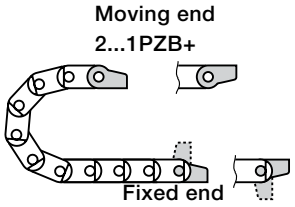
## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end



## Option 2: locking

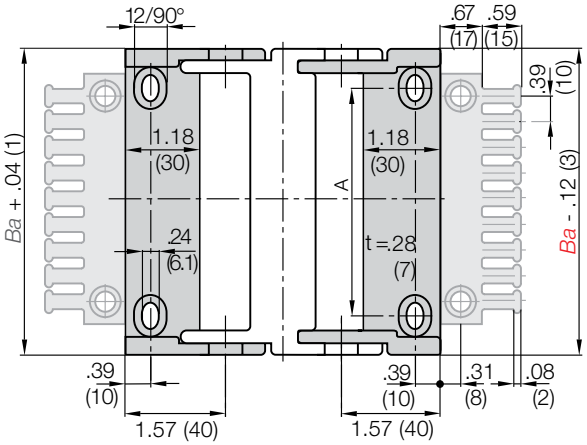
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end



### Part Number Structure

2020- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  **34 = Pivoting**
  **12 = Locking**
- Mounting brackets for selected chain type




**Full set, for both ends:**

2020- | 34 | PZB+ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

2020- | 3 | PZB+ Mounting bracket **with bore + tiewrap plate**

2020- | 4 | PZB+ Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2400/2500:**
**2020-34PZB+**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**+ 10 cable ties**
**Series 2400/2500:**
**2020-34PZBK1+**

| For Chain Type | Part No. Full set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of teeth |
|---|---|---|---|---|---|---|
| 2400/2500-02 | 2020- ☐ PZ+ | 2020- ☐ PZB+ | 2020- ☐ PZBK1+ | .47 | (12) | 3 |
| 2400/2500-03 | 2030- ☐ PZ+ | 2030- ☐ PZB+ | 2030- ☐ PZBK1+ | .98 | (25) | 4 |
| 2400/2500-05 | 2050- ☐ PZ+ | 2050- ☐ PZB+ | 2050- ☐ PZBK1+ | 1.73 | (44) | 6 |
| 2400/2500-07 | 2070- ☐ PZ+ | 2070- ☐ PZB+ | 2070- ☐ PZBK1+ | 2.52 | (64) | 8 |
| 2400/2500-09 | 2090- ☐ PZ+ | 2090- ☐ PZB+ | 2090- ☐ PZBK1+ | 3.03 | (77) | 9 |
| 2400/2500-10 | 2100- ☐ PZ+ | 2100- ☐ PZB+ | 2100- ☐ PZBK1+ | 3.54 | (90) | 10 |
| 2400/2500-12 | 2125- ☐ PZ+ | 2125- ☐ PZB+ | 2125- ☐ PZBK1+ | 4.41 | (112) | 12 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB+

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

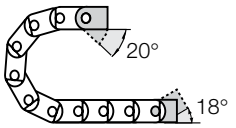
# E-Chain System® E2/000
# Series 2400/2500
# Mounting Bracket - KMA

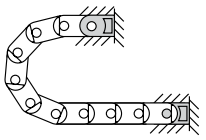
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
24001...1



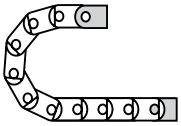


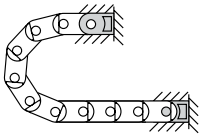
Fixed end
24001...2

## Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
24101...1



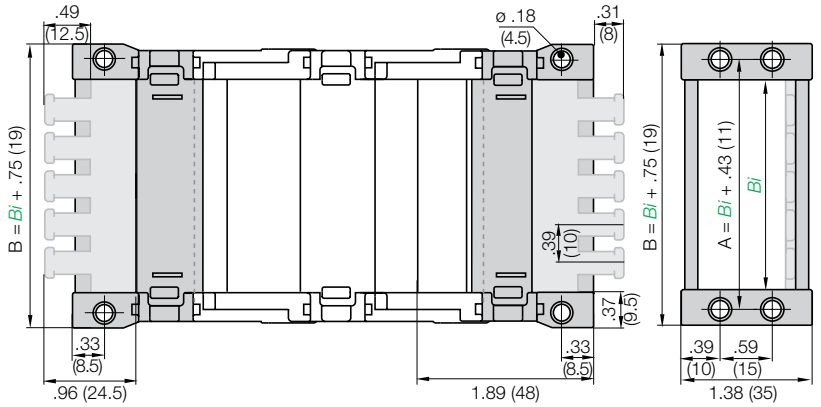


Fixed end
24101...2

### Part Number Structure

| 24001- | 02- | 12 | ZB |
|---|---|---|---|

- ZB: With tiewrap plates
- 12: Complete Set
- 02-: Width
- 24001-: Mounting brackets for selected chain type
  **24001 = Pivoting**
  **24101 = Locking**




**Full set, for both ends:**

24001- | 12 | ZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

24001- | 1 | ZB Mounting bracket **with bore + tiewrap plate**

24001- | 2 | ZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2480:**
**24001-Width-12ZB**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 2480:**
**24001-Width-12**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|
| 2400/2500-02 | [ ] -02-12ZB | [ ] -02-12 | 1.42 | (36) | 2 |
| 2400/2500-03 | [ ] -03-12ZB | [ ] -03-12 | 1.93 | (49) | 4 |
| 2400/2500-05 | [ ] -05-12ZB | [ ] -05-12 | 2.68 | (68) | 6 |
| 2400/2500-07 | [ ] -07-12ZB | [ ] -07-12 | 3.46 | (88) | 7 |
| 2400/2500-09 | [ ] -09-12ZB | [ ] -09-12 | 3.94 | (100) | 9 |
| 2400/2500-10 | [ ] -10-12ZB | [ ] -10-12 | 4.49 | (114) | 10 |
| 2400/2500-12 | [ ] -12-12ZB | [ ] -12-12 | 5.35 | (136) | 12 |

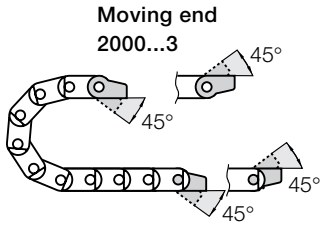
[24001] or [24101]

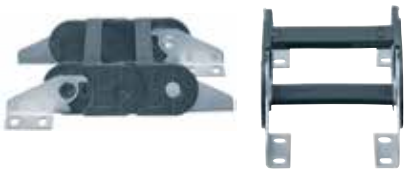
For pivoting brackets choose [24001]
For locking brackets choose [24101]
Example: [24001] -02-12ZB

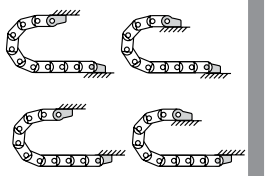
# E-Chain System® E2/000
# Series 2400/2500
# Mounting Bracket - Steel

## Option 1: Steel

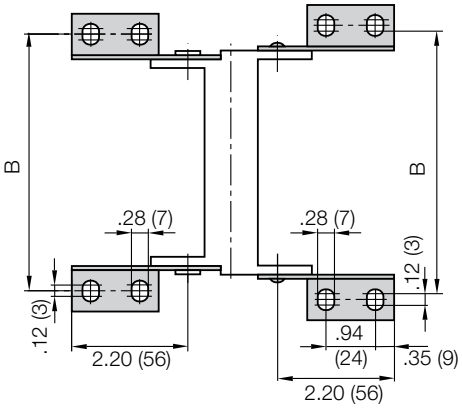
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

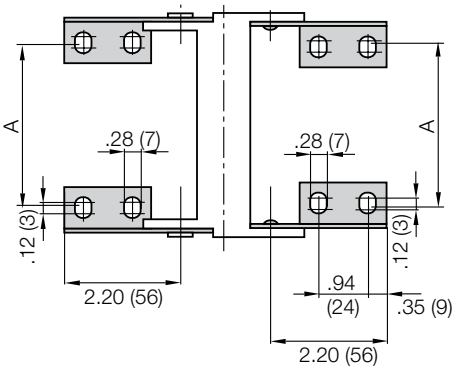




Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 2400/2500-02 | **2000-32** | — | — | 2.36 | (60) |
| 2400/2500-03 | **2000-32** | .98 | (25) | 2.87 | (73) |
| 2400/2500-05 | **2000-32** | 1.73 | (44) | 3.62 | (92) |
| 2400/2500-07 | **2000-32** | 2.52 | (64) | 4.41 | (112) |
| 2400/2500-09 | **2000-32** | 2.99 | (76) | 4.88 | (124) |
| 2400/2500-10 | **2000-32** | 3.54 | (90) | 5.43 | (138) |
| 2400/2500-12 | **2000-32** | 4.41 | (112) | 6.30 | (160) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 2400/2500:
**2000-32**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 2400/2500:
**2000-3**

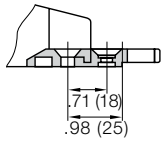
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 2400/2500:
**2000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

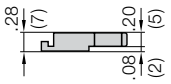
# E-Chain System® E2/000
# Series 2400/2500
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

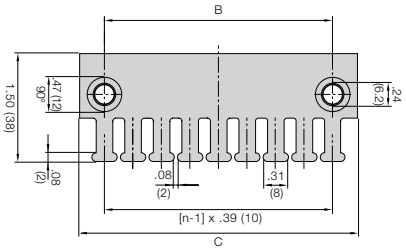



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps 100 pieces/bag | Width x Length in. | (mm) | Maximum Ø in. | (mm) | Tensile Strength lbs | (N) |
|---|---|---|---|---|---|---|
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

# E-Chain System® E2/000
# Series 2400/2500
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 92-30**
- 1/2 travel length of glide bars
  **Part Number 92-01**
- Installation sets as end connectors
  **Part Number 92-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

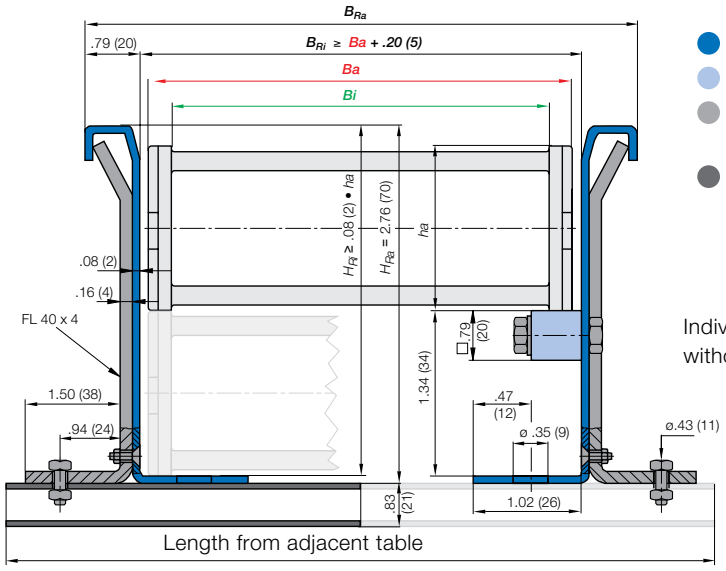
**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft
(2 m) guide trough
**Part No. 92-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
2500-**05**-200-0
$B_{Ri}$

| | | Installation Part No. |
|---|---|---|
| **-02*** | 1.81 (46) | – |
| **-03** | 2.32 (59) | **92-50-175** |
| **-05** | 3.07 (78) | **92-50-200** |
| **-07** | 3.86 (98) | **92-50-225** |
| **-09** | 4.37 (111) | **92-50-225** |
| **-10** | 4.88 (124) | **92-50-250** |
| **-12** | 5.75 (146) | **92-50-275** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Standard length profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes

.98 .98

## Price Index

Series 2450/2480

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

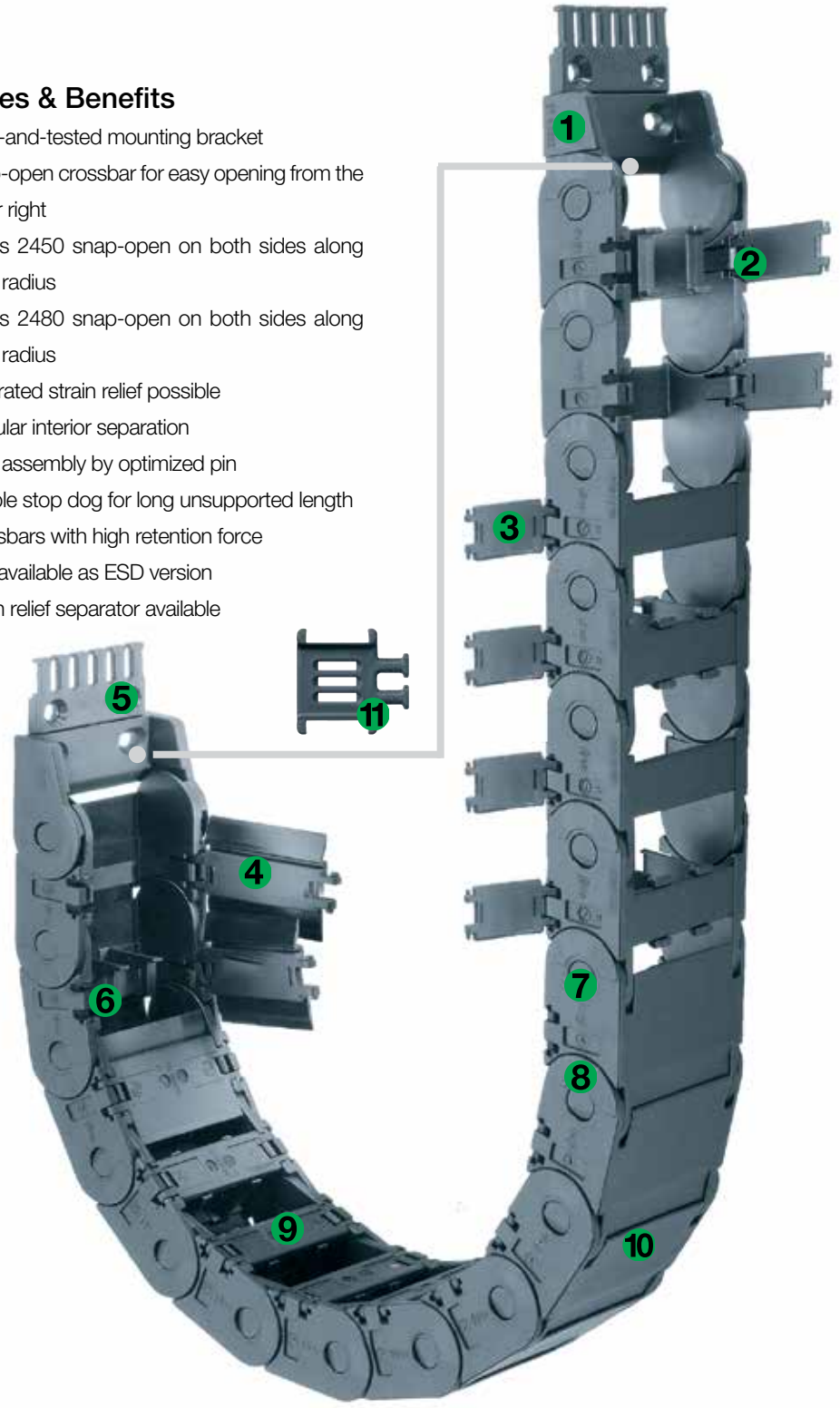
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E200 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-21 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2450 snap-open on both sides along inner radius
4. Series 2480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **2450-10-100-0** | **E-Chain®** |
| With 2 separators **24501** assembled every 2nd link | **Interior Separation** |
| 1 Set **2100-34PZB+** | **Mounting Bracket** |

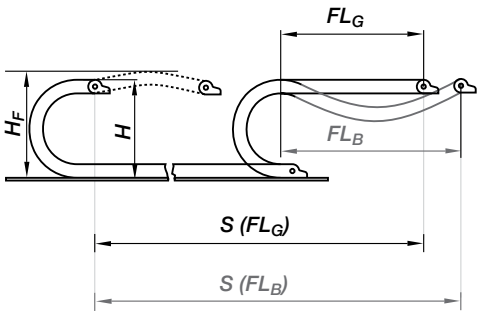
# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes
# Installation Dimensions

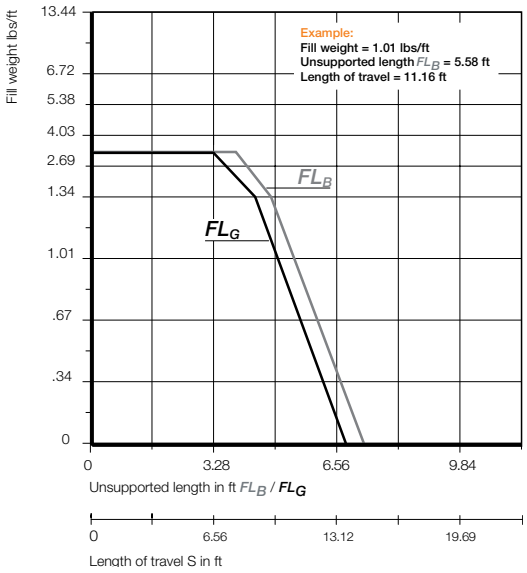


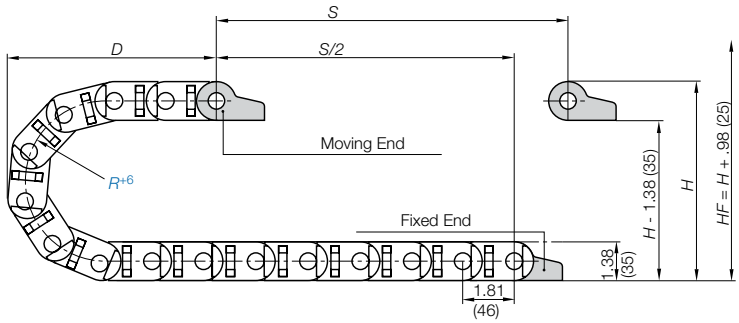
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: ***$H_F$ = H + .98 in. (25 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.38 (055*) | 1.50 (075*) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 8.35 (212) | 9.33 (237) | 10.31 (262) | 11.30 (287) | 12.28 (312) | 13.27 (337) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 31.50 (800) | 34.65 (880) |

*upon request
Radii 055: the E-Tube is not completely enclosed. Please consult igus®

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R + safety\ buffer$
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

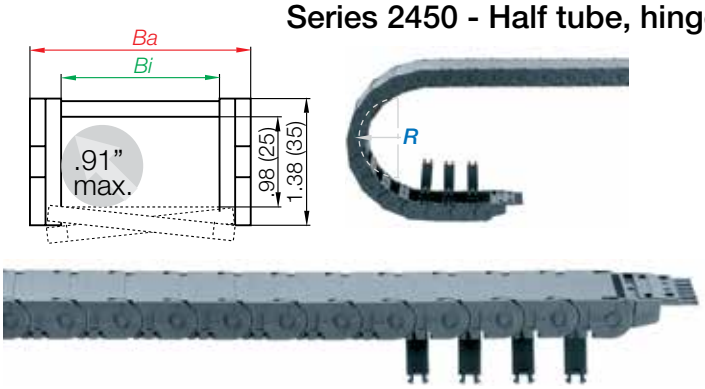
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes

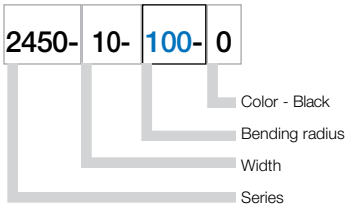
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 2450 - Half tube, hinged, snap-open along the inner radius

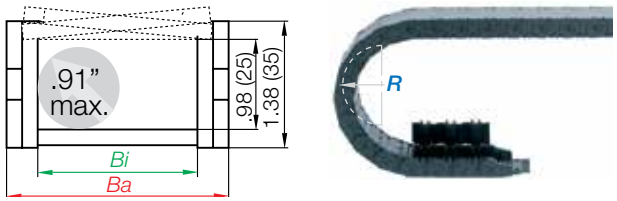




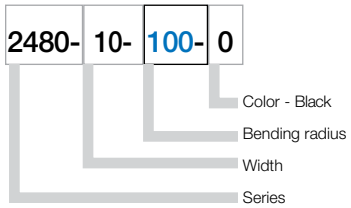

**Part Number Structure**

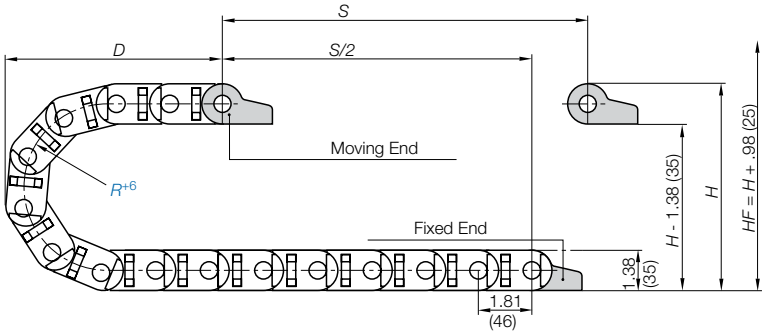



## Series 2480 - Full tube, hinged, snap-open along the inner radius



**Part Number Structure**




Supplement part number with required radius. Example: 2480-10-100-0
Pitch: 1.81 in. (46 mm) per link links/ft(m) = 6.71 (22)

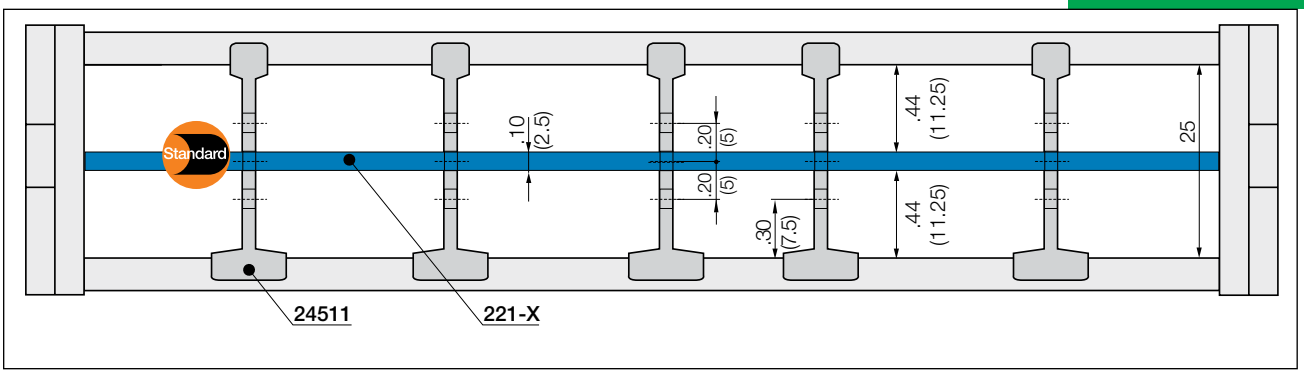
| Part Number Snap-open inner radius | Part Number Snap-open outer radius | *Bi* in. (mm) | *Ba* in. (mm) | Series 2480 Weight lbs/ft (kg/m) | Series 2480 Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 2450-02-[ ]-0 | 2480-02-[ ]-0 | .98 (25) | 1.61 (41) | ≈ 0.54 (0.80) | ≈ 0.55 (0.82) |
| 2450-03-[ ]-0 | 2480-03-[ ]-0 | 1.50 (38) | 2.13 (54) | ≈ 0.59 (0.88) | ≈ 0.62 (0.92) |
| 2450-05-[ ]-0 | 2480-05-[ ]-0 | 2.24 (57) | 2.87 (73) | ≈ 0.66 (0.99) | ≈ 0.69 (1.03) |
| 2450-07-[ ]-0 | 2480-07-[ ]-0 | 3.03 (77) | 3.66 (93) | ≈ 0.75 (1.12) | ≈ 0.79 (1.17) |
| 2450-09-[ ]-0 | 2480-09-[ ]-0 | 3.50 (89) | 4.13 (105) | ≈ 0.81 (1.20) | ≈ 0.85 (1.26) |
| 2450-10-[ ]-0 | 2480-10-[ ]-0 | 4.06 (103) | 4.69 (119) | ≈ 0.85 (1.27) | ≈ 0.90 (1.34) |
| 2450-12-[ ]-0 | 2480-12-[ ]-0 | 4.92 (125) | 5.55 (141) | ≈ 0.91 (1.35) | ≈ 0.96 (1.43) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2400-10-100-0

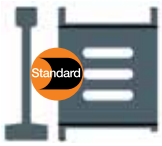
| | 055* | 075* | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| R | 1.38 (055) | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| H | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 5.59 (142) | 6.38 (162) | 7.36 (187) | 8.35 (212) | 9.33 (237) | 10.31 (262) | 11.30 (287) | 12.28 (312) | 13.27 (337) |
| K | 10.43 (265) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 31.50 (800) | 34.65 (880) |

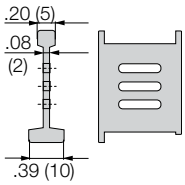
*upon request
Radii 055: the E-Tube is not completely enclosed. Please consult igus®

# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes
# Interior Separation




**In the standard configuration separators are assembled every 2nd E-Chain® link**



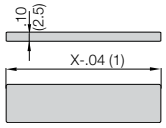




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 24501** |
| Assembled | **Part No. 24511** |

- **Slotted separator 24501**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

## Full-width shelves - for the standard interior separation




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

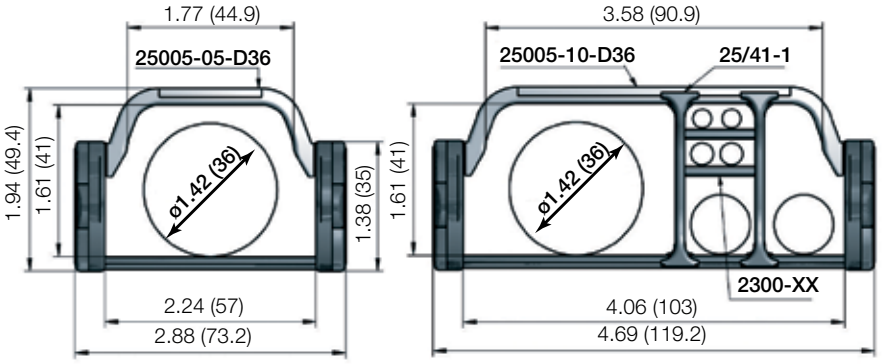
- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 3 different heights in .20" (5 mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .98 | (25) | **220-25** | **221-25** |
| 1.50 | (38) | **220-38** | **221-38** |
| 2.24 | (57) | **220-57** | **221-57** |
| 3.03 | (77) | **220-77** | **221-77** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.54 | (90) | **220-90** | **221-90** |
| 4.06 | (103) | **220-103** | **221-103** |
| 4.92 | (125) | **220-125** | **221-125** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2450 Half-Tubes
# Extender crossbars



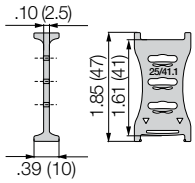
| Part Number. Extender crossbars for E-Chains® that snap-open along inner radius | | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| 2450-05D36- ☐ | -0 | 2.24 (57) | 2.87 (73) |
| 2450-10D36- ☐ | -0 | 4.06 (103) | 4.69 (119) |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 2400-10D36- 100 -0

| | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |

## Interior separation for extender crossbars

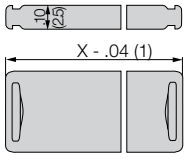



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 25/41.1** |
| Assembled | **Part No. 25/41.1.1** |

- **Standard separator 25/41-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. 2020-ZR** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

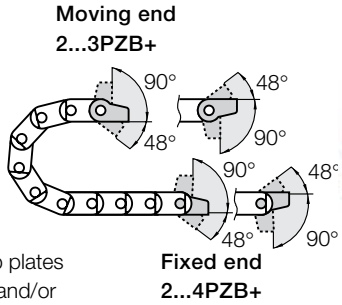
For more information ➤ **Chapter 10, Strain Relief**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes
# Mounting Bracket - Plastic

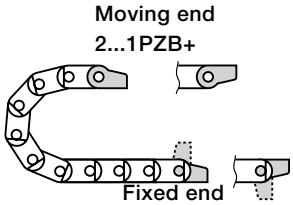
## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end



## Option 2: locking

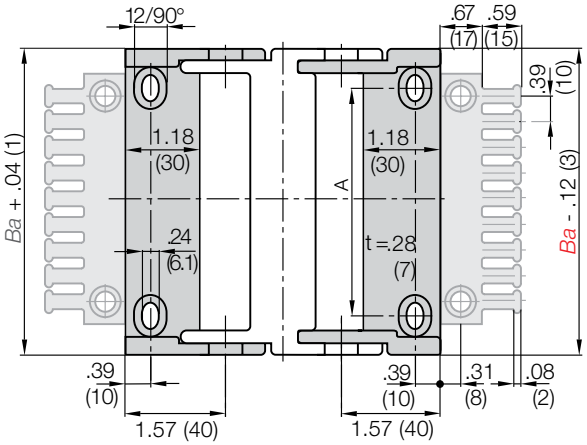
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end



### Part Number Structure

2020- | 34 | PZB | K1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  **34 = Pivoting**
  **12 = Locking**
- Mounting brackets for selected chain type




**Full set, for both ends:**
2020- | 34 | PZB+ Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
2020- | 3 | PZB+ Mounting bracket **with bore + tiewrap plate**
2020- | 4 | PZB+ Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2400/2500:**
**2020-34PZB+**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**+ 10 cable ties**
**Series 2400/2500:**
**2020-34PZBK1+**

| For Chain Type | Part No. Full set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) |
|---|---|---|---|---|---|
| 2450/2480-02 | 2020- [ ] PZ+ | 2020- [ ] PZB+ | 2020- [ ] PZBK1+ | .47 | (12) |
| 2450/2480-03 | 2030- [ ] PZ+ | 2030- [ ] PZB+ | 2030- [ ] PZBK1+ | .98 | (25) |
| 2450/2480-05 | 2050- [ ] PZ+ | 2050- [ ] PZB+ | 2050- [ ] PZBK1+ | 1.73 | (44) |
| 2450/2480-07 | 2070- [ ] PZ+ | 2070- [ ] PZB+ | 2070- [ ] PZBK1+ | 2.52 | (64) |
| 2450/2480-09 | 2090- [ ] PZ+ | 2090- [ ] PZB+ | 2090- [ ] PZBK1+ | 3.03 | (77) |
| 2450/2480-10 | 2100- [ ] PZ+ | 2100- [ ] PZB+ | 2100- [ ] PZBK1+ | 3.54 | (90) |
| 2450/2480-12 | 2125- [ ] PZ+ | 2125- [ ] PZB+ | 2125- [ ] PZBK1+ | 4.41 | (112) |

[34] or [12]

For pivoting brackets choose [34]
For locking brackets choose [12]
Example: 2020- [34] PZB+

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

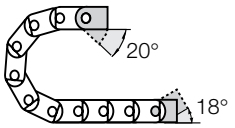
# E-Chain System® E2/000
# Series 2450/2480 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

**Moving end**
**2450 = 24501...1**
**2480 = 24801...1**

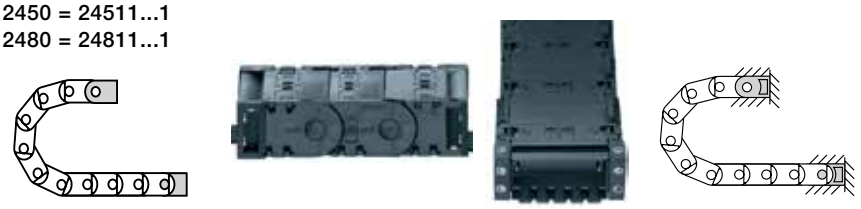


**Fixed end**
**2450 = 24501...2**
**2480 = 24801...2**

## Option 2: locking

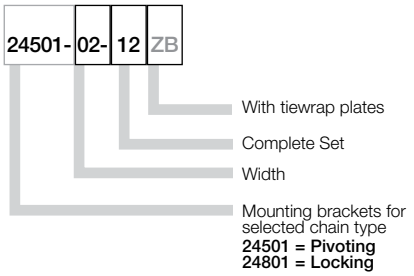
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

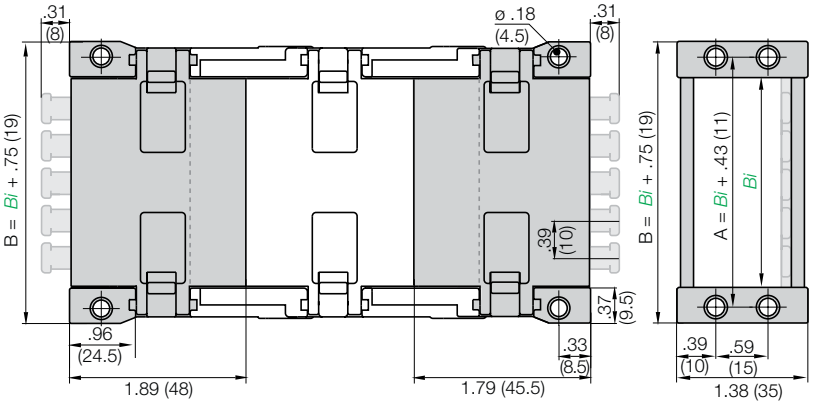
**Moving end**
**2450 = 24511...1**
**2480 = 24811...1**



**Fixed end**
**2450 = 24511...2**
**2480 = 24811...2**

### Part Number Structure




**Full set, for both ends:**
24501- 12 ZB Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
24501- 1 ZB Mounting bracket **with bore + tiewrap plate**
24501- 2 ZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2450:**
**24501-Width-12ZB**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 2450:**
**24501-Width-12**

| For Chain Type | Part No. Full set with Tiewrap Plate | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|
| 2450/2480-02 | [ ] -02-12ZB | [ ] -02-12 | 1.42 | (36) | 2 |
| 2450/2480-03 | [ ] -03-12ZB | [ ] -03-12 | 1.93 | (49) | 4 |
| 2450/2480-05 | [ ] -05-12ZB | [ ] -05-12 | 2.68 | (68) | 6 |
| 2450/2480-07 | [ ] -07-12ZB | [ ] -07-12 | 3.46 | (88) | 7 |
| 2450/2480-09 | [ ] -09-12ZB | [ ] -09-12 | 3.94 | (100) | 9 |
| 2450/2480-10 | [ ] -10-12ZB | [ ] -10-12 | 4.49 | (114) | 10 |
| 2450/2480-12 | [ ] -12-12ZB | [ ] -12-12 | 5.35 | (136) | 12 |

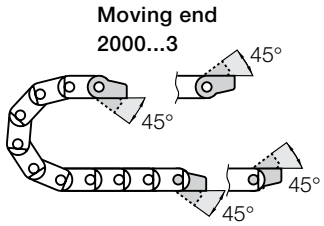
For pivoting brackets choose 24501 or 24801
For locking brackets choose 24511 or 24811
Example: 24501 -02-12ZB

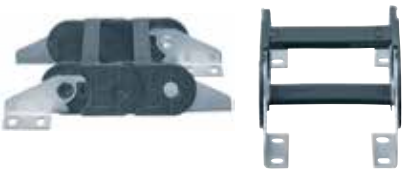
[ 24501 / 24801 ] or [ 24511 / 24811 ]

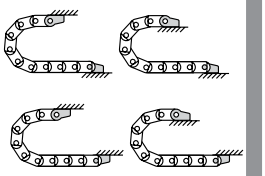
# E-Chain System® E2/000
# Series 2450/2480 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - Steel

## Option 1: Steel

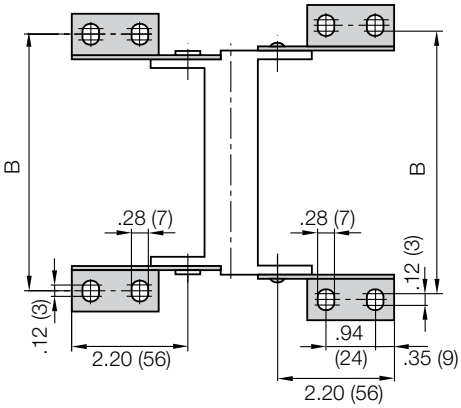
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

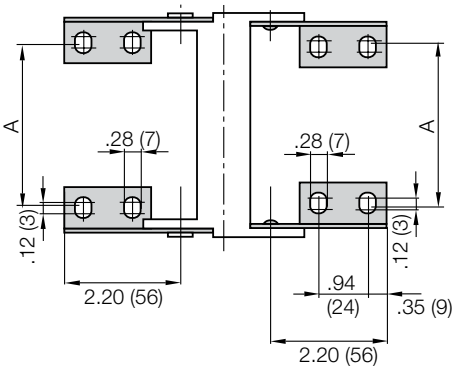




Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 2450/2480-02 | **2000-32** | | | 2.36 | (60) |
| 2450/2480-03 | **2000-32** | .98 | (25) | 2.87 | (73) |
| 2450/2480-05 | **2000-32** | 1.73 | (44) | 3.62 | (92) |
| 2450/2480-07 | **2000-32** | 2.52 | (64) | 4.41 | (112) |
| 2450/2480-09 | **2000-32** | 2.99 | (76) | 4.88 | (124) |
| 2450/2480-10 | **2000-32** | 3.54 | (90) | 5.43 | (138) |
| 2450/2480-12 | **2000-32** | 4.41 | (112) | 6.30 | (160) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 2450/2480:
**2000-32**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 2450/2480:
**2000-3**

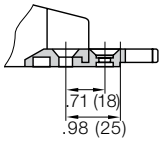
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 2450/2480:
**2000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

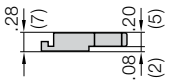
# E-Chain System® E2/000
# Series 2450/2480 Half-Tubes and Full Tubes
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

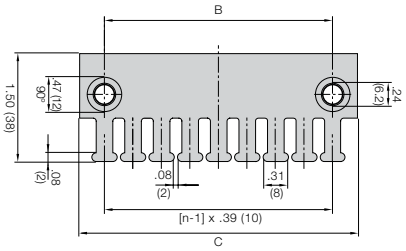



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

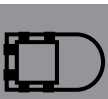
### Cable tiewraps as individual parts

| Cable tiewraps 100 pieces/bag | Width x Length in. | (mm) | Maximum Ø in. | (mm) | Tensile Strength lbs | (N) |
|---|---|---|---|---|---|---|
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E2/000
# Series 2600/2700

1.38 1.38

## Price Index

Series 2600/2700

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

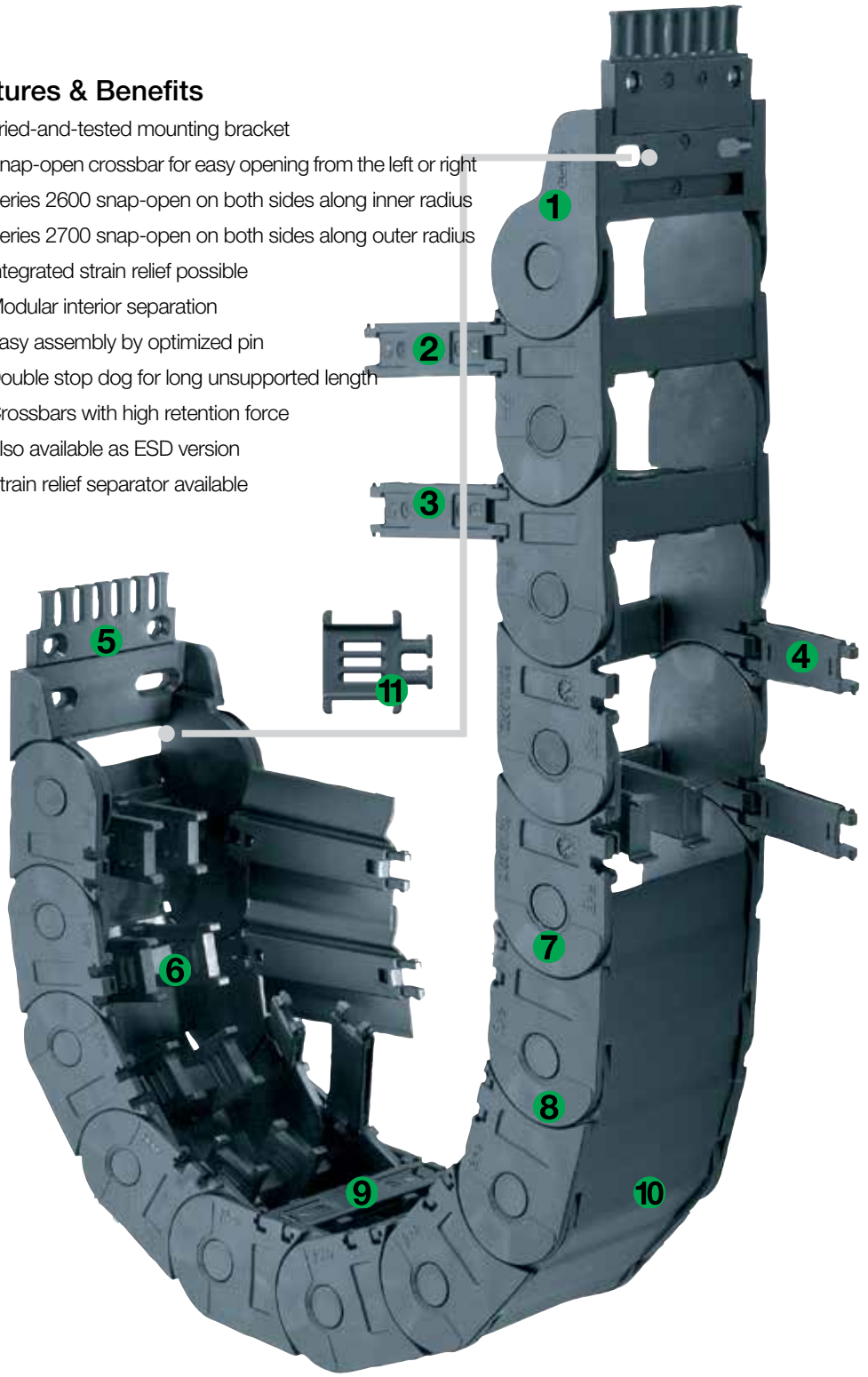
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2600 snap-open on both sides along inner radius
4. Series 2700 snap-open on both sides along outer radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

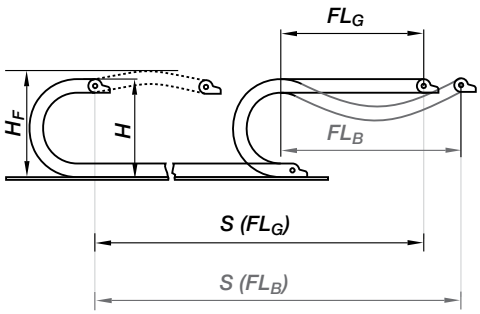
| | |
|---|---|
| 9.84 ft (3 m) **2700-10-100-0** | **E-Chain®** |
| With 2 separators **35.1** assembled every 2nd link | **Interior Separation** |
| 1 Set **2610-34PZB** | **Mounting Bracket** |

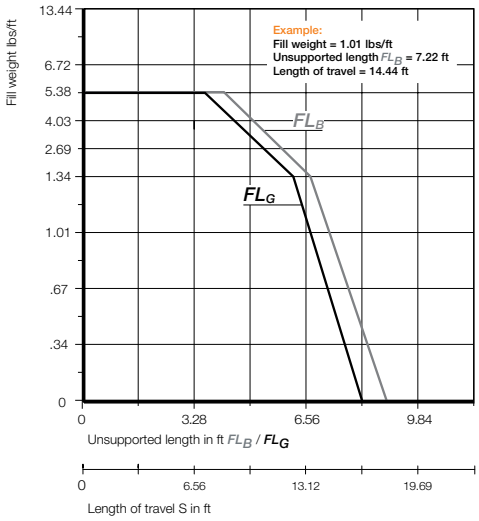
# E-Chain System® E2/000
# Series 2600/2700
# Installation Dimensions

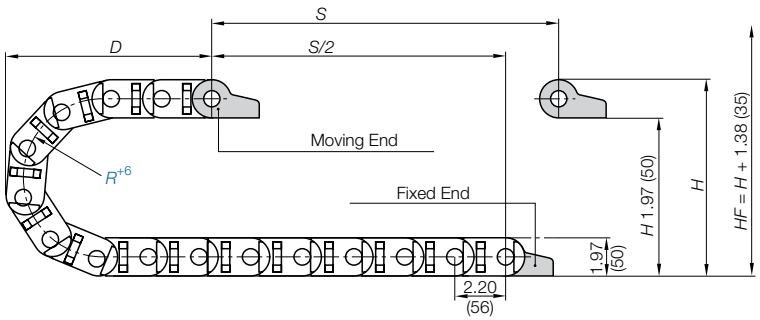


## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.38$ **in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

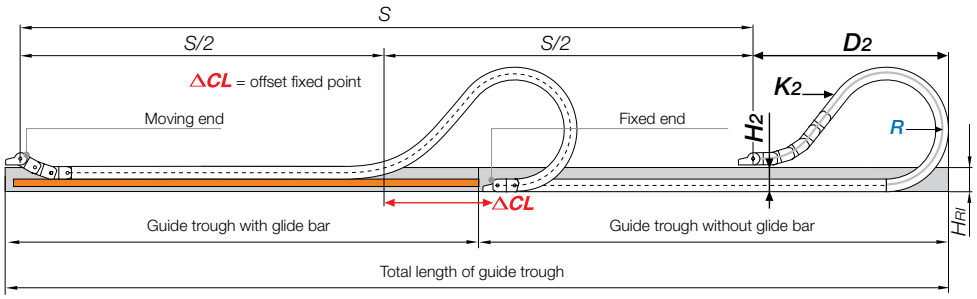
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 394 ft. (120 m)**
**For long travels, igus® specifies Series 2700 that snap open on the outer radius.**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 5.12 (130) | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2^{+25}$ | 5.51 (140) | 5.91 (150) | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) |
| $K_2$ | 13.19 (335) | 14.76 (375) | 24.25 (616) | 30.87 (784) | 35.28 (896) | 44.09 (1120) | 50.71 (1288) | 63.94 (1624) |
| ΔCL | – | – | 5.67 (144) | 9.61 (244) | 9.61 (244) | 14.72 (374) | 18.27 (464) | 23.39 (594) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

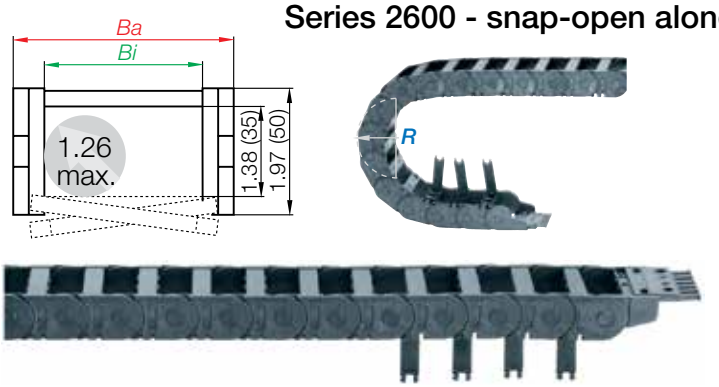
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

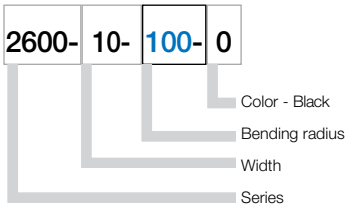
# E-Chain System® E2/000
# Series 2600/2700

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

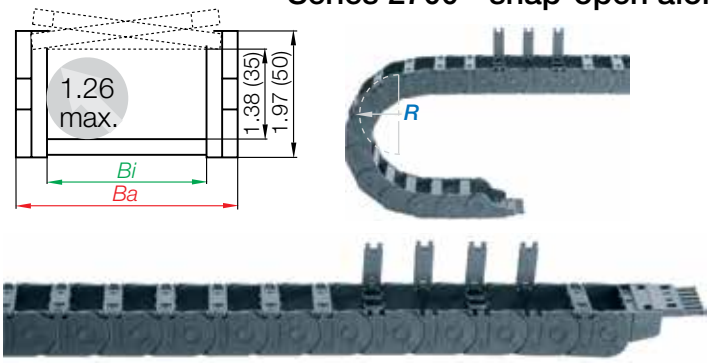
## Series 2600 - snap-open along the inner radius



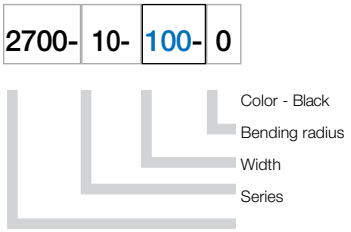

**Part Number Structure**

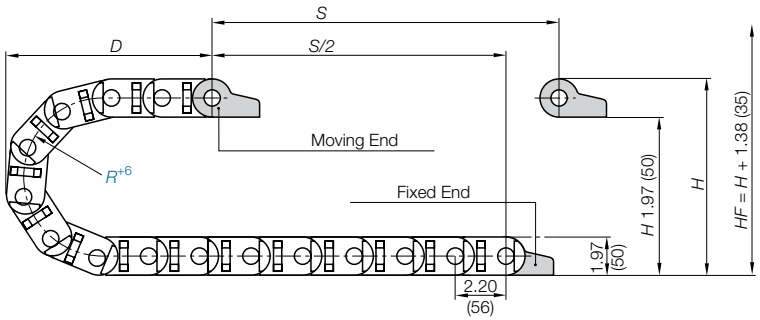



## Series 2700 - snap-open along the outer radius




**Part Number Structure**



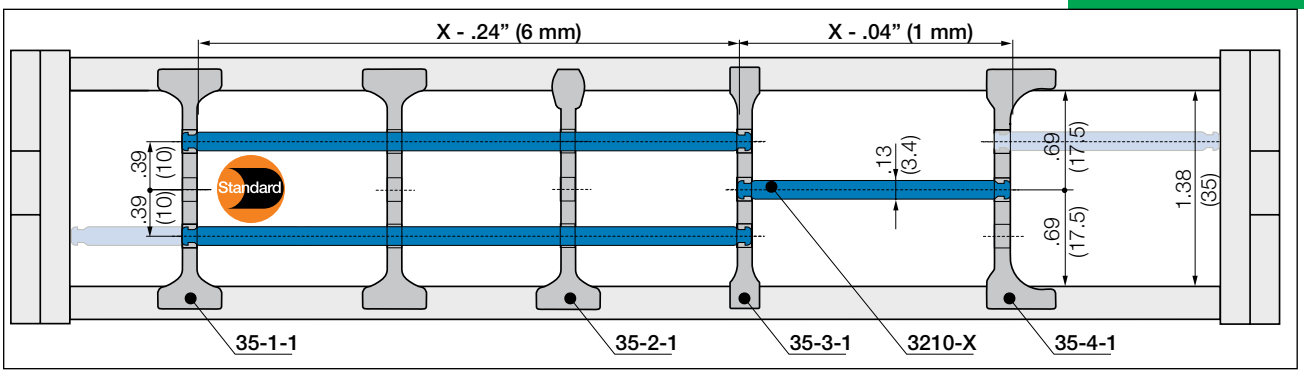

Supplement part number with required radius. Example: 2600-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

| Part Number. Snap-open inner radius | Part Number. Snap-open outer radius | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|
| 2600-05-□-0 | 2700-05-□-0 | 1.97 (50) | 2.60 (66) | ≈ 0.79 (1.17) |
| 2600-06-□-0 | 2700-06-□-0 | 2.56 (65) | 3.19 (81) | ≈ 0.83 (1.24) |
| 2600-07-□-0 | 2700-07-□-0 | 2.95 (75) | 3.58 (91) | ≈ 0.87 (1.30) |
| 2600-09-□-0 | 2700-09-□-0 | 3.54 (90) | 4.17 (106) | ≈ 0.92 (1.37) |
| 2600-10-□-0 | 2700-10-□-0 | 3.94 (100) | 4.57 (116) | ≈ 0.93 (1.39) |
| 2600-12-□-0 | 2700-12-□-0 | 4.92 (125) | 5.55 (141) | ≈ 0.99 (1.48) |
| 2600-15-□-0 | 2700-15-□-0 | 5.91 (150) | 6.53 (166) | ≈ 1.09 (1.62) |
| 2600-17-□-0 | 2700-17-□-0 | 6.89 (175) | 7.64 (194) | ≈ 1.24 (1.85) |

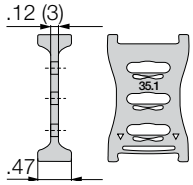
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2400-10-100-0

| | 063 | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

# E-Chain System® E2/000
# Series 2600/2700
# Interior Separation



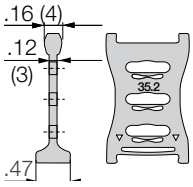

**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 35.1** |
| Assembled | **Part No. 35.1.1** |

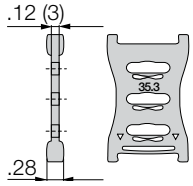
- **Standard separator 35.1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 35.2** |
| Assembled | **Part No. 35.2.1** |

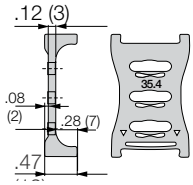
- **Separator 35.2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 35.3** |
| Assembled | **Part No. 35.3.1** |

- **Separator 35.3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

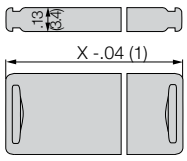



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 35.4** |
| Assembled | **Part No. 35.4.1** |

- **Separator 35.4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

**Lockable full-width shelves - for the standard interior separation**




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. .

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
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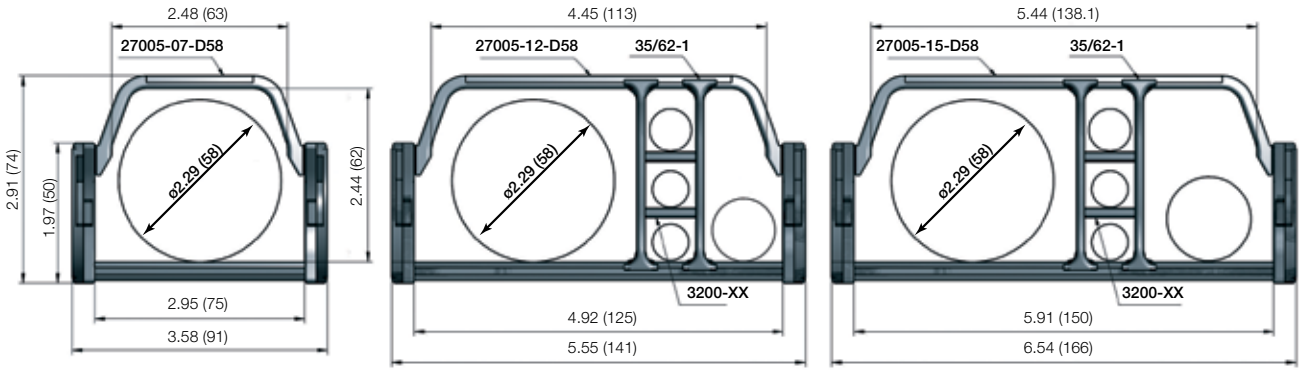
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 2600/2700
# Extender crossbars




**Part Number.**

| Extender crossbars for E-Chains® that snap-open along **inner** radius | Extender crossbars for E-Chains® that snap-open along **outer** radius | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| 2600-07D58-☐-0 | 2700-07D58-☐-0 | 2.95 (75) | 3.58 (91) |
| 2600-12D58-☐-0 | 2700-12D58-☐-0 | 4.92 (125) | 5.55 (141) |
| 2600-15D58-☐-0 | 2700-15D58-☐-0 | 5.91 (150) | 6.54 (166) |

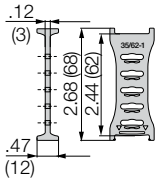
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 2700-10D58-100-0

| | 063* | 075* | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |

*Radius 063 and 075 only available for 2700 series

## Interior separation for extender crossbars

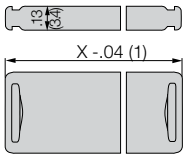



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 35/62-1** |
| Assembled | **Part No. 35/62-1-1** |

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

## Separator with integrated strain relief

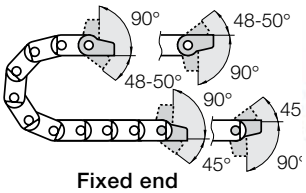
**Strain relief separator Part No. 262-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

# E-Chain System® E2/000
# Series 2600/2700
# Mounting Bracket - Plastic

## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB

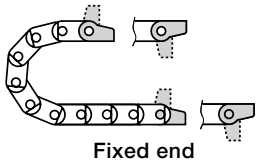


Fixed end
26...4PZB

## Option 2: locking

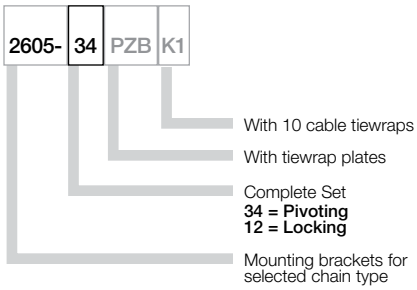
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

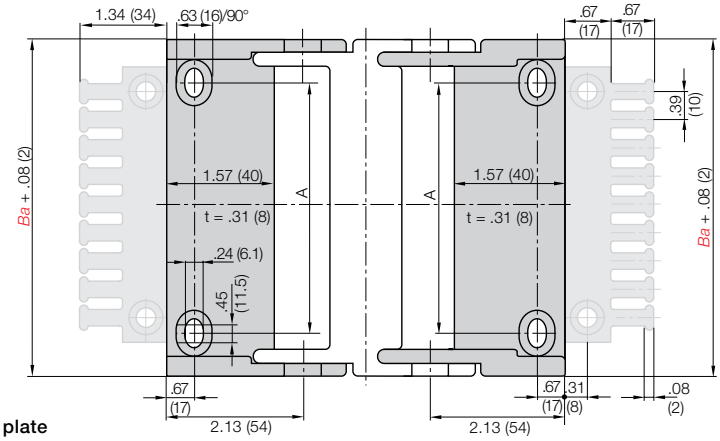
Moving end
26...1PZB



Fixed end
26...2PZB

### Part Number Structure




**Full set, for both ends:**
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2600:**
**2605-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 2600:**
**2605-34PZBK1**

| For Chain Type | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| 2600/2700-05 | 2605- ☐ PZ | 2605- ☐ PZB | 2605- ☐ PZBK1 | 1.18 | (30) | 5 |
| 2600/2700-06 | 2606- ☐ PZ | 2606- ☐ PZB | 2606- ☐ PZBK1 | 1.77 | (45) | 5 |
| 2600/2700-07 | 2607- ☐ PZ | 2607- ☐ PZB | 2607- ☐ PZBK1 | 2.17 | (55) | 7 |
| 2600/2700-09 | 2609- ☐ PZ | 2609- ☐ PZB | 2609- ☐ PZBK1 | 2.76 | (70) | 9 |
| 2600/2700-10 | 2610- ☐ PZ | 2610- ☐ PZB | 2610- ☐ PZBK1 | 3.15 | (80) | 10 |
| 2600/2700-12 | 2612- ☐ PZ | 2612- ☐ PZB | 2612- ☐ PZBK1 | 4.13 | (105) | 12 |
| 2600/2700-15 | 2615- ☐ PZ | 2615- ☐ PZB | 2615- ☐ PZBK1 | 5.12 | (130) | 15 |
| 2600/2700-17 | 2617- ☐ PZ | 2617- ☐ PZB | 2617- ☐ PZBK1 | 6.10 | (155) | 17 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

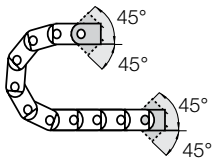
# E-Chain System® E2/000
# Series 2600/2700
# Mounting Bracket - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
26001...1

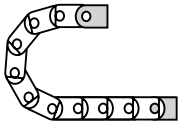



Fixed end
26001...2

## Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

Moving end
26101...1

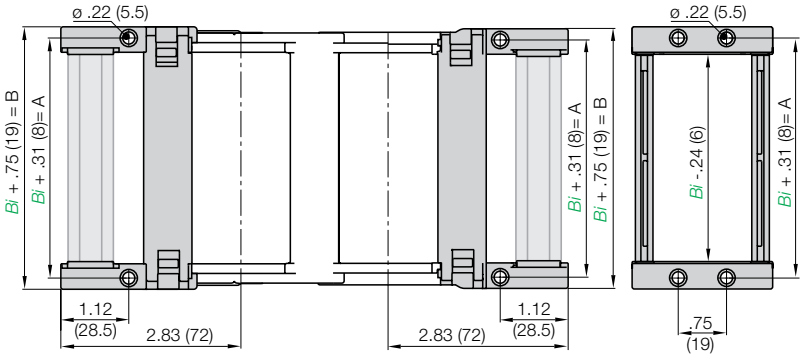


Fixed end
26101...2

### Part Number Structure

26001- 10- 12 P

- With profile rail
- Complete Set
- Width
- Mounting brackets for selected chain type
  **26001 = Pivoting**
  **26101 = Locking**




**Full set, for both ends:**

26001- 12 P Full set, **each part with pin/bore + profile rail**

**Single-part order:**

26001- 1 P Mounting bracket **with bore + profile rail**

26001- 2 P Mounting bracket **with pin + profile rail**

**Part No. Full Set** (pivoting)
**With Profile Rail**
**Series 2600/2700:**
**26001-Width-12P**

**Part No. Full Set** (pivoting)
**Without Profile Rail**
**Series 2600/2700:**
**26001-Width-12**

| For Chain Type | Part No. Full set with Profile Rail | Part No. Full Set without Profile Rail | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) |
|---|---|---|---|---|---|---|
| 2600/2700-05 | [ ] -05-12P | [ ] -05-12 | 2.28 | (58) | 2.72 | (69) |
| 2600/2700-06 | [ ] -06-12P | [ ] -06-12 | 2.87 | (73) | 3.31 | (84) |
| 2600/2700-07 | [ ] -07-12P | [ ] -07-12 | 3.27 | (83) | 3.70 | (94) |
| 2600/2700-09 | [ ] -09-12P | [ ] -09-12 | 3.86 | (98) | 4.29 | (109) |
| 2600/2700-10 | [ ] -10-12P | [ ] -10-12 | 4.25 | (108) | 4.69 | (119) |
| 2600/2700-12 | [ ] -12-12P | [ ] -12-12 | 5.24 | (133) | 5.67 | (144) |
| 2600/2700-15 | [ ] -15-12P | [ ] -15-12 | 6.22 | (158) | 6.65 | (169) |
| 2600/2700-17 | [ ] -17-12P | [ ] -17-12 | 7.20 | (183) | 7.64 | (194) |

[26001] or [26101]

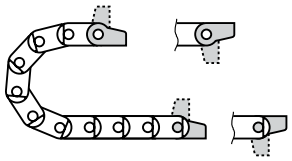
For pivoting brackets choose [26001]
For locking brackets choose [26101]
Example: [26001] -10-12P

# E-Chain System® E2/000
# Series 2600/2700
# Mounting Bracket - Steel

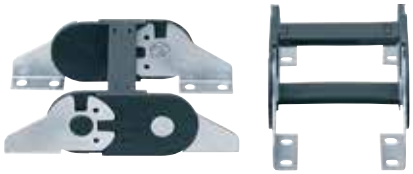
## Option 1: Steel

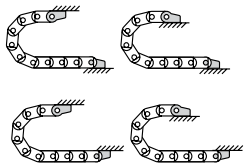
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1



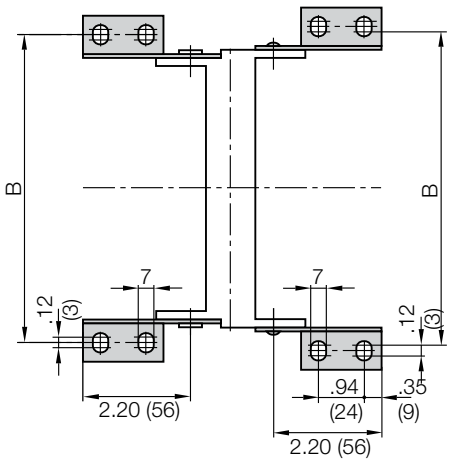
Fixed end
260...2



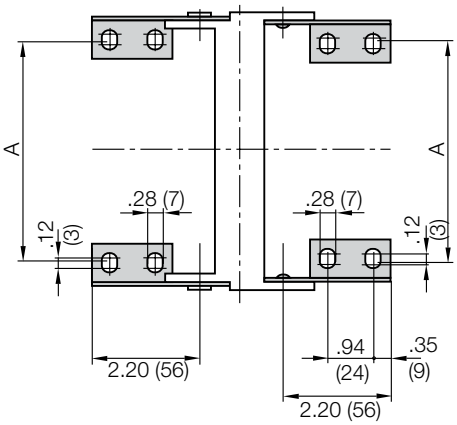


Possible installation configurations -

260-1 260-2*




260-1 260-2




*pivoting with no stop, (360°)

| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 2600/2700-05 | **260-12** | 1.46 | (37) | 3.27 | (83) |
| 2600/2700-07 | **260-12** | 2.44 | (62) | 4.25 | (108) |
| 2600/2700-10 | **260-12** | 3.43 | (87) | 5.24 | (133) |
| 2600/2700-12 | **260-12** | 4.41 | (112) | 6.22 | (158) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 2680:
**260-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 2680:
**260-1**

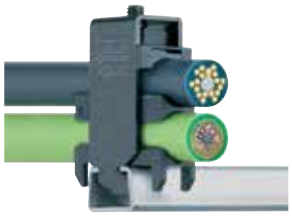
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 2680:
**260-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2600/2700
# Mounting Bracket - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

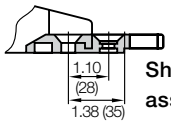
## Chainfix Clip

### Modular snap-on strain relief device

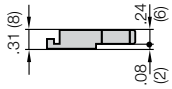
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

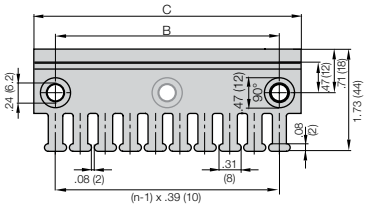



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

# E-Chain System® E2/000
# Series 2600/2700
# Strain Relief

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 95-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 95-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

**Part No. 95-30**

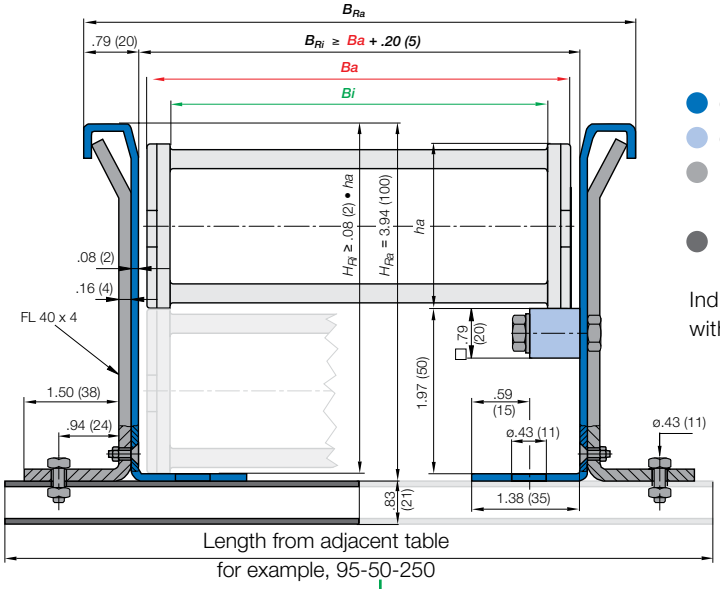
= 13 sections of 6.56 ft (2 m) glide bar

**Part No. 92-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 95-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
2700-**05**-200-0
$B_{Ri}$

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 2.80 (71) | **95-50-200** |
| **-06** | 3.38 (86) | **95-50-200** |
| **-07** | 3.78 (96) | **95-50-225** |
| **-09** | 4.37 (111) | **95-50-225** |
| **-10** | 4.76 (121) | **95-50-250** |
| **-12** | 5.75 (146) | **95-50-275** |
| **-15** | 6.73 (171) | **95-50-300** |
| **-17** | 7.83 (199) | **95-50-325** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2650/2680 E-Chain®
# Half-Tubes and Full Tubes

1.38 1.38

## Price Index

Series 2650/2680

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

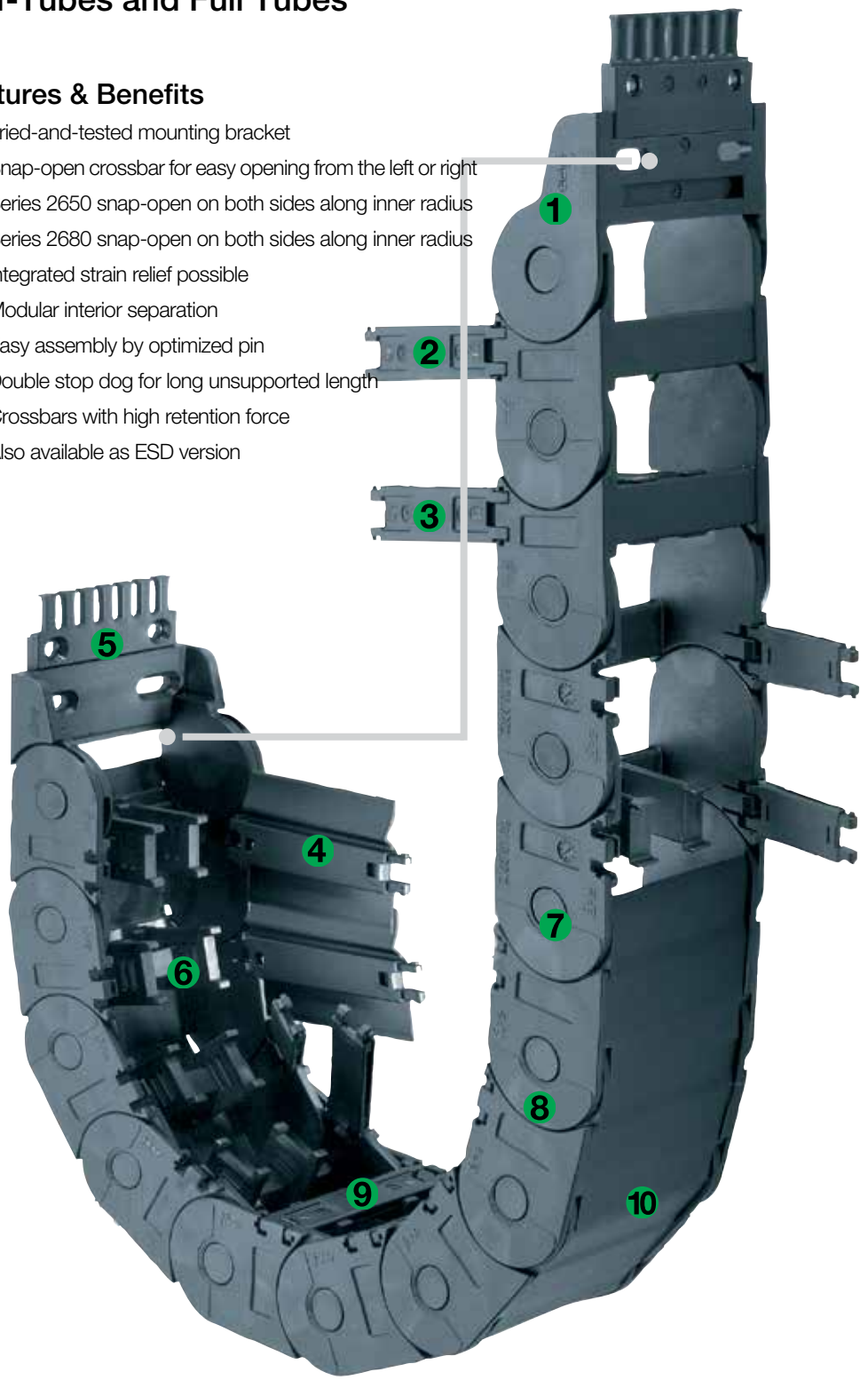
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required
- If a half-Tube is required Series 2650
- If a fully enclosed E-Tube is required Series 2680

- If the application is very simple
  ➤ **Series E26 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-32 E4-1 Series**
- If E-Tubes with small bending radii are needed
  ➤ **Series R58 E2 Tubes**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 2650 snap-open on both sides along inner radius
4. Series 2680 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **2680-10-100-0** | **E-Chain®** |
| With 2 separators **26501** assembled every 2nd link | **Interior Separation** |
| 1 Set **26500-10-12PZB** | **Mounting Bracket** |

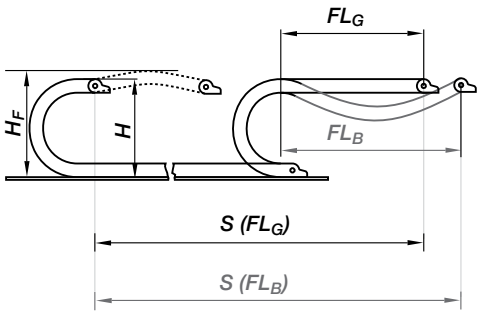
# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Installation Dimensions

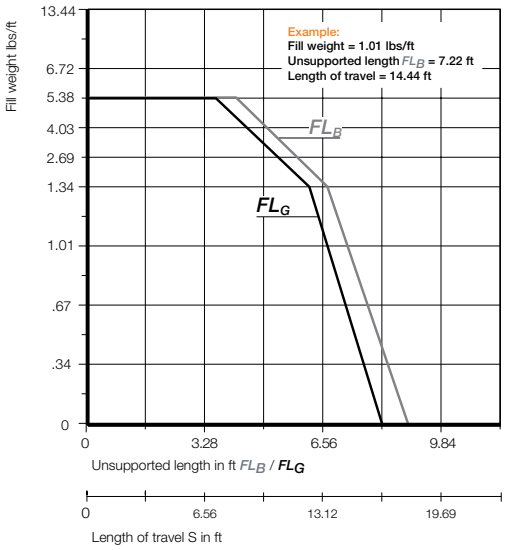


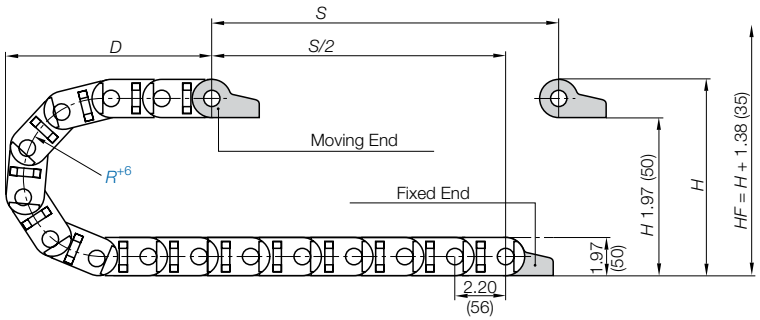
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.38$ **in. (35 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063*) | 2.95 (075*) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the E-Tube is not completely enclosed. Please consult igus®

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

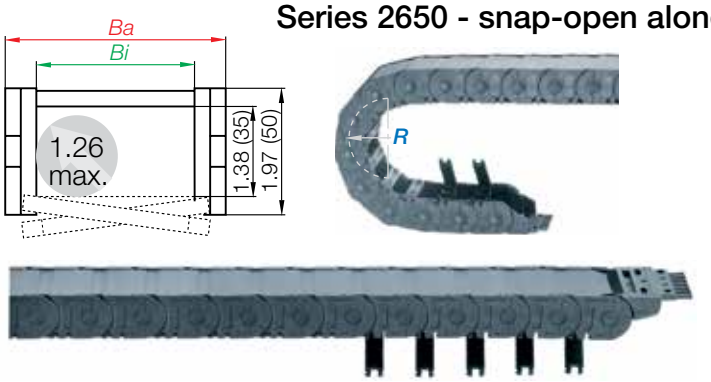
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

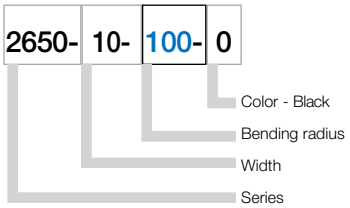
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes

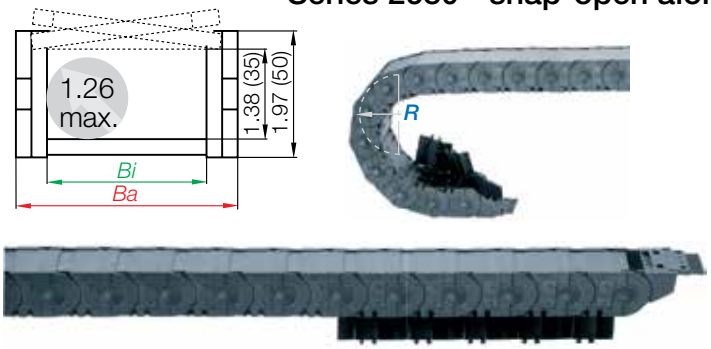
## Series 2650 - snap-open along the inner radius



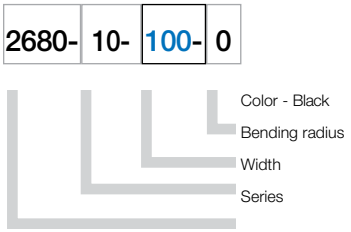

**Part Number Structure**

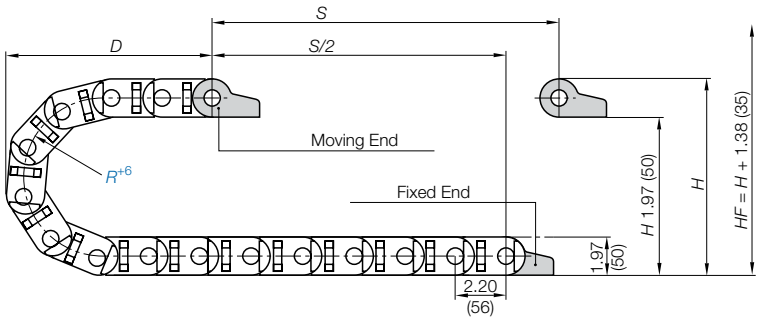



## Series 2680 - snap-open along the inner radius




**Part Number Structure**




Supplement part number with required radius. Example: 2650-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.49 (18)

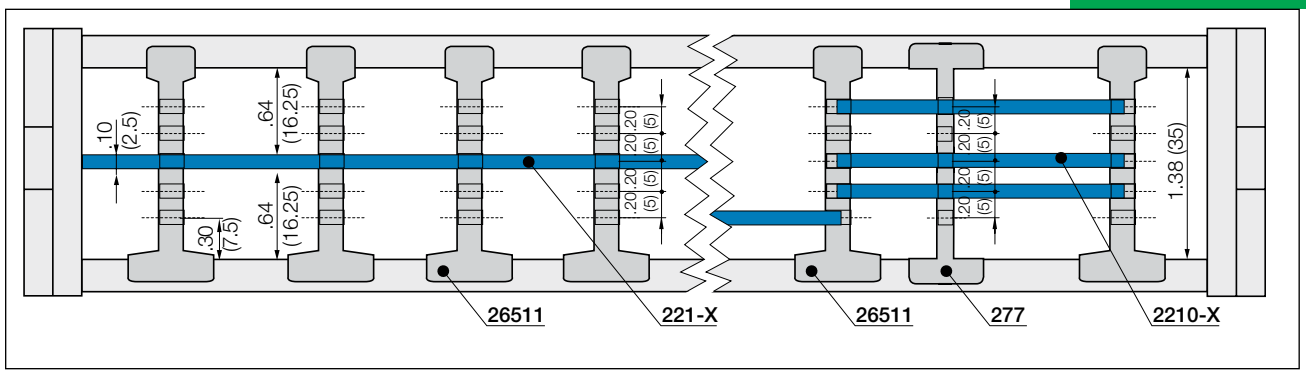
| Part Number. Snap-open inner radius | Part Number. Snap-open outer radius | Bi in. (mm) | Ba in. (mm) | Weight 2650 lbs/ft (kg/m) | Weight 2680 lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 2650-05-[ ]-0 | 2680-05-[ ]-0 | 1.97 (50) | 2.60 (66) | ≈ 0.84 (1.25) | ≈ 0.89 (1.33) |
| 2650-06-[ ]-0 | 2680-06-[ ]-0 | 2.56 (65) | 3.19 (81) | ≈ 0.91 (1.36) | ≈ 0.96 (1.43) |
| 2650-07-[ ]-0 | 2680-07-[ ]-0 | 2.95 (75) | 3.58 (91) | ≈ 0.94 (1.40) | ≈ 1.01 (1.51) |
| 2650-09-[ ]-0 | 2680-09-[ ]-0 | 3.54 (90) | 4.17 (106) | ≈ 1.04 (1.55) | ≈ 1.09 (1.62) |
| 2650-10-[ ]-0 | 2680-10-[ ]-0 | 3.94 (100) | 4.57 (116) | ≈ 1.08 (1.61) | ≈ 1.22 (1.81) |
| 2650-12-[ ]-0 | 2680-12-[ ]-0 | 4.92 (125) | 5.55 (141) | ≈ 1.14 (1.70) | ≈ 1.34 (1.99) |
| 2650-15-[ ]-0 | 2680-15-[ ]-0 | 5.91 (150) | 6.53 (166) | ≈ 1.21 (1.80) | ≈ 1.46 (2.17) |
| 2650-17-[ ]-0 | 2680-17-[ ]-0 | 6.89 (175) | 7.64 (194) | ≈ 1.34 (2.00) | ≈ 1.58 (2.35) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2650-10-100-0

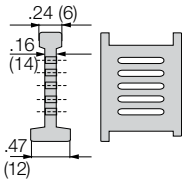
| | 063* | 075* | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063*) | 2.95 (075*) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H | 6.93 (176) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 6.77 (172) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) | 14.13 (359) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) |

* Radius available upon request, please consult igus® for delivery time
Radii 063, 075: the E-Tube is not completely enclosed. Please consult igus®

# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Interior Separation




**In the standard configuration separators are assembled every 2nd E-Chain® link**

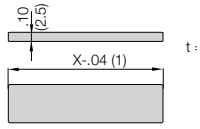



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 26501** |
| Assembled | **Part No. 26511** |

- **Slotted separator 26501**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

## Full-width shelves - for the standard interior separation

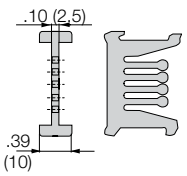



**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

- **Full-width shelf 220-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|
| .98 | (25) | **220-25** | **221-25** | 3.54 | (90) | **220-90** | **221-90** |
| 1.50 | (38) | **220-38** | **221-38** | 4.06 | (103) | **220-103** | **221-103** |
| 2.24 | (57) | **220-57** | **221-57** | 4.92 | (125) | **220-125** | **221-125** |
| 3.03 | (77) | **220-77** | **221-77** | | | | |

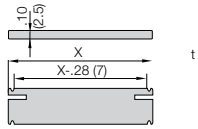



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 276** |
| Assembled | **Part No. 276** |

- **Slotted separator 276**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

## Full-width shelves - for the standard interior separation




**Separator, narrow head**

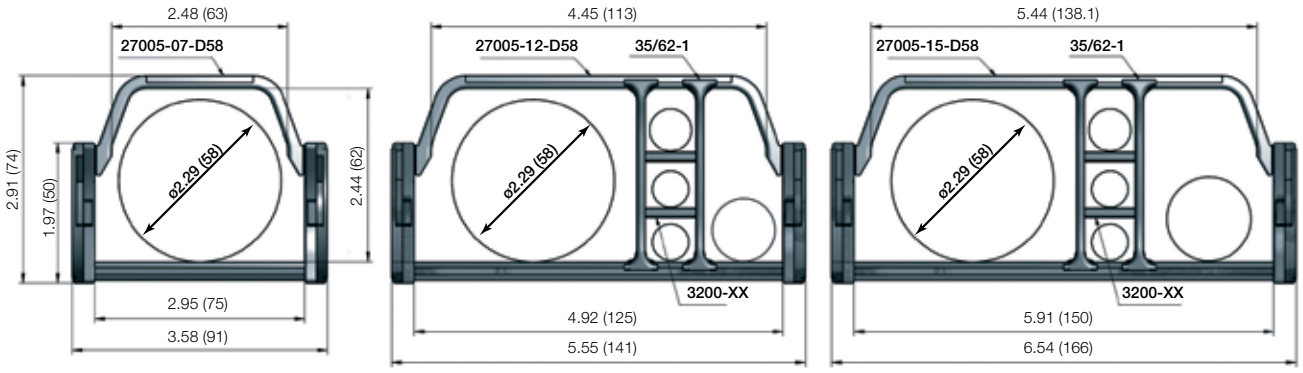
| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Full-width shelf 2200-X**
  this option makes sense in applications with many thin cables with similar diameters. For a consequent subdivision. Full-width shelves can be inserted at 5 different heights in .20" (5 mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|
| .98 | (25) | **2200-25** | **2210-25** | 3.54 | (90) | **2200-90** | **221-90** |
| 1.50 | (38) | **2200-38** | **2210-38** | 4.06 | (103) | **2200-103** | **2210-103** |
| 2.24 | (57) | **2200-57** | **2210-57** | 4.92 | (125) | **2200-125** | **2210-125** |
| 3.03 | (77) | **2200-77** | **2210-77** | | | | |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2650 E-Chain® Half-Tubes
# Extender crossbars




**Part Number.**
**Extender crossbars for E-Chains® that snap-open along inner radius**

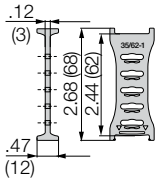
| | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|
| 2650-07D58- ☐ -0 | 2.95 (75) | 3.58 (91) |
| 2650-12D58- ☐ -0 | 4.92 (125) | 5.55 (141) |
| 2650-15D58- ☐ -0 | 5.91 (150) | 6.54 (166) |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 2700-10D58- [100] -0

| | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |

## Interior separation for extender crossbars

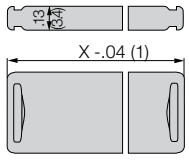



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 35/62-1** |
| Assembled | **Part No. 35/62-1-1** |

- **Standard separator 35/62-1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

## Separator with integrated strain relief

**Strain relief separator Part No. 262-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

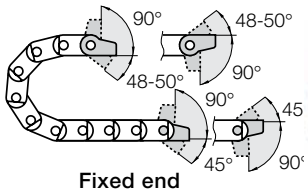
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - Plastic

## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
26...3PZB

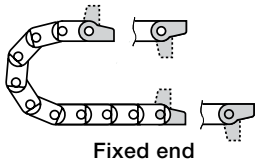



Fixed end
26...4PZB

## Option 2: locking

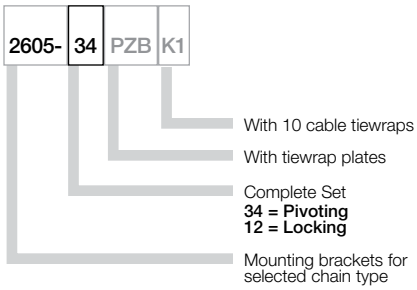
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

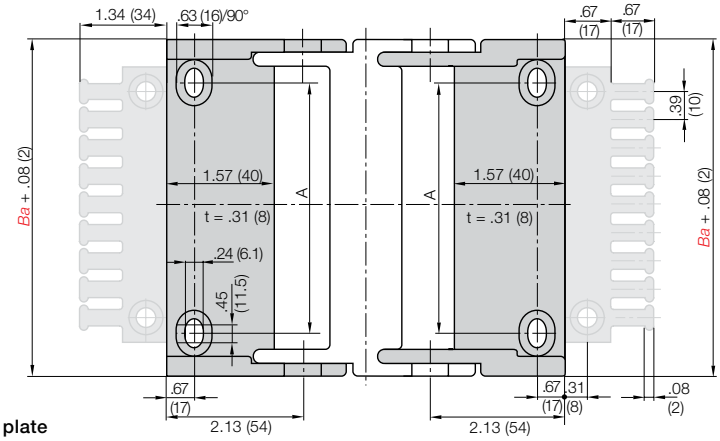
Moving end
26...1PZB



Fixed end
26...2PZB

### Part Number Structure




**Full set, for both ends:**
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 2650:**
**2605-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 2650:**
**2605-34PZBK1**

| For Chain Type | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| 2650/2680-05 | 2605- ☐ PZ | 2605- ☐ PZB | 2605- ☐ PZBK1 | 1.18 | (30) | 5 |
| 2650/2680-06 | 2606- ☐ PZ | 2606- ☐ PZB | 2606- ☐ PZBK1 | 1.77 | (45) | 5 |
| 2650/2680-07 | 2607- ☐ PZ | 2607- ☐ PZB | 2607- ☐ PZBK1 | 2.17 | (55) | 7 |
| 2650/2680-09 | 2609- ☐ PZ | 2609- ☐ PZB | 2609- ☐ PZBK1 | 2.76 | (70) | 9 |
| 2650/2680-10 | 2610- ☐ PZ | 2610- ☐ PZB | 2610- ☐ PZBK1 | 3.15 | (80) | 10 |
| 2650/2680-12 | 2612- ☐ PZ | 2612- ☐ PZB | 2612- ☐ PZBK1 | 4.13 | (105) | 12 |
| 2650/2680-15 | 2615- ☐ PZ | 2615- ☐ PZB | 2615- ☐ PZBK1 | 5.12 | (130) | 15 |
| 2650/2680-17 | 2617- ☐ PZ | 2617- ☐ PZB | 2617- ☐ PZBK1 | 6.10 | (155) | 17 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

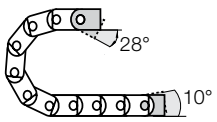
# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

**Moving end**
**2650 = 26500...1**
**2680 = 24800...1**

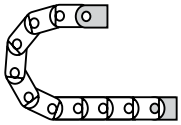


**Fixed end**
**2650 = 26500...2**
**2680 = 26800...2**

## Option 2: locking

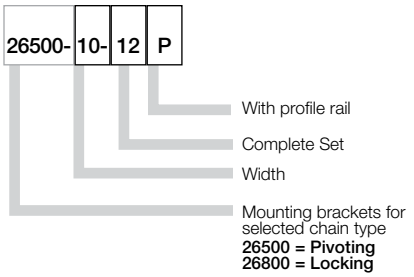
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

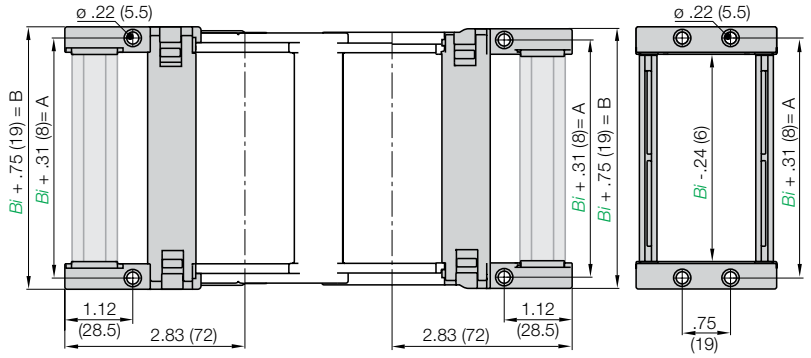
**Moving end**
**2650 = 24510...1**
**2680 = 24810...1**



**Fixed end**
**2650 = 24510...2**
**2680 = 24810...2**

### Part Number Structure




**Full set, for both ends:**
26500-12P Full set, **each part with pin/bore + profile rail**
**Single-part order:**
26500-1P Mounting bracket **with bore + profile rail**
26500-2P Mounting bracket **with pin + profile rail**

**Part No. Full Set** (pivoting)
**With Profile Rail**
**Series 2650/2680:**
**26500-Width-12P**

**Part No. Full Set** (pivoting)
**Without Profile Rail**
**Series 2650/2680:**
**26500-Width-12**

| For Chain Type | Part No. Full set with Profile Rail | Part No. Full Set without Profile Rail | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| 2650/2680-05 | [ ] -05-12P | [ ] -05-12 | 2.28 | (58) | 2.72 | (69) |
| 2650/2680-06 | [ ] -06-12P | [ ] -06-12 | 2.87 | (73) | 3.31 | (84) |
| 2650/2680-07 | [ ] -07-12P | [ ] -07-12 | 3.27 | (83) | 3.70 | (94) |
| 2650/2680-09 | [ ] -09-12P | [ ] -09-12 | 3.86 | (98) | 4.29 | (109) |
| 2650/2680-10 | [ ] -10-12P | [ ] -10-12 | 4.25 | (108) | 4.69 | (119) |
| 2650/2680-12 | [ ] -12-12P | [ ] -12-12 | 5.24 | (133) | 5.67 | (144) |
| 2650/2680-15 | [ ] -15-12P | [ ] -15-12 | 6.22 | (158) | 6.65 | (169) |
| 2650/2680-17 | [ ] -17-12P | [ ] -17-12 | 7.20 | (183) | 7.64 | (194) |

[26500 / 26800] or [26510 / 26810]

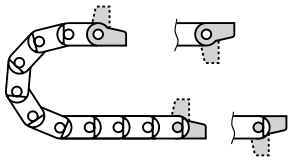
For pivoting brackets choose [26500 or 26800]
For locking brackets choose [26510 or 26810]
Example: [26500] -10-12P

# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - Steel

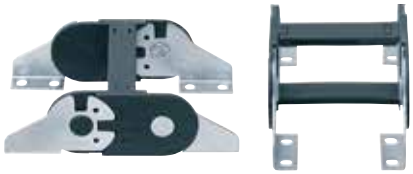
## Option 1: Steel

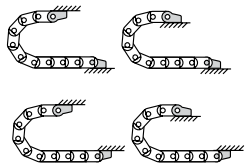
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
260...1



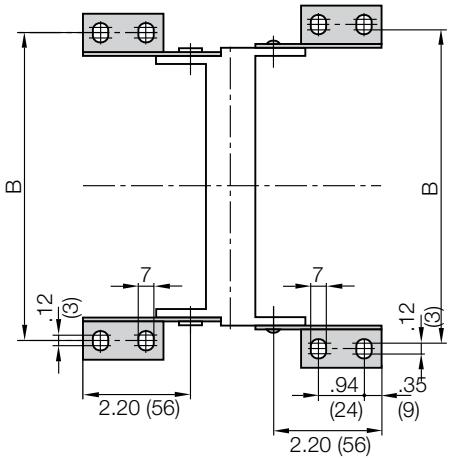
Fixed end
260...2



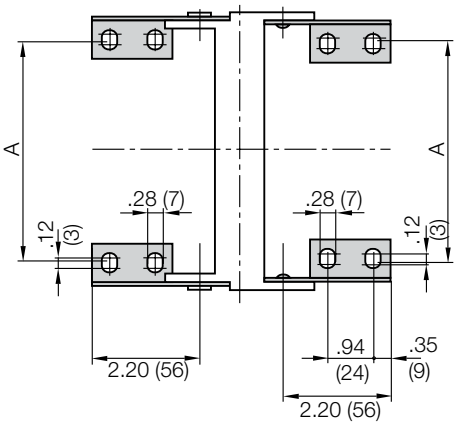


Possible installation configurations -

260-1 260-2*




260-1 260-2




*pivoting with no stop, (360°)

| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 2650/2680-05 | **260-12** | 1.46 | (37) | 3.27 | (83) |
| 2650/2680-06 | **260-12** | 2.05 | (52) | 3.86 | (98) |
| 2650/2680-07 | **260-12** | 2.44 | (62) | 4.25 | (108) |
| 2650/2680-09 | **260-12** | 3.03 | (77) | 4.84 | (123) |
| 2650/2680-10 | **260-12** | 3.43 | (87) | 5.24 | (133) |
| 2650/2680-12 | **260-12** | 4.41 | (112) | 6.22 | (158) |
| 2650/2680-15 | **260-12** | 5.39 | (137) | 7.20 | (183) |
| 2650/2680-17 | **260-12** | 6.42 | (163) | 8.23 | (209) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 2650/2680:
**260-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 2650/2680:
**260-1**

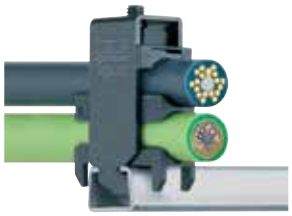
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 2650/2680:
**260-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 2650/2680 E-Chain® Half-Tubes and Full Tubes
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

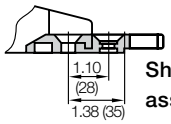
## Chainfix Clip

### Modular snap-on strain relief device

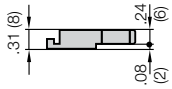
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

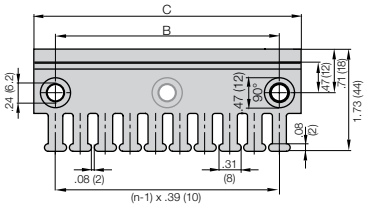



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

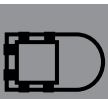
| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E2/000
# Series 3400/3500

1.77 1.77

## Price Index

Series 3400/3500

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Snap-open mechanism, choice of snap-open on left or right. Hinged crossbar can be swiveled by more than 180° on both sides. Lightning-fast closing by hand. Secure fit without additional locking devices.

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

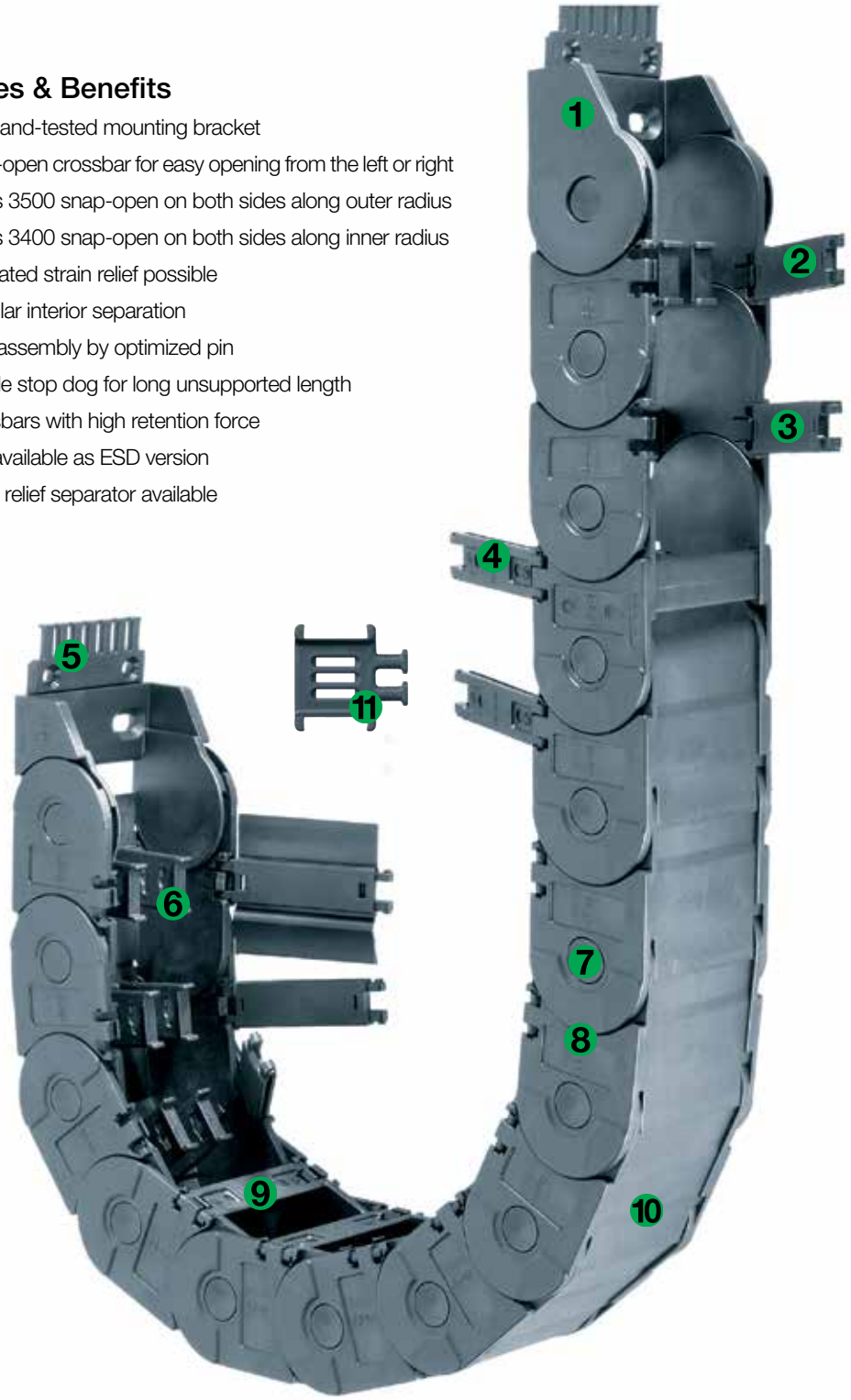
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3500 snap-open on both sides along outer radius
4. Series 3400 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

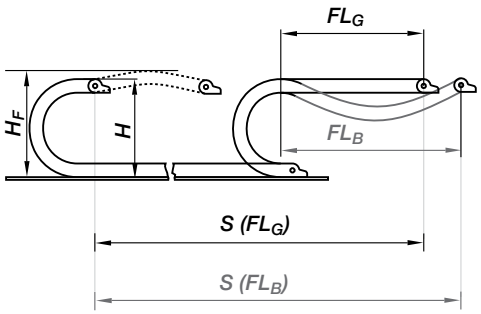
| | |
|---|---|
| 9.84 ft (3 m) **3400-100-100-0** | **E-Chain®** |
| With 2 separators **45.1.1** assembled every 2nd link | **Interior Separation** |
| 1 Set **3100-34PZB** | **Mounting Bracket** |

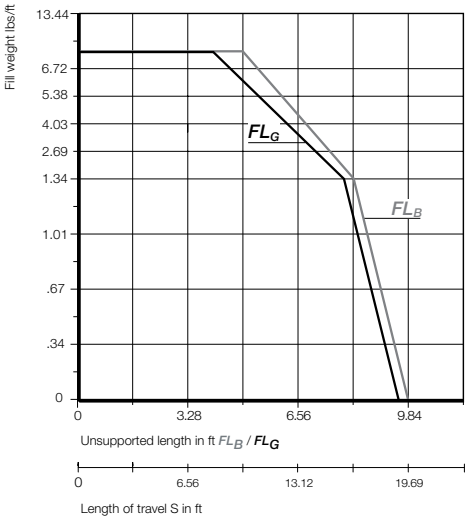
# E-Chain System® E2/000
# Series 3400/3500
# Installation Dimensions

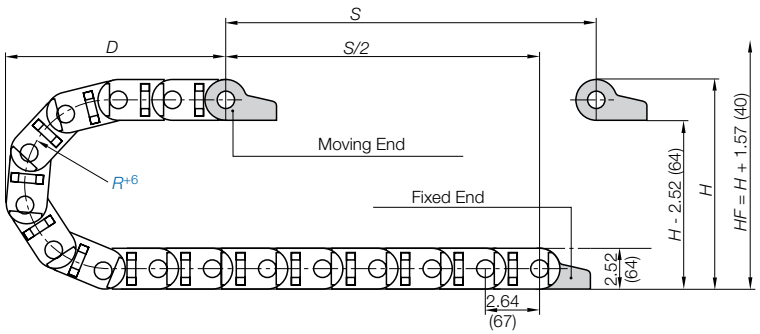


## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| H | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.11 (765) | 36.22 (920) | 42.52 (1080) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

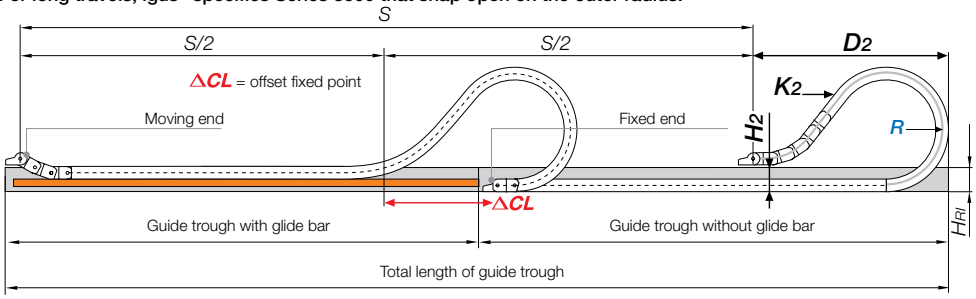
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 492 ft. (150 m)**
**For long travels, igus® specifies Series 3500 that snap open on the outer radius.**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




| R | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 5.91 (150) | 7.87 (200) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2^{+25}$ | 8.19 (208) | 9.17 (233) | 18.70 (475) | 22.44 (570) | 30.71 (780) | 39.76 (1010) | 45.28 (1150) |
| $K_2$ | 14.57 (370) | 17.72 (450) | 31.65 (804) | 39.57 (1005) | 52.76 (1340) | 65.94 (1675) | 76.50 (1943) |
| ΔCL | – | – | 9.17 (233) | 11.93 (303) | 18.23 (463) | 25.31 (643) | 28.86 (733) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ **Chapter 1**

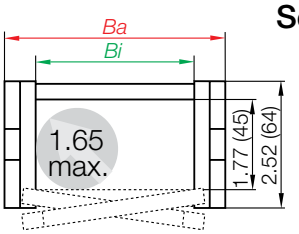
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3400/3500

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



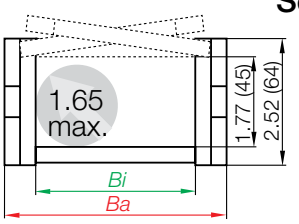
## Series 3400 - snap-open along the inner radius



**Part Number Structure**

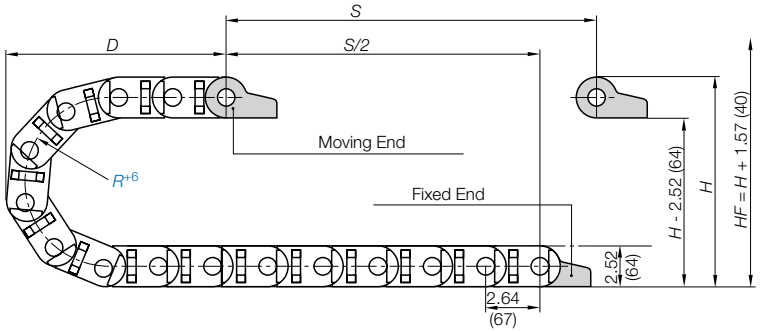
| 3400- | 100- | 100- | 0 |
|---|---|---|---|
| | | Bending radius | Color - Black |
| | Width | | |
| Series | | | |

## Series 3500 - snap-open along the outer radius



**Part Number Structure**

| 3500- | 100- | 100- | 0 |
|---|---|---|---|
| | | Bending radius | Color - Black |
| | Width | | |
| Series | | | |



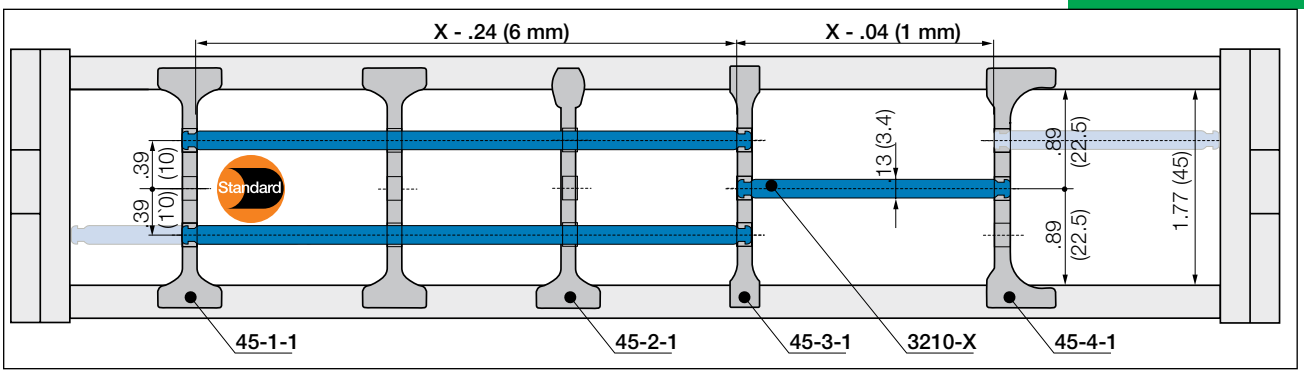

Supplement part number with required radius.
Example: 3500-100-100-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

| Part Number. Snap-open inner radius | Snap-open outer radius | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|
| 3400-050-□-0 | 3500-050-□-0 | 1.97 (50) | 2.76 (70) | ≈ 1.07 (1.60) |
| 3400-075-□-0 | 3500-075-□-0 | 2.95 (75) | 3.74 (95) | ≈ 1.20 (1.78) |
| 3400-100-□-0 | 3500-100-□-0 | 3.94 (100) | 4.72 (120) | ≈ 1.30 (1.93) |
| 3400-115-□-0 | 3500-115-□-0 | 4.53 (115) | 5.31 (135) | ≈ 1.34 (1.99) |
| 3400-125-□-0 | 3500-125-□-0 | 4.92 (125) | 5.71 (145) | ≈ 1.36 (2.03) |
| 3400-150-□-0 | 3500-150-□-0 | 5.91 (150) | 6.69 (170) | ≈ 1.46 (2.17) |
| 3400-175-□-0 | 3500-175-□-0 | 6.89 (175) | 7.68 (195) | ≈ 1.53 (2.28) |
| 3400-200-□-0 | 3500-200-□-0 | 7.87 (200) | 8.66 (220) | ≈ 1.65 (2.45) |
| 3400-225-□-0 | 3500-225-□-0 | 8.86 (225) | 9.65 (245) | ≈ 1.74 (2.59) |
| 3400-250-□-0 | 3500-250-□-0 | 9.84 (250) | 10.63 (270) | ≈ 1.83 (2.73) |

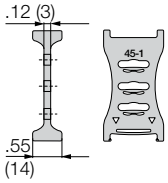
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 3500-100-100-0

| | 075 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 1.50 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| H | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.11 (765) | 36.22 (920) | 42.52 (1080) |

# E-Chain System® E2/000
# Series 3400/3500
# Interior Separation



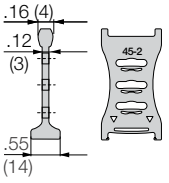

**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 45.1** |
| Assembled | **Part No. 45.1.1** |

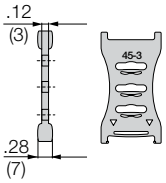
- **Standard separator 45.1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 45.2** |
| Assembled | **Part No. 45.2.1** |

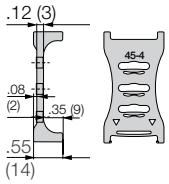
- **Separator 45.2 For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 45-3** |
| Assembled | **Part No. 45.3.1** |

- **Separator 45.3 For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

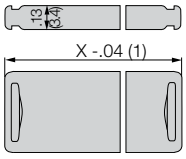



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 45.4** |
| Assembled | **Part No. 45.4.1** |

- **Separator 45.4 For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

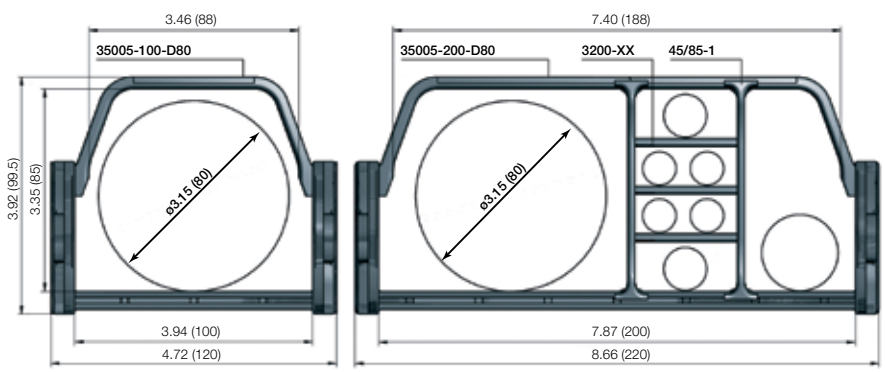
| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3400/3500
# Extender crossbars



**Part Number.**

| Extender crossbars for E-Chains® that snap-open along **inner** radius | Extender crossbars for E-Chains® that snap-open along **outer** radius | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| 3400-100D80-☐-0 | 3500-100D80-☐-0 | 2.95 (100) | 3.58 (120) |
| 3400-200D80-☐-0 | 3400-200D80-☐-0 | 4.92 (200) | 5.55 (220) |

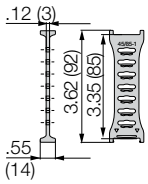
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 2700-10D58-100-0

| | 075* | 100* | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |

*Radius 075 and 100 are only available for Series 3500 E-Chains®

## Interior separation for extender crossbars

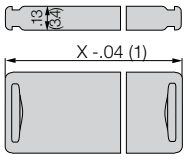



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 45/85.1** |
| Assembled | **Part No. 45/85.1.1** |

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | 3200-50 | 3210-50 | 5.91 (150) | 3200-150 | 3210-150 |
| 2.95 (075) | 3200-75 | 3210-75 | 6.89 (175) | 3200-175 | 3210-175 |
| 3.94 (100) | 3200-100 | 3210-100 | 7.87 (200) | 3200-200 | 3210-200 |
| 4.53 (115) | 3200-115 | 3210-115 | 8.86 (225) | 3200-225 | 3210-225 |
| 4.92 (125) | 3200-125 | 3210-125 | 9.84 (250) | 3200-250 | 3210-250 |

## Separator with integrated strain relief

**Strain relief separator Part No. 301-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

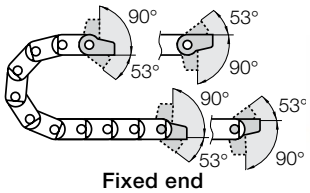
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 3400/3500
# Mounting Bracket - Plastic

## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB

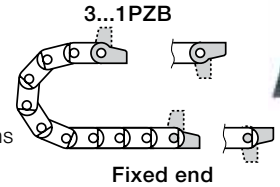



Fixed end
3...4PZB

## Option 2: locking

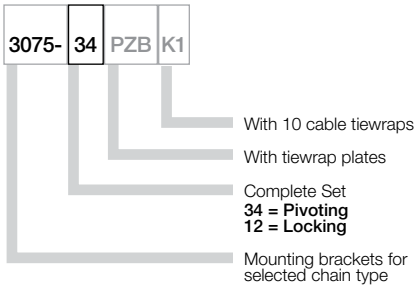
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

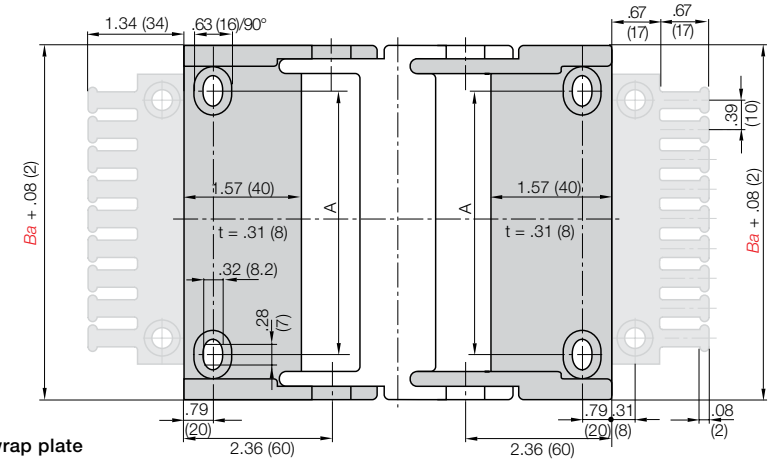
Moving end
3...1PZB



Fixed end
3...2PZB

### Part Number Structure




**Full set, for both ends:**
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 3400:**
**3075-34PZ**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 3400:**
**3075-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 3400:**
**3075-34PZBK1**

| For Chain Type | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| 3400/3500-050 | 3075- ☐ PZ | 3075- ☐ PZB | 3075- ☐ PZBK1 | 2.09 | (28) | 5 |
| 3400/3500-075 | 3075- ☐ PZ | 3075- ☐ PZB | 3075- ☐ PZBK1 | 2.09 | (53) | 7 |
| 3400/3500-100 | 3100- ☐ PZ | 3100- ☐ PZB | 3100- ☐ PZBK1 | 3.07 | (78) | 10 |
| 3400/3500-115 | 3115- ☐ PZ | 3115- ☐ PZB | 3115- ☐ PZBK1 | 3.66 | (93) | 11 |
| 3400/3500-125 | 3125- ☐ PZ | 3125 ☐ PZB | 3125 ☐ PZBK1 | 4.06 | (103) | 12 |
| 3400/3500-150 | 3150- ☐ PZ | 3150- ☐ PZB | 3150- ☐ PZBK1 | 5.04 | (128) | 15 |
| 3400/3500-175 | 3175- ☐ PZ | 3175- ☐ PZB | 3175- ☐ PZBK1 | 6.02 | (153) | 17 |
| 3400/3500-200 | 3200- ☐ PZ | 3200- ☐ PZB | 3200- ☐ PZBK1 | 7.01 | (178) | 20 |
| 3400/3500-225 | 3225- ☐ PZ | 3225- ☐ PZB | 3225- ☐ PZBK1 | 7.99 | (203) | 22 |
| 3400/3500-250 | 3250- ☐ PZ | 3250- ☐ PZB | 3250- ☐ PZBK1 | 8.98 | (228) | 25 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3400/3500
# Mounting Bracket - KMA

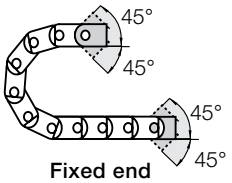
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

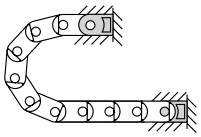


## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34800...1



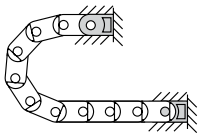


Fixed end
34800...2

## Option 2: locking

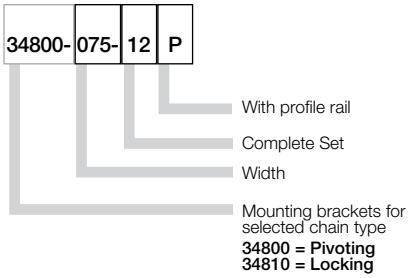
- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

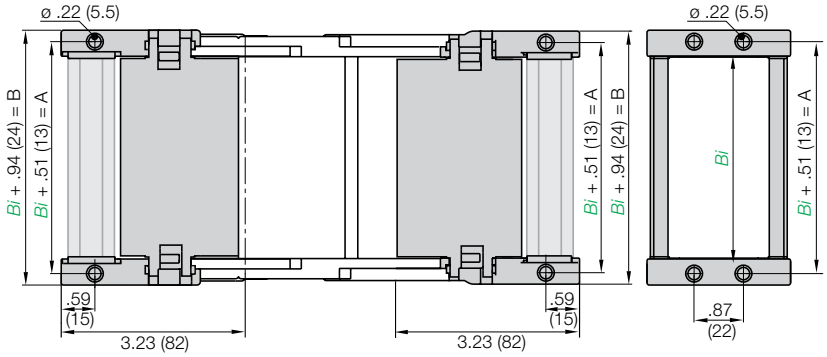
Moving end
34810...1



Fixed end
34810...2

### Part Number Structure




**Full set, for both ends:**
34800-12P Full set, **each part with pin/bore + profile rail**
**Single-part order:**
34800-1P Mounting bracket **with bore + profile rail**
34800-2P Mounting bracket **with pin + profile rail**

**Part No. Full Set** (pivoting)
**With Profile Rail**
**Series 3480:**
**34800-Width-12P**

**Part No. Full Set** (pivoting)
**Without Profile Rail**
**Series 3480:**
**34800-Width-12**

| For Chain Type | Part No. Full set with Profile Rail | Part No. Full Set without Profile Rail | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) |
|---|---|---|---|---|---|---|
| 3480-075 | [ ] -075-12P | [ ] -075-12 | 3.46 | (88) | 3.90 | (99) |
| 3480-100 | [ ] -100-12P | [ ] -100-12 | 4.45 | (113) | 4.88 | (124) |
| 3480-115 | [ ] -115-12P | [ ] -115-12 | 5.04 | (128) | 5.47 | (139) |
| 3480-150 | [ ] -150-12P | [ ] -150-12 | 6.42 | (163) | 6.85 | (174) |
| 3480-175 | [ ] -175-12P | [ ] -175-12 | 7.40 | (188) | 7.83 | (199) |

[34800] or [34810]

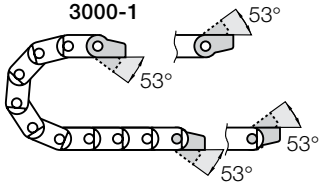
For pivoting brackets choose [34800]
For locking brackets choose [34810]
Example: [34800] -075-12P

# E-Chain System® E2/000
# Series 3400/3500
# Mounting Bracket - Steel

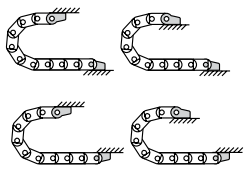
## Option 1: Steel

- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

Moving end
3000-1

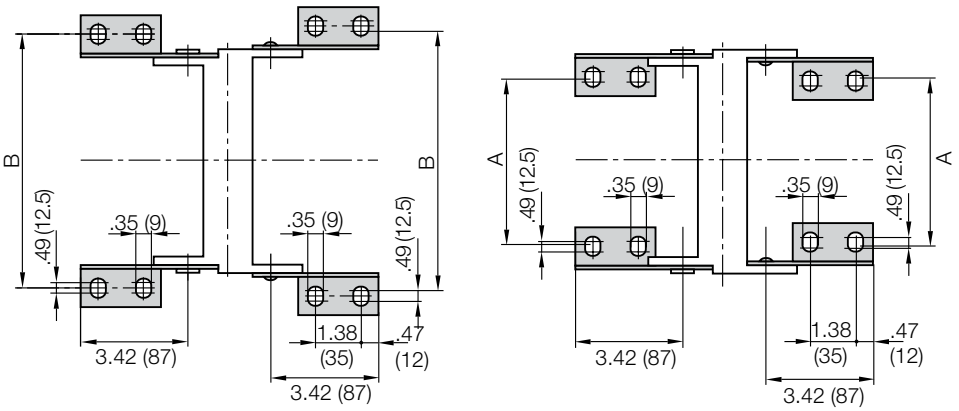



Fixed end
3000-2



Possible installation configurations -

3000-1 3000-2* 3000-1 3000-2




*pivoting with no stop, (360°)

| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) | in. | (mm) |
|---|---|---|---|---|---|---|---|
| 3480-075 | **3000-12** | 2.09 | (53) | 4.37 | (111) | 4.80 | (122) |
| 3480-100 | **3000-12** | 3.07 | (78) | 5.35 | (136) | 5.79 | (147) |
| 3480-115 | **3000-12** | 3.66 | (93) | 5.94 | (151) | 6.38 | (162) |
| 3480-150 | **3000-12** | 5.04 | (128) | 7.32 | (186) | 7.76 | (197) |
| 3480-175 | **3000-12** | 6.02 | (153) | 8.35 | (212) | 8.82 | (224) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 3480:
**3000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 3480:
**3000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 3480:
**3000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

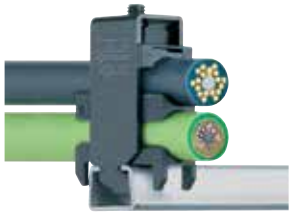
# E-Chain System® E2/000
# Series 3400/3500
# Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

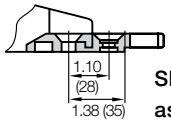
## Chainfix Clip

### Modular snap-on strain relief device

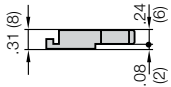
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

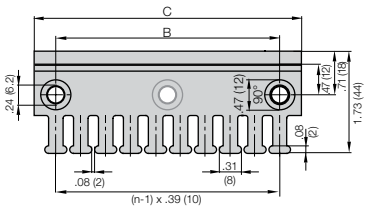



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

# E-Chain System® E2/000
# Series 3400/3500
# Guide Troughs



Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 93-30**
- 1/2 travel length of glide bars
  **Part number 93-01**
- Installation sets as end connectors
  **Part Number 93-50 -XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

**Part No. 93-30**

= 13 sections of 6.56 ft (2 m) glide bar

**Part No. 93-01**

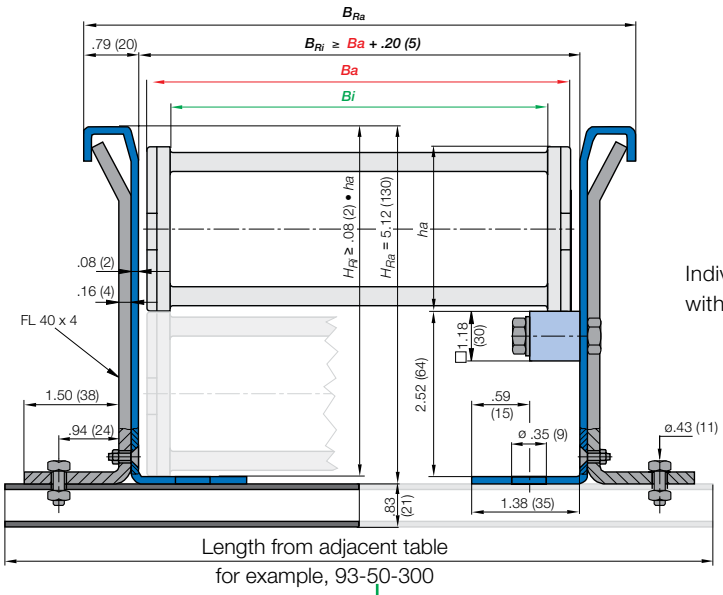
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 93-50-300 for 15.75" (400 mm) long profile rail.

**Example:**

Width of Crossbar
3500-**075**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-050** | 2.95 (75) | **93-50-200** |
| **-075** | 3.94 (100) | **93-50-225** |
| **-100** | 4.92 (125) | **93-50-250** |
| **-115** | 5.51 (140) | **93-50-250** |
| **-125** | 5.91 (150) | **93-50-275** |
| **-150** | 6.89 (175) | **93-50-300** |
| **-175** | 7.87 (200) | **93-50-325** |
| **-200** | 8.86 (225) | **93-50-350** |
| **-225** | 9.84 (250) | **93-50-375** |
| **-250** | 10.83 (275) | **93-50-400** |

Standard length profile rail




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3450/3480 E-Chain®
# Half-Tubes and Full Tubes

1.77 1.77

## Price Index

Series 3450/3480

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

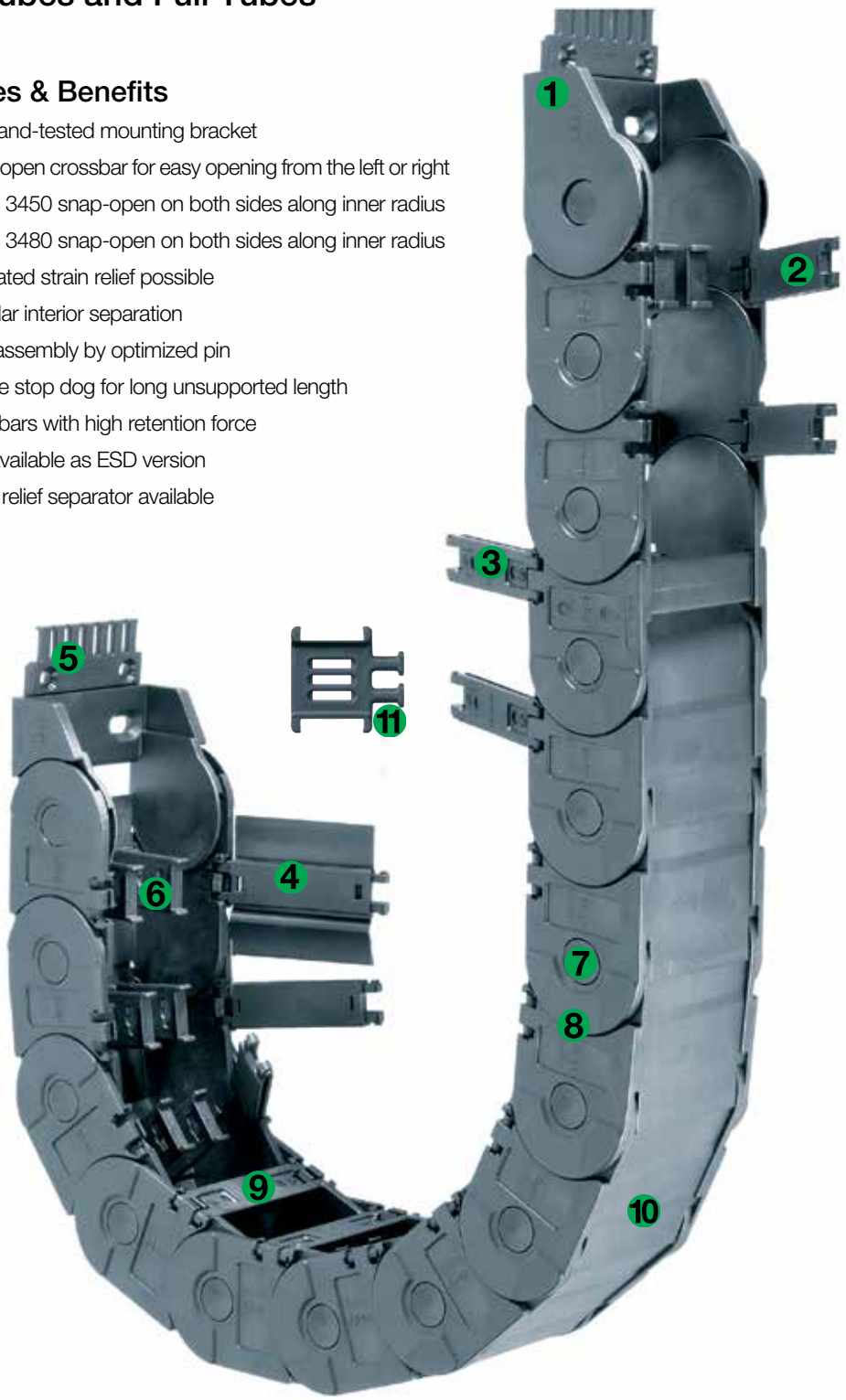
## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If long service life is required
- If easy installation is required

- If the application is very simple
  ➤ **Series E300 E-Z Chain**
- If greater stability is required
  ➤ **Series E4-42 E4-1 Series**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 3450 snap-open on both sides along inner radius
4. Series 3480 snap-open on both sides along inner radius
5. Integrated strain relief possible
6. Modular interior separation
7. Easy assembly by optimized pin
8. Double stop dog for long unsupported length
9. Crossbars with high retention force
10. Also available as ESD version
11. Strain relief separator available




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

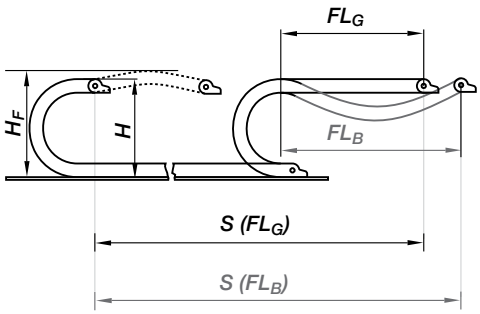
| | |
|---|---|
| 9.84 ft (3 m) **3450-100-125-0** | **E-Chain®** |
| With 2 separators **45.1.1** assembled every 2nd link | **Interior Separation** |
| 1 Set **3125-34PZB** | **Mounting Bracket** |

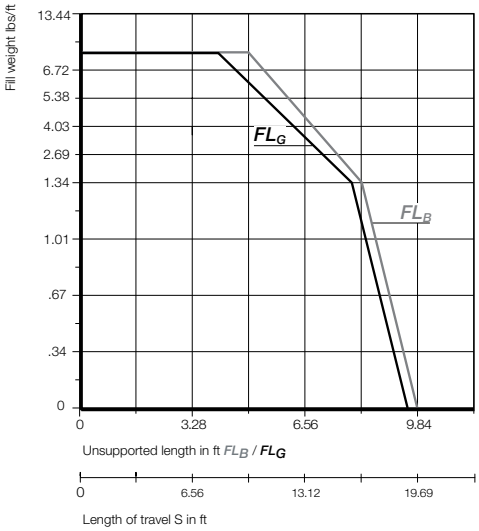
# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Installation Dimensions

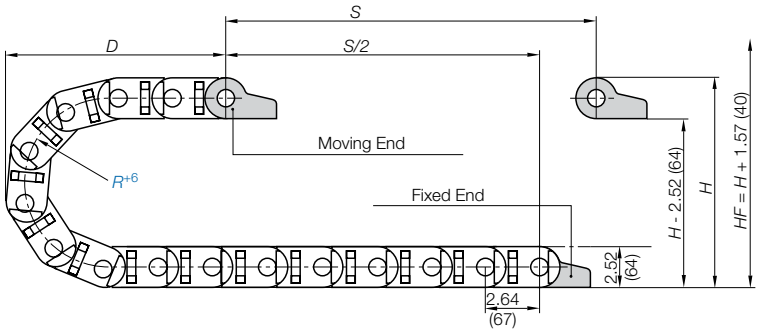


## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.95 (075*) | 3.94 (100*) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| H | 8.42 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.11 (765) | 36.22 (920) | 42.52 (1080) |

* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the E-Tube is not completely enclosed. Please consult igus®
Before using Series 3450/3480 on long travels please consult igus®.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

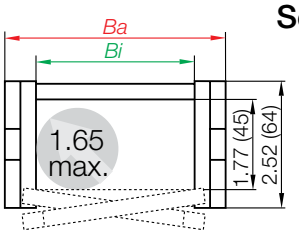
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 3450 - snap-open along the inner radius, closed along the outer

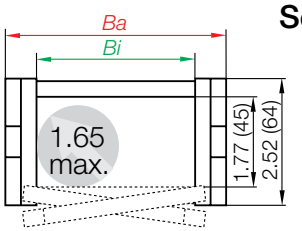


Part Number Structure

3450 | 100- | 125- | 0

- 0 — Color - Black
- 125 — Bending radius
- 100 — Width
- 3450 — Series

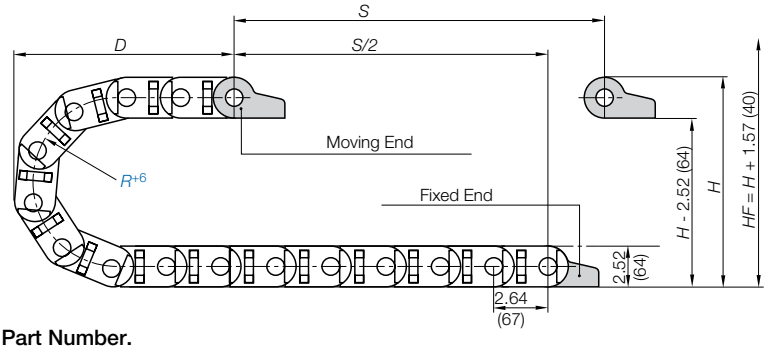
## Series 3480 - snap-open along the inner radius, fully enclosed



Part Number Structure

3480- | 100- | 125- | 0

- 0 — Color - Black
- 125 — Bending radius
- 100 — Width
- 3480 — Series




Supplement part number with required radius.
Example: 3450-100-125-0
Pitch: 264 in. (67 mm) per link links/ft(m) = 4.57 (15)

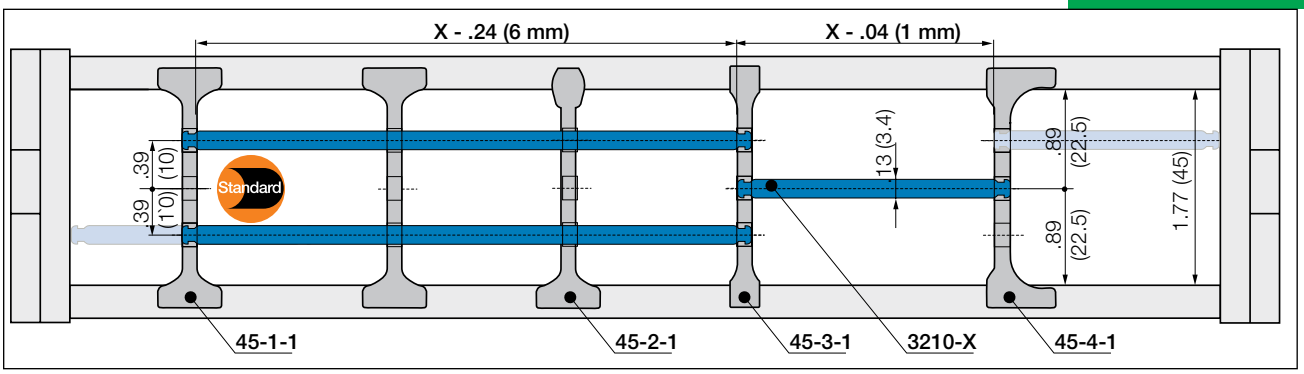
| Part Number. Snap-open inner radius | Snap-open outer radius | Bi in. (mm) | Ba in. (mm) | Weight 3450 lbs/ft (kg/m) | Weight 3480 lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 3450-050-□-0 | 3480-050-□-0 | 1.97 (50) | 2.76 (70) | ≈ 1.19 (1.77) | ≈ 1.32 (1.96) |
| 3450-075-□-0 | 3480-075-□-0 | 2.95 (75) | 3.74 (95) | ≈ 1.31 (1.95) | ≈ 1.39 (2.07) |
| 3450-100-□-0 | 3480-100-□-0 | 3.94 (100) | 4.72 (120) | ≈ 1.44 (2.15) | ≈ 1.55 (2.30) |
| 3450-115-□-0 | 3480-115-□-0 | 4.53 (115) | 5.31 (135) | ≈ 1.55 (2.30) | ≈ 1.65 (2.46) |
| 3450-125-□-0 | 3480-125-□-0 | 4.92 (125) | 5.71 (145) | ≈ 1.63 (2.42) | ≈ 1.67 (2.49) |
| 3450-150-□-0 | 3480-150-□-0 | 5.91 (150) | 6.69 (170) | ≈ 1.75 (2.60) | ≈ 1.76 (2.62) |
| 3450-175-□-0 | 3480-175-□-0 | 6.89 (175) | 7.68 (195) | ≈ 1.84 (2.75) | ≈ 1.88 (2.80) |
| 3450-200-□-0 | 3480-200-□-0 | 7.87 (200) | 8.66 (220) | ≈ 1.95 (2.90) | ≈ 1.98 (2.94) |
| 3450-225-□-0 | 3480-225-□-0 | 8.86 (225) | 9.65 (245) | ≈ 2.12 (3.15) | ≈ 2.10 (3.12) |
| 3450-250-□-0 | 3480-250-□-0 | 9.84 (250) | 10.63 (270) | ≈ 2.22 (3.30) | ≈ 2.20 (3.28) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 3450-100-125-0

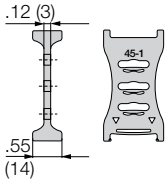
| | 075* | 100* | 200 | 250 | 300 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 2.95 (075*) | 3.94 (100*) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| H | 8.42 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 18.27 (464) | 22.20 (564) | 26.14 (664) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 13.11 (333) | 15.08 (383) | 17.05 (433) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 30.11 (765) | 36.22 (920) | 42.52 (1080) |

* Radius available upon request, please consult igus® for delivery time
Radii 075, 100: the E-Tube is not completely enclosed. Please consult igus®

# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Interior Separation



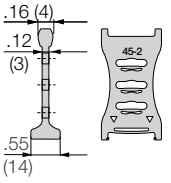

**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 45.1** |
| Assembled | **Part No. 45.1.1** |

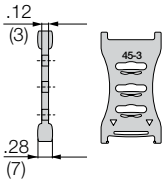
- **Standard separator 45.1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 45.2** |
| Assembled | **Part No. 45.2.1** |

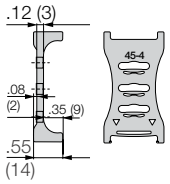
- **Separator 45.2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 45.3** |
| Assembled | **Part No. 45.3.1** |

- **Separator 45.3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

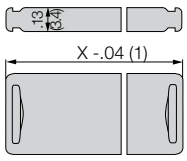



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 45.4** |
| Assembled | **Part No. 45.4.1** |

- **Separator 45.4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required.

**Lockable full-width shelves - for the standard interior separation**




**Full width shelf, lockable**

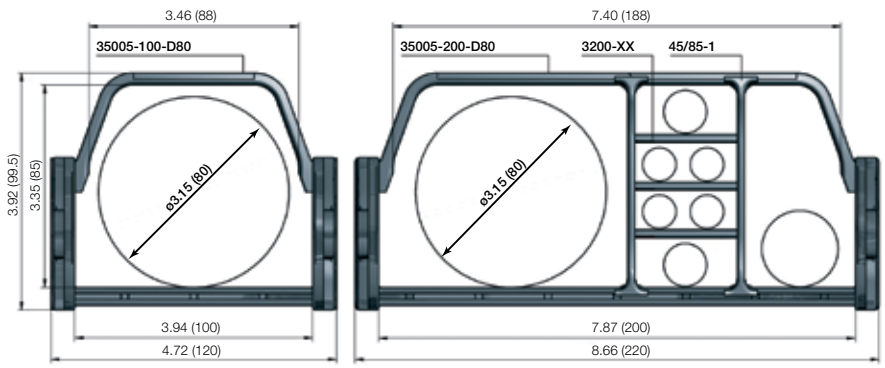
| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-050** | **3210-050** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-075** | **3210-075** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3450 E-Chain® Half-Tubes
# Extender crossbars



**Part Number.**
Extender crossbars
for E-Chains®
that snap-open
along **inner** radius

| | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|
| 3450-100D80-☐-0 | 2.95 (100) | 3.58 (120) |
| 3450-200D80-☐-0 | 4.92 (200) | 5.55 (220) |

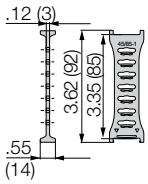
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 3450-100D80-100-0

| | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|
| R | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |

*Extender crossbars are only available for Series 3450 E-Chains®

## Interior separation for extender crossbars

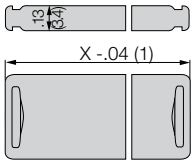



**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 45/85.1** |
| Assembled | **Part No. 45/85.1.1** |

- **Standard separator 45/85.1, wide base**
  For maximum locking strength and safe standing. In standard configuration separators are assembled every 2nd E-Chain® link.

### Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-050** | **3210-050** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-075** | **3210-075** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

## Separator with integrated strain relief

**Strain relief separator Part No. 34501-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

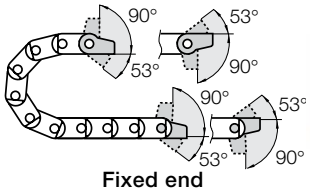
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - Plastic

## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

Moving end
3...3PZB

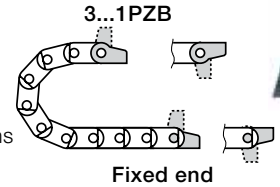



Fixed end
3...4PZB

## Option 2: locking

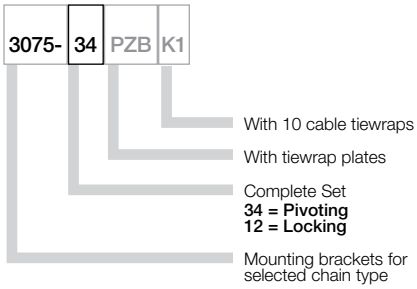
- For unsupported and gliding applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

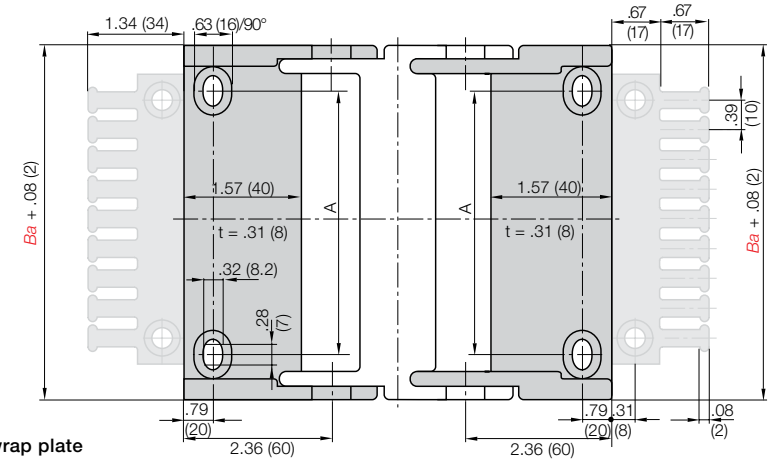
Moving end
3...1PZB



Fixed end
3...2PZB

### Part Number Structure




**Full set, for both ends:**
3075- 34 PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**
3075- 3 PZB Mounting bracket **with bore + tiewrap plate**
3075- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 3450:**
**3075-34PZ**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 3450:**
**3075-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 3450:**
**3075-34PZBK1**

| For Chain Type | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| 3450/3480-050 | 3075- ☐ PZ | 3075- ☐ PZB | 3075- ☐ PZBK1 | 2.09 | (28) | 5 |
| 3450/3480-075 | 3075- ☐ PZ | 3075- ☐ PZB | 3075- ☐ PZBK1 | 2.09 | (53) | 7 |
| 3450/3480-100 | 3100- ☐ PZ | 3100- ☐ PZB | 3100- ☐ PZBK1 | 3.07 | (78) | 10 |
| 3450/3480-115 | 3115- ☐ PZ | 3115- ☐ PZB | 3115- ☐ PZBK1 | 3.66 | (93) | 11 |
| 3450/3480-125 | 3125- ☐ PZ | 3125 ☐ PZB | 3125 ☐ PZBK1 | 4.06 | (103) | 12 |
| 3450/3480-150 | 3150- ☐ PZ | 3150- ☐ PZB | 3150- ☐ PZBK1 | 5.04 | (128) | 15 |
| 3450/3480-175 | 3175- ☐ PZ | 3175- ☐ PZB | 3175- ☐ PZBK1 | 6.02 | (153) | 17 |
| 3450/3480-200 | 3200- ☐ PZ | 3200- ☐ PZB | 3200- ☐ PZBK1 | 7.01 | (178) | 20 |
| 3450/3480-225 | 3225- ☐ PZ | 3225- ☐ PZB | 3225- ☐ PZBK1 | 7.99 | (203) | 22 |
| 3450/3480-250 | 3250- ☐ PZ | 3250- ☐ PZB | 3250- ☐ PZBK1 | 8.98 | (228) | 25 |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 3075- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported applications
- Bolted connection outside of chain cross section
- Confined installation conditions
- Attachment points on all sides
- Stackable

Moving end
34800...1

Fixed end
34800...2

## Option 2: locking

- For vertical hanging/standing applications
- Bolted connection outside of chain cross section
- For very high speeds and accelerations
- Attachment points on all sides
- Stackable

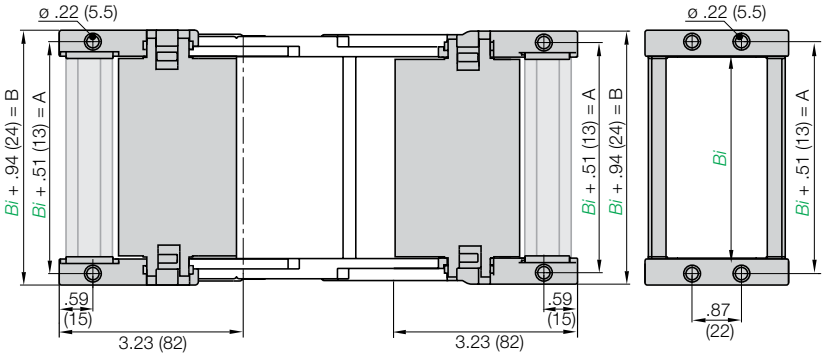
Moving end
34810...1

Fixed end
34810...2

### Part Number Structure

| 34800- | 075- | 12 | P |
|---|---|---|---|

- P: With profile rail
- 12: Complete Set
- 075: Width
- 34800-: Mounting brackets for selected chain type
  34800 = Pivoting
  34810 = Locking




**Full set, for both ends:**
34800- 12 P Full set, **each part with pin/bore + profile rail**

**Single-part order:**
34800- 1 P Mounting bracket **with bore + profile rail**
34800- 2 P Mounting bracket **with pin + profile rail**

**Part No. Full Set** (pivoting)
**With Profile Rail**
**Series 3480:**
**34800-Width-12P**

**Part No. Full Set** (pivoting)
**Without Profile Rail**
**Series 3480:**
**34800-Width-12**

| For Chain Type | Part No. Full set with Profile Rail | Part No. Full Set without Profile Rail | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) |
|---|---|---|---|---|---|---|
| 3450/3480-050 | [ ] -050-12P | [ ] -050-12 | 2.48 | (63) | 2.91 | (74) |
| 3450/3480-075 | [ ] -075-12P | [ ] -075-12 | 3.46 | (88) | 3.90 | (99) |
| 3450/3480-100 | [ ] -100-12P | [ ] -100-12 | 4.45 | (113) | 4.88 | (124) |
| 3450/3480-115 | [ ] -115-12P | [ ] -115-12 | 5.04 | (128) | 5.47 | (139) |
| 3450/3480-125 | [ ] -125-12P | [ ] -125-12 | 5.43 | (138) | 5.87 | (149) |
| 3450/3480-150 | [ ] -150-12P | [ ] -150-12 | 6.42 | (163) | 6.85 | (174) |
| 3450/3480-175 | [ ] -175-12P | [ ] -175-12 | 7.40 | (188) | 7.83 | (199) |
| 3450/3480-200 | [ ] -200-12P | [ ] -200-12 | 8.38 | (213) | 8.82 | (224) |
| 3450/3480-225 | [ ] -225-12P | [ ] -225-12 | 9.37 | (238) | 9.80 | (249) |
| 3450/3480-250 | [ ] -250-12P | [ ] -250-12 | 10.35 | (263) | 10.79 | (274) |

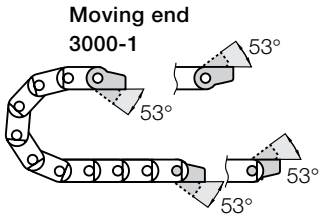
[34800] or [34810]

For pivoting brackets choose [34800]
For locking brackets choose [34810]
Example: [34800] -075-12P

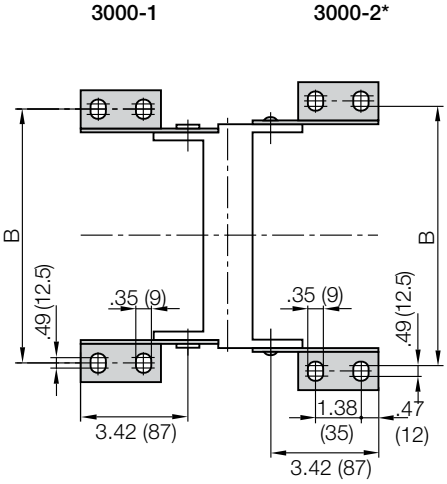
# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Mounting Bracket - Steel

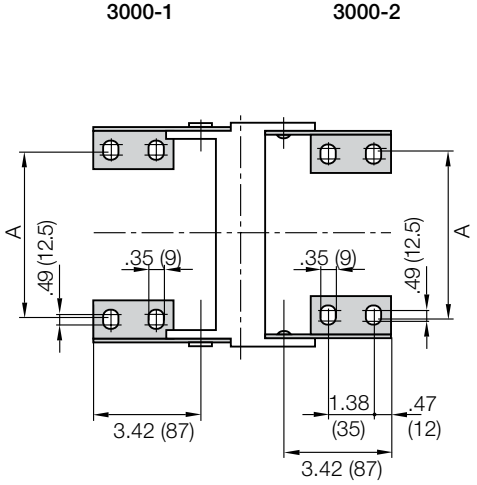
## Option 1: Steel

- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible



Possible installation configurations -




*pivoting with no stop, (360°)

| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 3450/3480-050 | **3000-12** | 1.10 | (28) | 3.39 | (86) |
| 3450/3480-075 | **3000-12** | 2.09 | (53) | 4.37 | (111) |
| 3450/3480-100 | **3000-12** | 3.07 | (78) | 5.35 | (136) |
| 3450/3480-115 | **3000-12** | 3.66 | (93) | 5.94 | (151) |
| 3450/3480-125 | **3000-12** | 4.06 | (103) | 6.34 | (161) |
| 3450/3480-150 | **3000-12** | 5.04 | (128) | 7.32 | (186) |
| 3450/3480-175 | **3000-12** | 6.02 | (153) | 8.35 | (212) |
| 3450/3480-200 | **3000-12** | 7.01 | (178) | 9.29 | (236) |
| 3450/3480-225 | **3000-12** | 7.99 | (203) | 10.28 | (261) |
| 3450/3480-250 | **3000-12** | 8.98 | (228) | 11.26 | (286) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 3480:
**3000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 3480:
**3000-1**

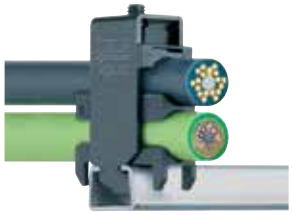
**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 3480:
**3000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2/000
# Series 3450/3480 E-Chain® Half-Tubes and Full Tubes
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

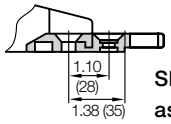
## Chainfix Clip

### Modular snap-on strain relief device

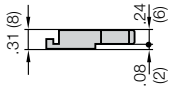
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

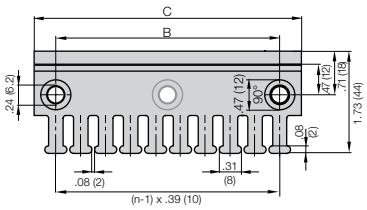



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

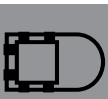
| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **30XX-Z and ZS** can be also used here. **Details chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E2 Medium
# Series 255 E-Chain®



## Price Index

Series 255

## Special Features / Options

IPA Qualification Certificate, Air Cleanliness Class ISO Class 3 (at v = 2 m/s) upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

UL94 V2 classifications upon request

## Assembly Tips

Insert screwdriver into the slot, using a lever action apply pressure to the screw-driver to release

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If quieter operation at very high speeds is required
- If intergrated strain relief at the mounting point is required
- If modular interior separation is needed
- If easy installation is required

- If each link requires snap-open accessibility on both sides
  ➤ **Series E4-21 E4-1**
- If maximum stability is required
  ➤ **Series E4-21 E4-1**
- If the application is very simple and easy filling is required
  ➤ **Series E300 E-Z Chain**

## Features & Benefits

1. Tried-and-tested mounting bracket
2. Snap-open crossbar for easy opening from the left or right
3. Series 255 snap-open on both sides along outer radius
4. Integrated strain relief possible
5. Modular interior separation
6. Easy assembly by optimized pin
7. Double stop dog for long unsupported length
8. Crossbars with high retention force
9. Also available as ESD version

## Order Example: Complete E-Chain®

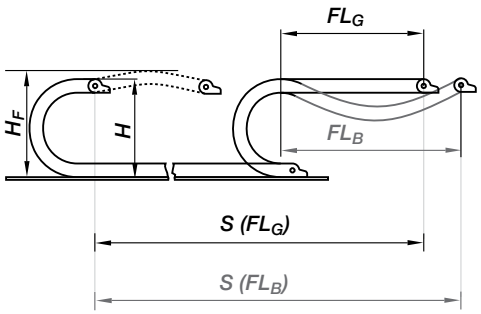
Please indicate chain length or number of links. Example:

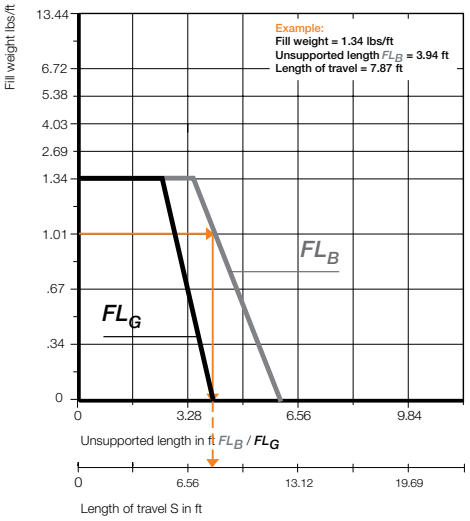
| | |
|---|---|
| 3.28 ft (1 m) **255-10-200-0** | **E-Chain®** |
| With 2 separators **2552** assembled every 2nd link | **Interior Separation** |
| 1 Set **2100-34PZ1B** with tiewrap plate | **Mounting Bracket** |

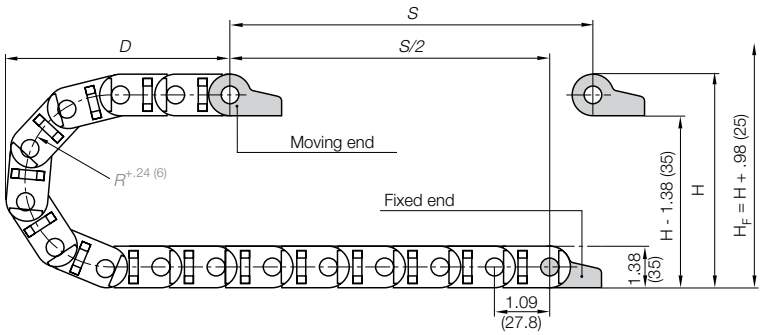
# E-Chain System® E2 Medium Series 255 E-Chain® Installation Dimensions

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.09" (27.8 mm)
**Links per ft (m): =** 11 (36)
**For center mount applications:**
**Chain length =** $S/2 + K$

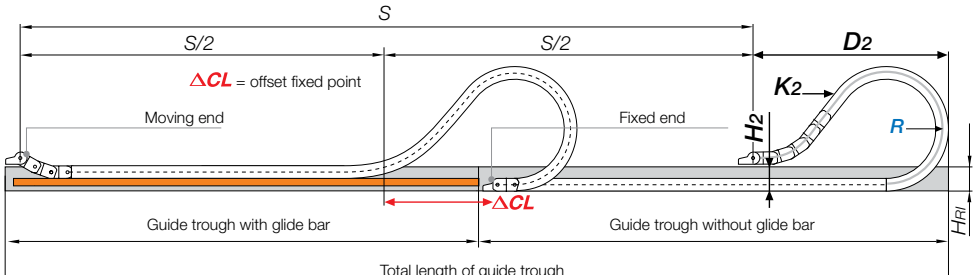
The required clearance height: ***HF = H + .98 in. (25 mm)*** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| $H^{+4}_{0}$ | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 4.48 (114) | 5.28 (134) | 6.26 (159) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) |
| K | 9.06 (230) | 11.61 (295) | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 26.97 (685) | 30.12 (765) | 33.27 (845) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




**In the case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 4.33 (110) | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_{2^{+25}}$ | 4.49 (114) | 5.28 (134) | 14.96 (380) | 19.49 (495) | 22.44 (570) | 26.18 (665) | 29.13 (740) | 40.94 (1040) | 44.49 (1130) |
| $K_2$ | 9.06 (230) | 11.61 (295) | 24.09 (612) | 31.73 (806) | 37.20 (945) | 43.78 (1112) | 48.15 (1223) | 63.39 (1610) | 70.04 (1779) |
| ΔCL | – | – | 8.74 (222) | 12.68 (322) | 14.65 (372) | 17.20 (437) | 19.57 (497) | – | 32.36 (822) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain® must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties
➤ **Chapter 1**

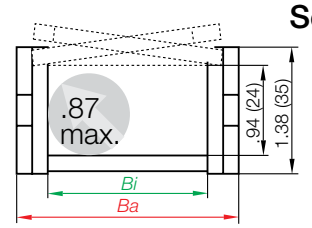


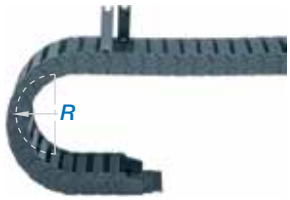
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 255 E-Chain®

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

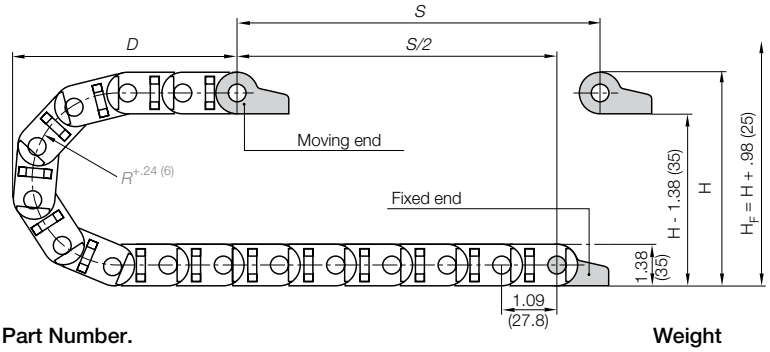
## Series 255 - snap-open along the outer radius



**Part Number Structure**

| 255- | 03- | 200- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

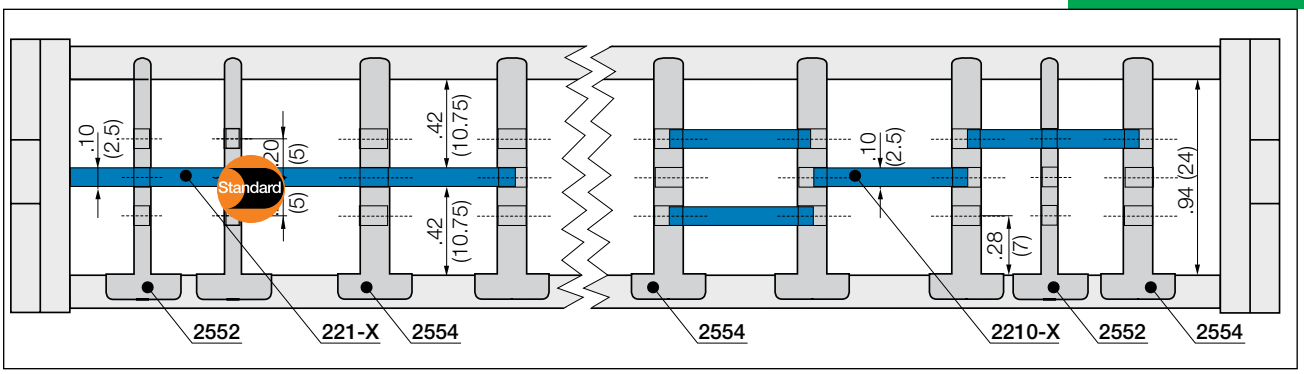



**Supplement part number with required radius.**
**Example: 255-03-200-0**
**Pitch: 1.09 in. (27.8 mm) per link**
**links/ft(m) = 11 (36)**

| Part Number. Snap-ope inner radius | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| 255-03-□-0 | 1.97 (38) | 2.76 (54) | ≈ 0.54 (0.81) |
| 255-05-□-0 | 2.95 (57) | 3.74 (73) | ≈ 0.60 (0.90) |
| 255-07-□-0 | 3.94 (77) | 4.72 (93) | ≈ 0.68 (1.01) |
| 255-10-□-0 | 4.53 (103) | 5.31 (119) | ≈ 0.77 (1.15) |

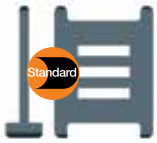
**Choose from the radii below for all of the above sizes**
***Radius* (mm)** **Example: 255-03-200-0**

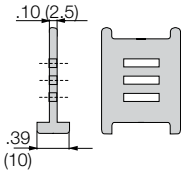
| 055 | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|
| 2.17 (055) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| 4.48 (114) | 5.28 (134) | 6.26 (159) | 7.24 (184) | 8.23 (209) | 9.21 (234) | 10.20 (259) | 11.18 (284) | 12.17 (309) |
| 9.06 (230) | 11.61 (295) | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 26.97 (685) | 30.12 (765) | 33.27 (845) |




**In the standard configuration separators are assembled every 2nd E-Chain® link**

## Separators

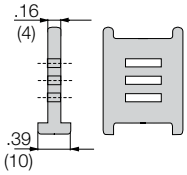



**Slotted Separator for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 2551** |
| Assembled | **Part No. 2552** |

- **Standard slotted separator 2551**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

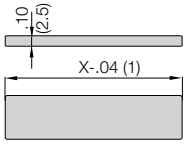



**Slotted separator for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 2553** |
| Assembled | **Part No. 2554** |

- **Slotted Separator 2553**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves



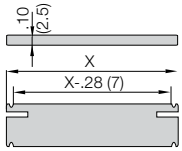

**Full-width shelf for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

- **Full-width shelf 220-X**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.50 (038) | **2200-38** | **2210-38** | 3.03 (077) | **2200-73** | **2210-73** |
| 2.24 (057) | **2200-58** | **2210-58** | 4.06 (103) | **2200-88** | **2210-88** |

## Shelves




**Shelf for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Shelf 2200-X**
  is used when vertical and horizontal separation is required.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.71 (018) | **2200-18** | **2210-18** | 1.69 (043) | **2200-43** | **2210-43** | 3.46 (088) | **2200-88** | **2210-88** |
| 0.91 (023) | **2200-23** | **2210-23** | 1.89 (048) | **2200-48** | **2210-48** | 3.90 (099) | **2200-99** | **2210-99** |
| 1.10 (028) | **2200-28** | **2210-28** | 2.28 (058) | **2200-58** | **2210-58** | | | |
| 1.30 (033) | **2200-33** | **2210-33** | 2.68 (068) | **2200-68** | **2210-68** | | | |
| 1.50 (038) | **2200-38** | **2210-38** | 2.87 (073) | **2200-73** | **2210-73** | | | |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 255 E-Chain®
# Mounting Bracket - Plastic



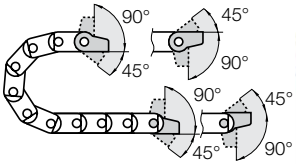
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For unsupported and gliding applications
- Well suited for tight installation conditions
- Detachable strain relief tiewrap plates
- Can be mounted on the fixed and/or moving end

**Moving end**
**3...3PZB**

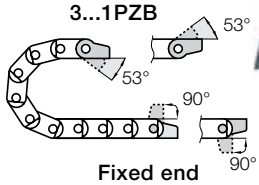


**Fixed end**
**3...4PZB**

## Option 2: locking

- For vertical hanging and standing applications
- Extreme speed and/or accelerations
- For height restricted applications
- Can be mounted on the fixed and/or moving end

**Moving end**
**3...1PZB**

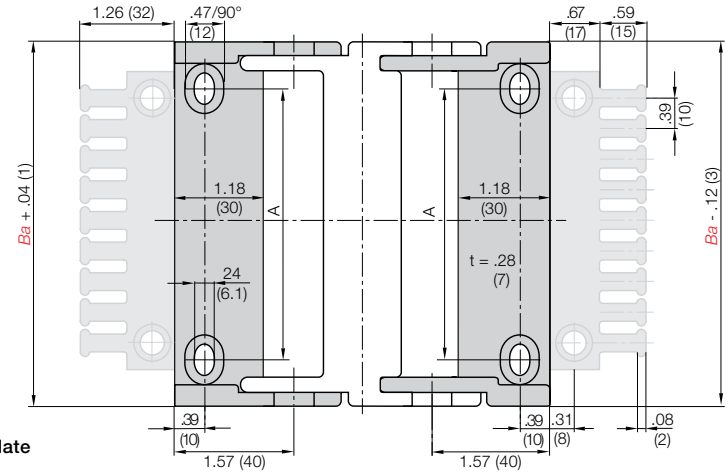


**Fixed end**
**3...2PZB**

### Part Number Structure

2030- | 34 | PZB | K1

- 34 = With 10 cable tiewraps
- PZB = With tiewrap plates
- K1 = Complete Set
  **34 = Pivoting**
  **12 = Locking**
- 2030- = Mounting brackets for selected chain type




**Full set, for both ends:**

2030- | 34 | PZB — Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

2030- | 3 | PZB — Mounting bracket **with bore + tiewrap plate**

2030- | 4 | PZB — Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 255:**
**2030-34PZ1**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 255:**
**2030-34PZ1B**

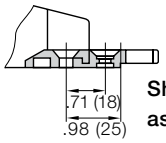
**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 255:**
**2030-34PZ1BK1**

| For Chain Type | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Dimension A in. | (mm) | Number of Teeth |
|---|---|---|---|---|---|---|
| 255-03 | 2030-[ ]PZ1 | 2030-[ ]PZ1B | 2030-[ ]PZ1BK1 | .98 | (25) | 4 |
| 255-05 | 2030-[ ]PZ1 | 2030-[ ]PZ1B | 2030-[ ]PZ1BK1 | 1.73 | (44) | 6 |
| 255-07 | 2030-[ ]PZ1 | 2030-[ ]PZ1B | 2030-[ ]PZ1BK1 | 2.52 | (64) | 8 |
| 255-10 | 2030-[ ]PZ1 | 2030-[ ]PZ1B | 2030-[ ]PZ1BK1 | 3.54 | (90) | 10 |

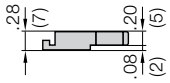
[34] or [12]

For pivoting brackets choose [34]
For locking brackets choose [12]
Example: 2030-[34]PZ1B

## Tiewrap Plates




Shown assembled



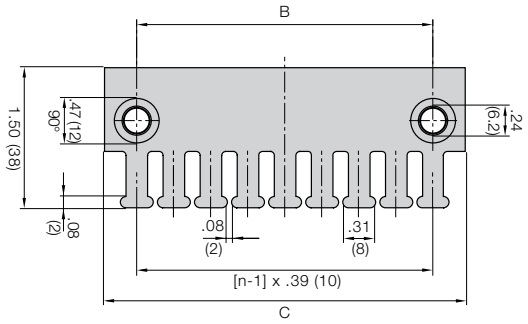

Single tiewrap plate

**Option 1:**

### Tiewrap plates as an individual part

Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

### Series 2000




| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B | |
|---|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) | |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) | |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) | |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) | |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) | |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) | = 2030-ZB + 2040-ZB combined |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) | =2050-ZB x 2 pieces combined |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) | |

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 255 E-Chain®
# Guide Troughs



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 92-30**
- 1/2 travel length of glide bars
  **Part Number 92-01**
- Installation sets as end connectors
  **Part Number 92-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

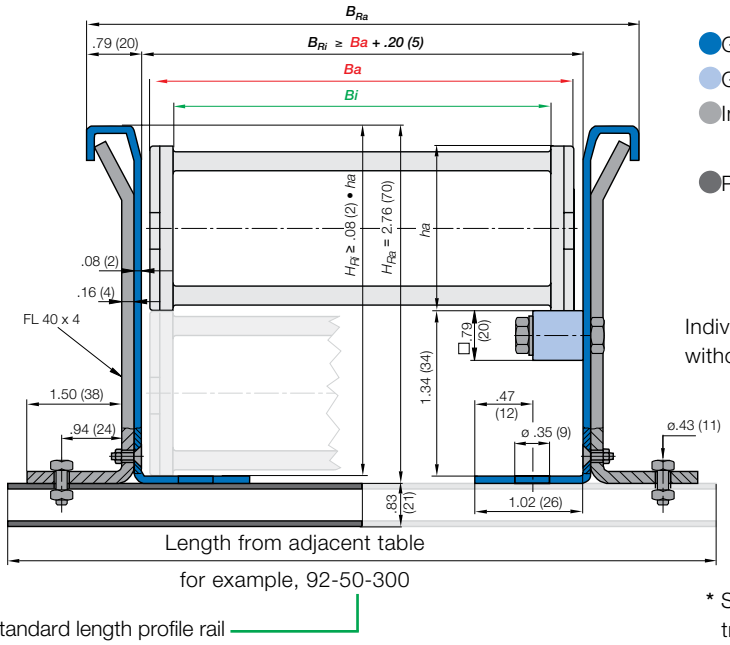
**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 92-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
255-**03**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-03** | 2.32 (59) | **92-50-175** |
| **-05** | 3.07 (78) | **92-50-200** |
| **-07** | 3.86 (98) | **92-50-225** |
| **-10** | 4.88 (124) | **92-50-250** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

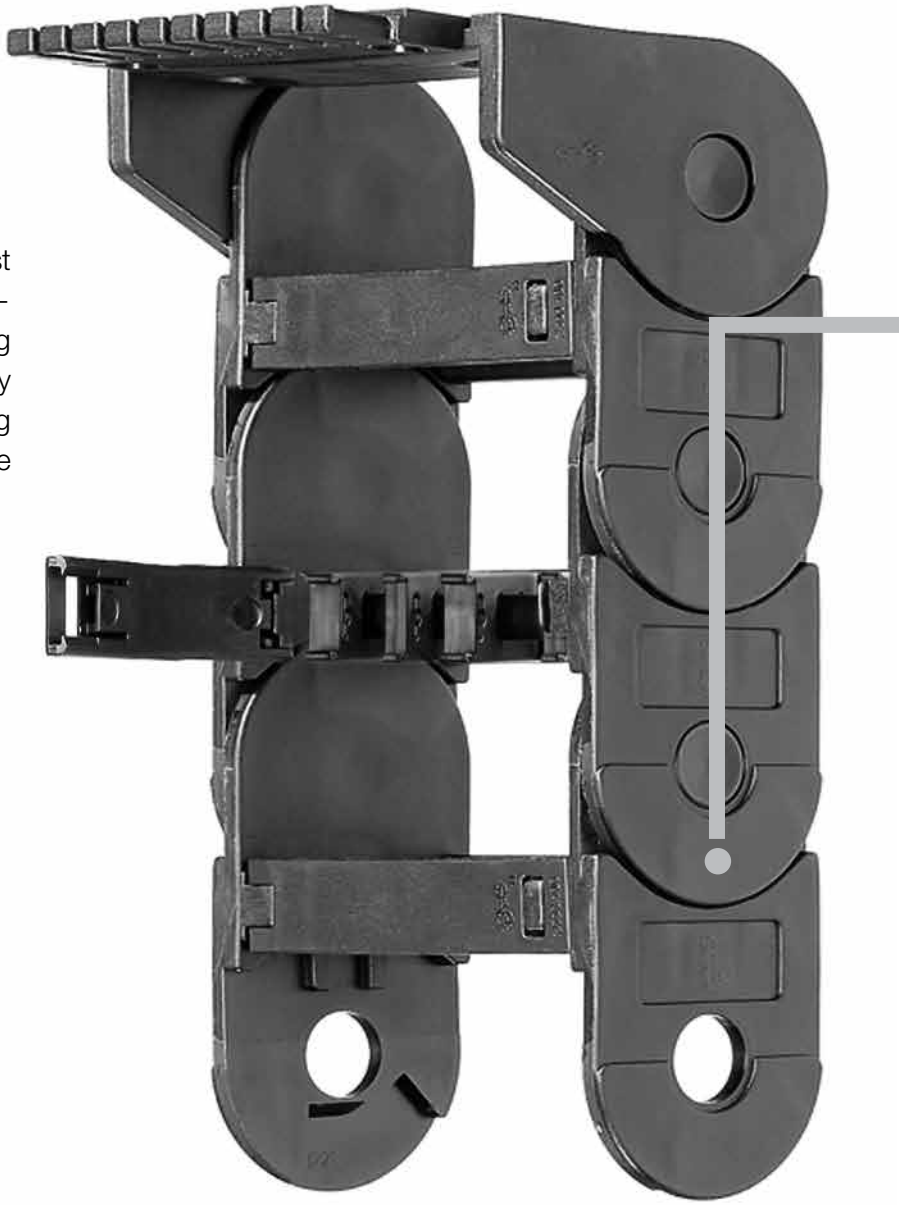
* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

# E2 Medium

# E2 Medium - E-Chains® with 2-part link design for a wide range of applications

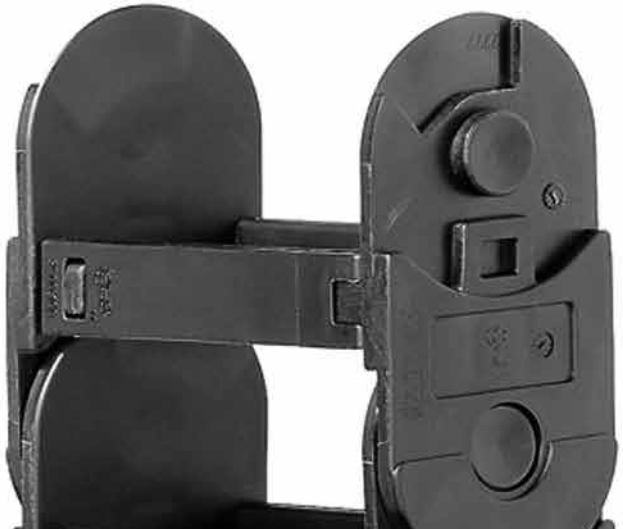


**E2 Medium - the standard**

The E2 Medium Series is the largest of the E2 family of E-Chains® — features snap-open crossbars along the entire length of the carrier for easy cable access. It is suitable for gliding applications and delivers a long service life.

**Typical industries and applications**

- Material handling
- Construction machinery
- Woodworking machines
- Glass machines
- Plastic machines
- Long travel applications in many industries
- Semiconductor
- Theatrical and entertainment and amusement parks
- Vehicles
- General machinery
- And many more



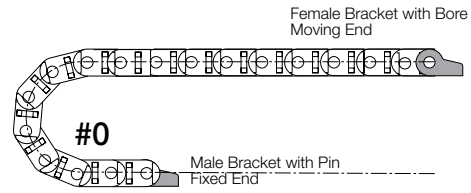
Series 350 E-Chain®, steel guide trough and Chainflex cables used in a shelf conveyor application

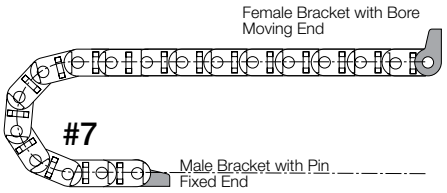
## Selection Guide

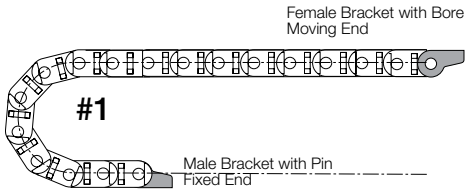
### E2 Medium

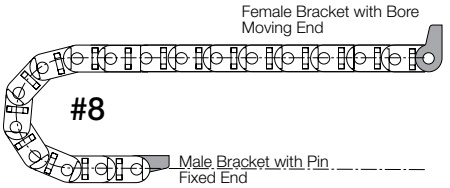
| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **200** | .98 | (25) | .98-4.92 | (25-125) | 1.61-5.55 | (41-141) | 1.38 | (35) | 2.16-9.84 | (55-250) |
| **240** | .98 | (25) | .98-4.92 | (25-125) | 1.61-5.55 | (41-141) | 1.38 | (35) | 2.16-9.84 | (55-250) |
| **250** | .98 | (25) | .98-4.92 | (25-125) | 1.61-5.55 | (41-141) | 1.38 | (35) | 2.16-9.84 | (55-250) |
| **26** | 1.38 | (35) | 1.97-7.87 | (50-200) | 2.60-8.62 | (66-219) | 1.97 | (50) | 2.48-9.84 | (63-250) |
| **27** | 1.38 | (35) | 1.97-7.87 | (50-200) | 2.60-8.62 | (66-219) | 1.97 | (50) | 2.48-9.84 | (63-250) |
| **27i** | 1.38 | (35) | 1.97-7.87 | (50-200) | 2.60-8.62 | (66-219) | 1.97 | (50) | 2.48-9.84 | (63-250) |
| **340** | 1.77 | (45) | 1.97-9.84 | (50-250) | 2.76-10.63 | (70-270) | 2.64 | (67) | 2.95-11.81 | (75-300) |
| **350** | 1.77 | (45) | 1.97-9.84 | (50-250) | 2.76-10.63 | (70-270) | 2.64 | (67) | 2.95-11.81 | (75-300) |

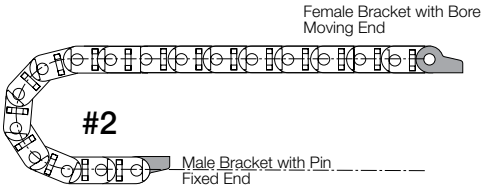
# E-Chain System® E2 Medium
# Bracket Configurations

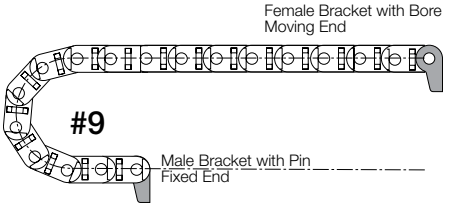


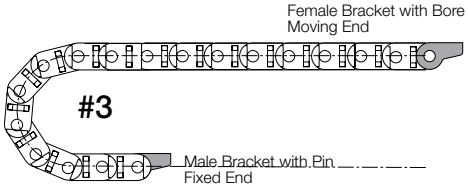



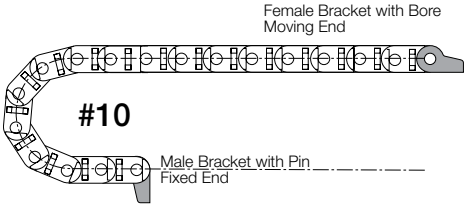



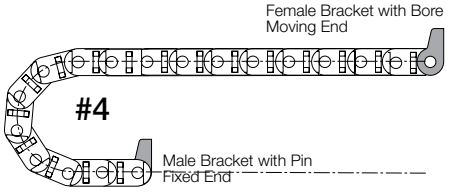



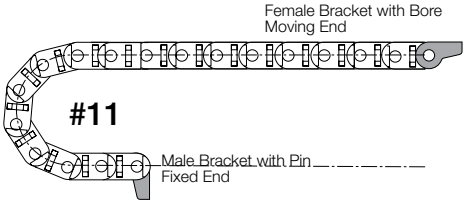



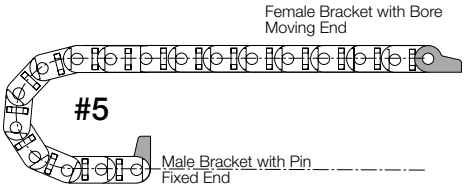



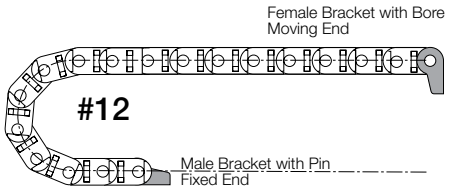



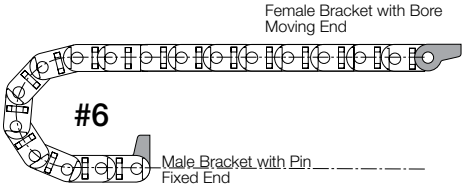



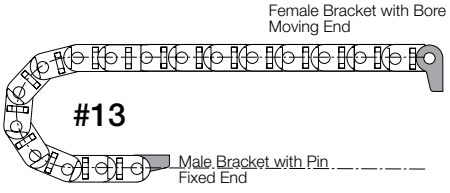



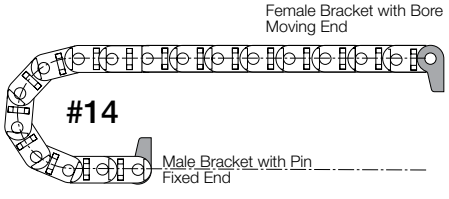



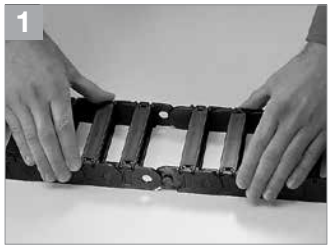




- **Not all configurations apply to all mounting brackets.**

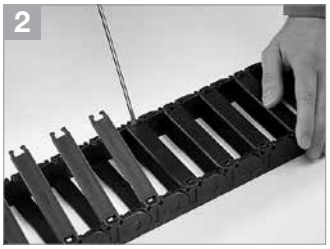
**Please refer to bracket specifications pages of each individual series.**

# E-Chain System® E2 Medium
# Assembly Instructions

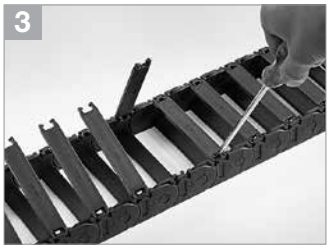
## E-Chains® - Assembling Series 200/240/250




Joining chain sections: push sections together; angle one side until pin snaps into bore; repeat on other side



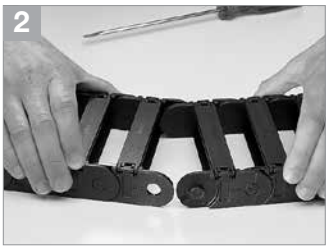

To open crossbars: press screwdriver into tab on top of link, lever screwdriver until crossbar opens




Repeat Step 1 on other side

To close crossbars: push down on crossbar with thumb until it snaps into place

## E-Chains® - Separating




Separating chain sections: insert screwdriver between two links. Twist until pin disengages from bore; pull sections apart

## E-Chains® - Attaching Mounting Bracket

Attaching mounting brackets: snap bracket into link (see Step 4 - “Joining chain sections”)

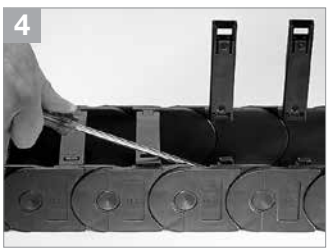
Snap tiewrap plate into bottom groove of the mounting bracket

## E-Chains® - Assembling Series 26/27/27i and Series 340/350

4. Joining chain sections: push sections together; angle one side until pin snaps into bore; repeat on other side

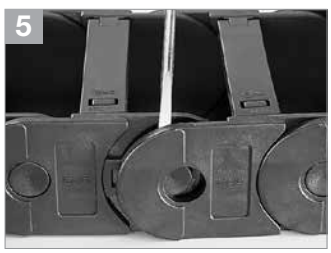
2. Repeat Step 1 on other side

2. Repeat Step 1 on other side




3. To close crossbars: push down on crossbar with thumb until it snaps into place

## Assembling continued




5. Separating chain sections: insert screwdriver between two links

6. Twist until pin disengages from bore; pull sections apart

## E-Chains® and E-Tubes - Separating

7. Attaching mounting brackets: snap bracket into link (see Step 4 - “Joining chain sections”)

8. Snap tiewrap plate into bottom groove of the mounting bracket

# E-Chain System® E2 Medium
# Series 200/240/250

.98 .98 .98

## Features & Benefits

1. Dirt-repellent contoured exterior
2. Cable-friendly, smooth interior with modular interior separation
3. Lateral glide surfaces for side mounted operation
4. Large pins for long service life
5. Double stop dog for long unsupported length
6. Tapered insertion point for easy assembly
7. Intergrated strain relief possible
8. Snap-open, hinged to left or right, accessible from the top
9. Series 240 snap-open along the inner radius can be combined with Series 250 snap-open along the outer radius

### Price Index

Series 200/240/250

### Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

### Assembly Tips

Easy to assemble and disassemble

### Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

### Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required (Series 200 does not open)
- If intergrated strain relief at the mounting point is required
- If modular interior separation is required
- If long service life is required
- If easy installation is required

- If each link requires snap-open accessibility on both sides simultaneously
  ➤ **Series 220 E4/100**
- If chip protection is required
  ➤ **Series R48 E2 Tubes**
- If the application is very simple
  ➤ **Series E200 E-Z Chain**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **250-10-100-0** | **E-Chain®** |
| With 2 separators **211** assembled every 2nd link | **Interior Separation** |
| 1 Set **2100-34PZB** | **Mounting Bracket** |

# E-Chain System® E2 Medium
# Series 200/240/250
# Installation Dimensions

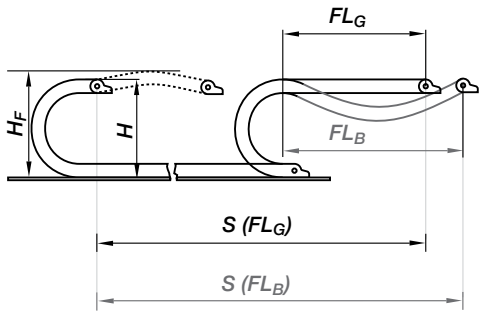


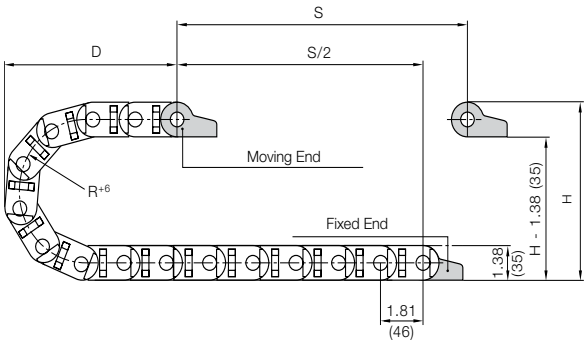
## Short travel, unsupported length

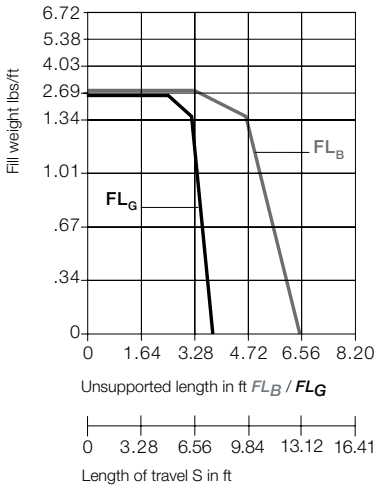
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.63 (22)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ .98 in. (25 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (55) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H +4 | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) |
| K | 10.87 (276) | 13.62 (346) | 16.30 (414) | 19.53 (496) | 22.76 (578) | 25.98 (660) | 29.21 (742) | 32.05 (814) | 36.22 (920) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

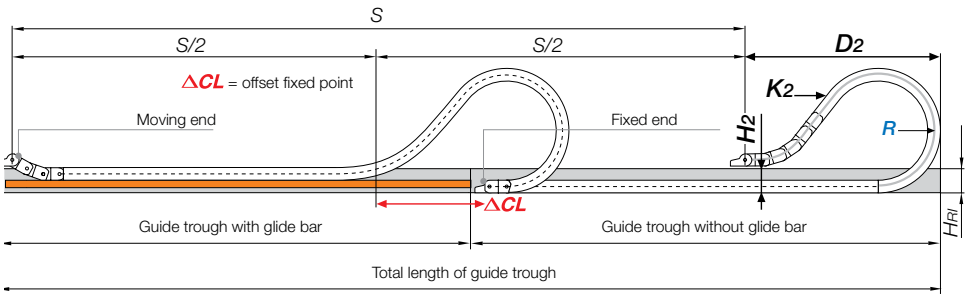
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)**

**For center mount applications:**
**Chain length:** = $\frac{S}{2} + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 2.17 (55) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$+4 | – | – | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$+25 | – | – | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_2$ | – | – | 25.35 (644) | 28.98 (736) | 39.84 (1012) | 48.90 (1242) | 57.95 (1472) | 63.39 (1610) | 70.63 (1794) |
| ΔCL | – | – | 8.03 (204) | 9.61 (244) | 14.33 (364) | 19.84 (504) | 26.54 (674) | 29.69 (754) | 31.65 (804) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

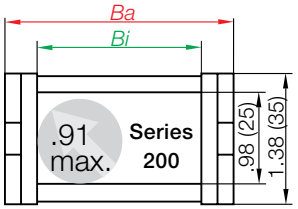
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 200/240/250

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 200 - Non snap-open

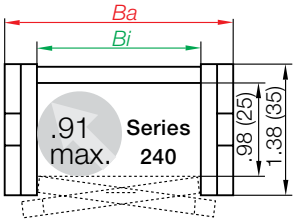


Part Number Structure

200- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

## Series 240 - Snap-open along the inner radius

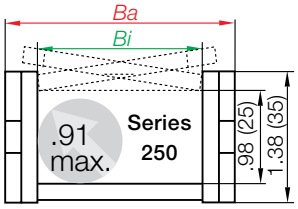


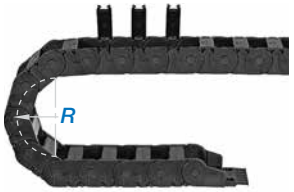
Part Number Structure

240- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

## Series 250 - Snap open along the outer radius



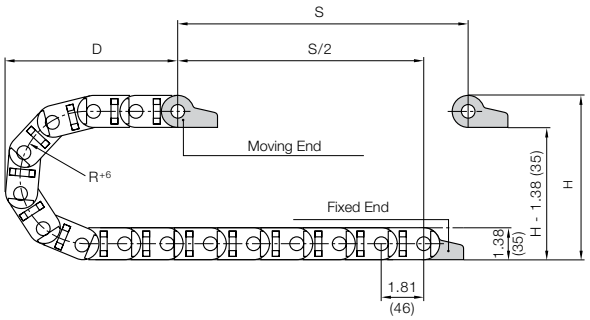




Part Number Structure

250- 10- 100- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: 250-10-[100]-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)




| Part Number Non Snap-open | Snap-open Inner Radius | Snap-open Outer Radius | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|
| 200-02 | 240-02 | 250-02 | [ ] | -0 | .98 (25) | 1.61 (41) | ≈ 0.50 (0.74) |
| 200-03- | 240-03 | 250-03 | [ ] | -0 | 1.50 (38) | 2.13 (54) | ≈ 0.54 (0.81) |
| 200-05- | 240-05 | 250-05 | [ ] | -0 | 2.24 (57) | 2.87 (73) | ≈ 0.60 (0.90) |
| 200-07- | 240-07 | 250-07 | [ ] | -0 | 3.03 (77) | 3.66 (93) | ≈ 0.68 (1.01) |
| 200-09- | 240-09 | 250-09 | [ ] | -0 | 3.54 (90) | 4.17 (106) | ≈ 0.73 (1.08) |
| 200-10 | 240-10 | 250-10 | [ ] | -0 | 4.06 (103) | 4.69 (119) | ≈ 0.77 (1.15) |
| 200-12 | 240-12 | 250-12 | [ ] | -0 | 4.92 (125) | 5.55 (141) | ≈ 0.82 (1.22) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 250-10-[100]-0

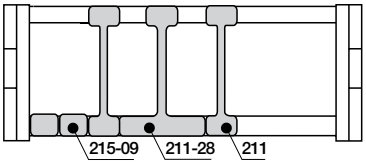
| | 55 | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| R | 2.17 (55) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| $H_{+4}$ | 5.71 (145) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) |
| D | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) |
| K | 10.87 (276) | 13.62 (346) | 16.30 (414) | 19.53 (496) | 22.76 (578) | 25.98 (660) | 29.21 (742) | 32.05 (814) | 36.22 (920) |

0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Medium
# Series 200/240/250
# Interior Separation

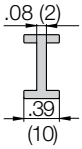
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. These separators are the only option when compartmentalizing the interior of the non snap-open E-Chain® such as the Series 200. Both are predominantly used for side-mounted applications.




STANDARD

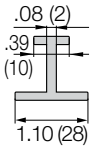
**Vertical separator 201**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 201** |
| Assembled | **Part No. 211** |

- **Standard separator 201 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

**Vertical separator 201-28**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 201-28** |
| Assembled | **Part No. 211-28** |

- **Standard separator 201-28 for E-Chains®**
  This separator features a wide base for use when a large distance between separators is required.

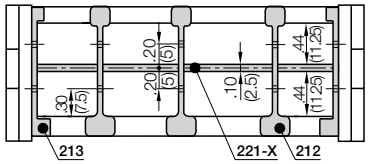
**Spacers 205-09**

| Spacer | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

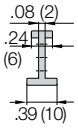
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

## Option 2: Full-width shelf

This option is available for the snap-open Series 240/250 chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



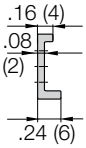

**Slotted vertical separator 202**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 202** |
| Assembled | **Part No. 212** |

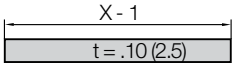
- **Slotted separator 202 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

**Side Plate 203**




| Side plate | |
|---|---|
| Unassembled | **Part No. 203** |
| Assembled | **Part No. 213** |

- **Side plate 203 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.




| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .98 | (25) | **220-25** | **221-25** |
| 1.50 | (38) | **220-38** | **221-38** |
| 2.24 | (57) | **220-57** | **221-57** |
| 3.03 | (77) | **220-77** | **221-77** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.54 | (90) | **220-90** | **221-90** |
| 4.06 | (103) | **220-103** | **221-103** |
| 4.92 | (125) | **220-125** | **221-125** |

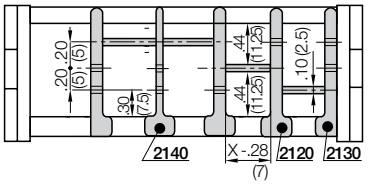
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 200/240/250
# Interior Separation

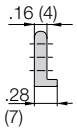
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 3: Shelves

This option is available for the Series 240/250 snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.




**Side plate 2030**

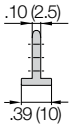



**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 2030** |
| Assembled | **Part No. 2130** |

- **Side plate 2030 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

**Vertical separator 2040**

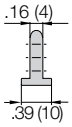



**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 2040** |
| Assembled | **Part No. 2140** |

- **Vertical slotted separator 2040 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

**Vertical separator 2020**




**Vertical Separator**

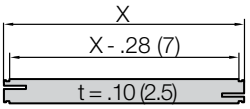
| | |
|---|---|
| Unassembled | **Part No. 2020** |
| Assembled | **Part No. 2120** |

- **Vertical slotted separator 2020 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |

**Shelves 2200-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .20" (5mm) increments



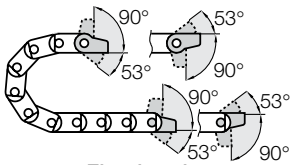
# E-Chain System® E2 Medium
# Series 200/240/250
# Mounting Brackets - Plastic

## Standard

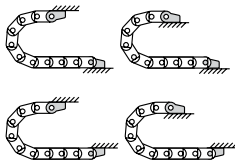
### Option 1: pivoting

- Short and long travels
- Space-restricted conditions
- Corrosion resistant

Moving end
2...3PZB



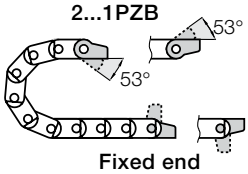

Fixed end
2...4PZB



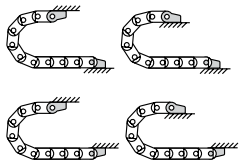
### Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

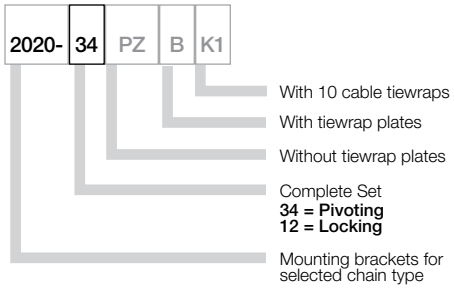
Moving end
2...1PZB

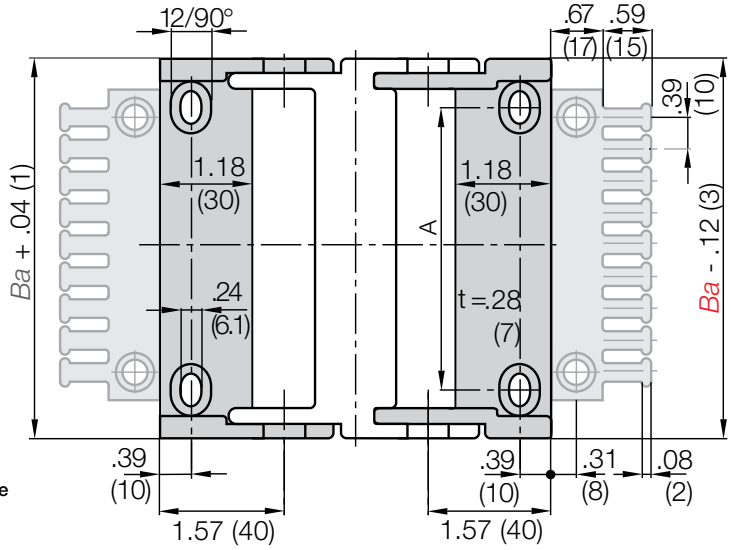



Fixed end
2...2PZB



### Part Number Structure




**Full set, for both ends:**
2020- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
2020- 3 PZB Mounting bracket **with bore + tiewrap plate**
2020- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 200, 240 or 250:**
**2020-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**+ 10 cable ties**
**Series 200, 240 or 250:**
**2020-34PZBK1**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 200, 240 or 250:**
**2020-34PZ**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) |
|---|---|---|---|---|---|
| 200/240/250-02 | 2020- ☐ PZB | 2020- ☐ PZBK1 | 2020- ☐ PZ | .47 | (12) |
| 200/240/250-03 | 2030- ☐ PZB | 2030- ☐ PZBK1 | 2030- ☐ PZ | .98 | (25) |
| 200/240/250-05 | 2050- ☐ PZB | 2050- ☐ PZBK1 | 2050- ☐ PZ | 1.73 | (44) |
| 200/240/250-07 | 2070- ☐ PZB | 2070- ☐ PZBK1 | 2070- ☐ PZ | 2.52 | (64) |
| 200/240/250-09 | 2090- ☐ PZB | 2090- ☐ PZBK1 | 2090- ☐ PZ | 3.03 | (77) |
| 200/240/250-10 | 2100- ☐ PZB | 2100- ☐ PZBK1 | 2100- ☐ PZ | 3.54 | (90) |
| 200/240/250-12 | 2125- ☐ PZB | 2125- ☐ PZBK1 | 2125- ☐ PZ | 4.41 | (112) |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2020- 34 PZB

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 200/240/250
# Mounting Brackets - KMA

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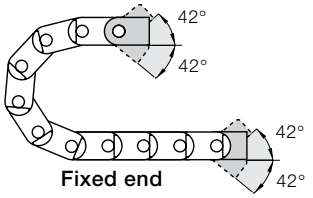
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

- Short travels
- Space-restricted conditions
- Corrosion resistant
- Bolted connection outside of chain cross section

Moving end
20000...1



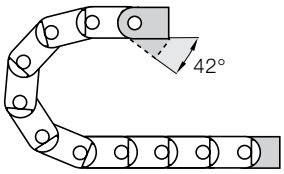

Fixed end
20000...2

- Stackable

## Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant
- Bolted connection outside of chain cross section

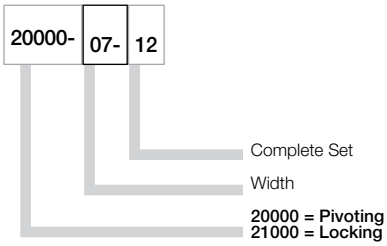
Moving end
21000...1

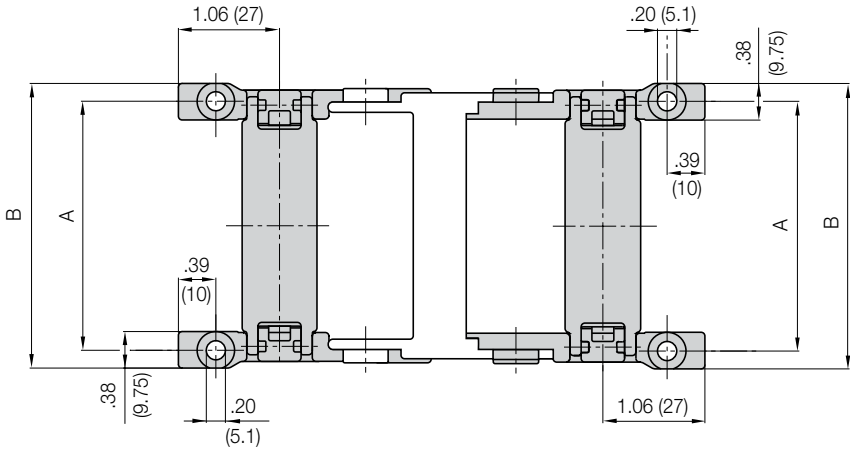



Fixed end
21000...2

- Stackable

### Part Number Structure




**Full set, for both ends:**

20000- 07- 12 Full set, **each part with pin/bore**

**Single-part order:**

20000- 07- 1 Mounting bracket **with bore**

20000- 07- 2 Mounting bracket **with pin**

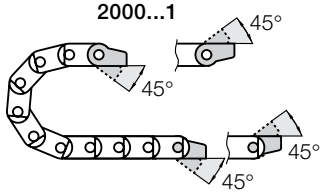
| Width | Part No. Full Set | | | Dimension A | | Dimension B | |
|---|---|---|---|---|---|---|---|
| | Pivoting | Locking | | in. | (mm) | in. | (mm) |
| -02 | 20000 | 21000 | -02-12 | 1.36 | (34.5) | 1.73 | (44) |
| -03 | 20000 | 21000 | -03-12 | 1.87 | (47.5) | 2.24 | (57) |
| -05 | 20000 | 21000 | -05-12 | 2.62 | (66.5) | 2.99 | (76) |
| -07 | 20000 | 21000 | -07-12 | 3.41 | (86.5) | 3.78 | (96) |
| -09 | 20000 | 21000 | -09-12 | 3.92 | (99.5) | 4.29 | (109) |
| -10 | 20000 | 21000 | -10-12 | 4.43 | (112.5) | 4.80 | (122) |
| -12 | 20000 | 21000 | -12-12 | 5.30 | (134.5) | 5.67 | (144) |

# E-Chain System® E2 Medium
# Series 200/240/250
# Mounting Brackets - Steel

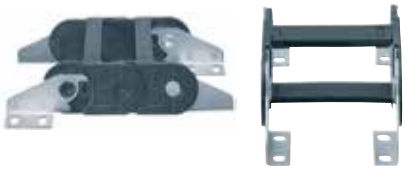
## Option 1: Steel

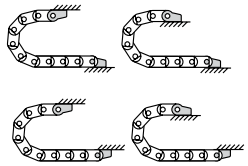
- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

**Moving end**
**2000...1**

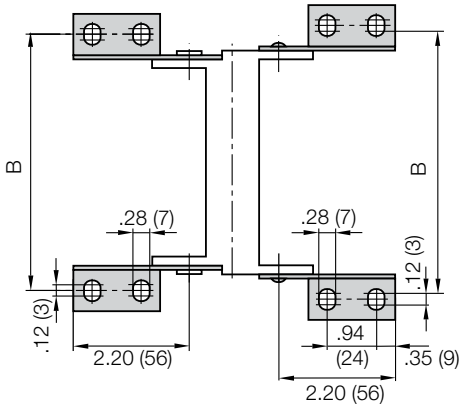


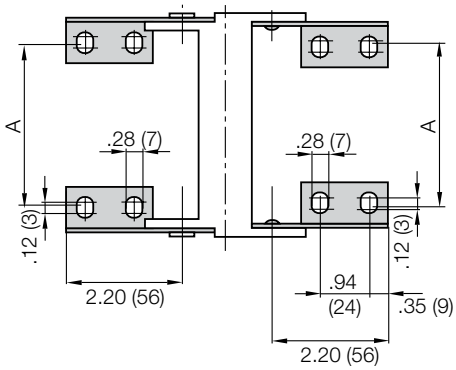

**Fixed end**
**2000...2**





Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 200/240/250-02 | **2000-12** | | – | 2.36 | (60) |
| 200/240/250-03 | **2000-12** | .98 | (25) | 2.87 | (73) |
| 200/240/250-05 | **2000-12** | 1.73 | (44) | 3.62 | (92) |
| 200/240/250-07 | **2000-12** | 2.52 | (64) | 4.41 | (112) |
| 200/240/250-09 | **2000-12** | 3.03 | (77) | 4.92 | (125) |
| 200/240/250-10 | **2000-12** | 3.54 | (90) | 5.43 | (138) |
| 200/240/250-12 | **2000-12** | 4.41 | (112) | 6.30 | (160) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 200/240/250:
**2000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 200/240/250:
**2000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 200/240/250:
**2000-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

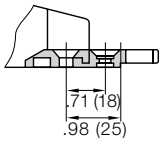
# E-Chain System® E2 Medium
# Series 200/240/250
# Strain Relief



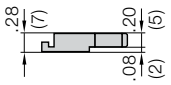
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

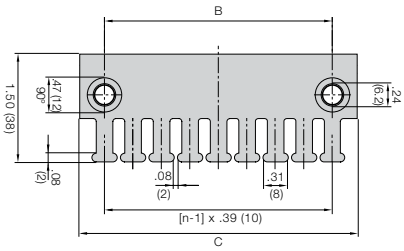



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Strain relief for steel mounting brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiewrap plates must be bolted directly into separate bore holes in front of the mounting bracket. Alternatively the tiewrap plates **20XX-ZB** can be also used here. **Details chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

# E-Chain System® E2 Medium
# Series 200/240/250
# Guide Trough



Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 92-30**
- 1/2 travel length of glide bars
  **Part Number 92-01**
- Installation sets as end connectors
  **Part Number 92-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

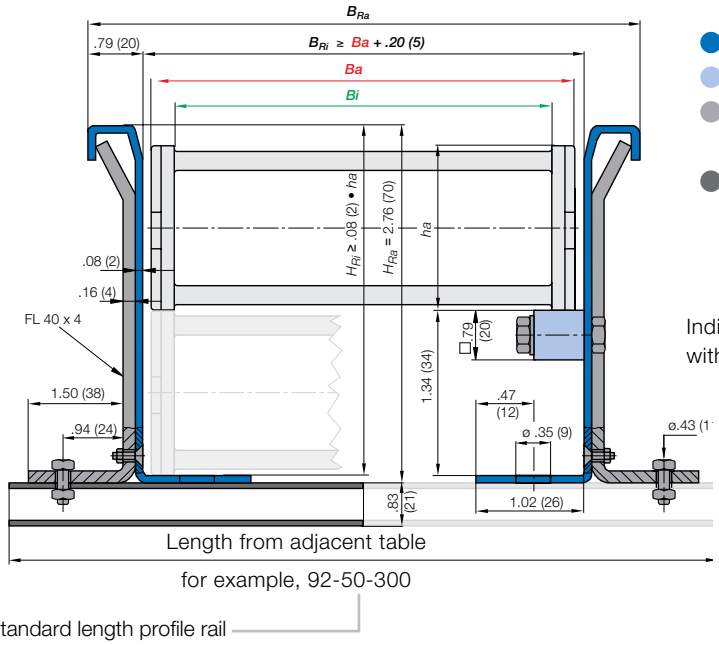
**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 92-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets

Example: 92-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
250-**05**-200-0
$B_{Ri}$

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-02*** | 1.81 (46) | **92-50-150** |
| **-03** | 2.32 (59) | **92-50-175** |
| **-05** | 3.07 (78) | **92-50-175** |
| **-07** | 3.86 (98) | **92-50-200** |
| **-09** | 4.37 (111) | **92-50-250** |
| **-10** | 4.88 (124) | **92-50-250** |
| **-12** | 5.75 (146) | **92-50-300** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 26/27/27i

1.38 1.38 1.38

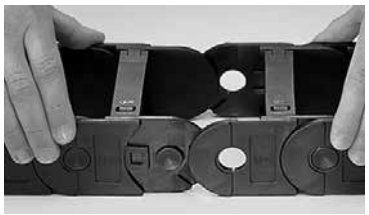
## Price Index

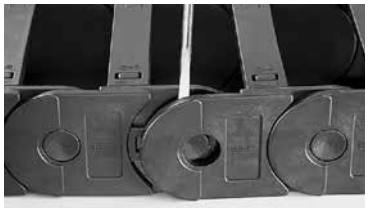
Series 26/27/27i

## Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips





Easy to assemble and disassemble

## Other Installation Methods

- Vertical, hanging ≤ 164 ft (50 m)
- Vertical, standing ≤ 9.84 ft (3 m)
- Side-mounted, unsupp. ≤ 3.28 ft (1 m)
- Rotary requires further calculation

## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required (Series 200 does not open)
- If stable chain of moderate size is required
- If loads are moderate
- If Intergrated strain relief at the connection point is required
- If easy installation is required

- If maximum stability is required
  ➤ **Series 280, E4/100**
- If chip protection is required
  ➤ **Series R58, E2 Tubes**
- If the application is very simple
  ➤ **Series E26, E-Z Chain**

## Features & Benefits

1. Large pins for long service life
2. Double stop dog for long unsupported length
3. Modular interior separation
4. Space-saving ratio of inner-to-outer dimensions
5. Lateral glide surfaces for side-mounted operation
6. Side wear pads
7. Intergrated strain relief possible
8. Cable-friendly smooth interior
9. Series 27i snap-open along inner radius can be combined with Series 27 snap-open along the outer radius

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **27-10-100-0** | **E-Chain®** |
| With 2 separators **261** assembled every 2nd link | **Interior Separation** |
| 1 Set **2610-34PZB** | **Mounting Bracket** |

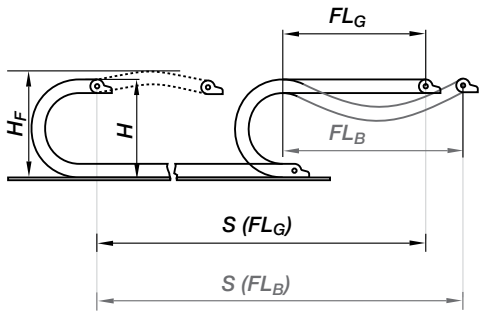
# E-Chain System® E2 Medium Series 26/27/27i Installation Dimensions

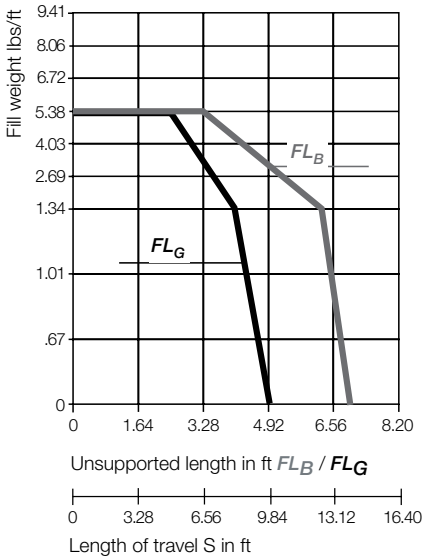


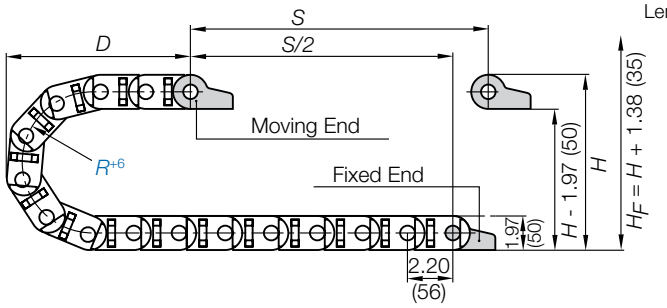
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.45 (18)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F = H$ + **1.38 in. (35 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H +4 | 7.09 (180) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 5.51 (140) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 12.80 (325) |
| K | 13.19 (335) | 14.76 (375) | 18.70 (475) | 21.65 (550) | 25.59 (650) | 29.53 (750) | 32.48 (825) | 36.42 (925) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

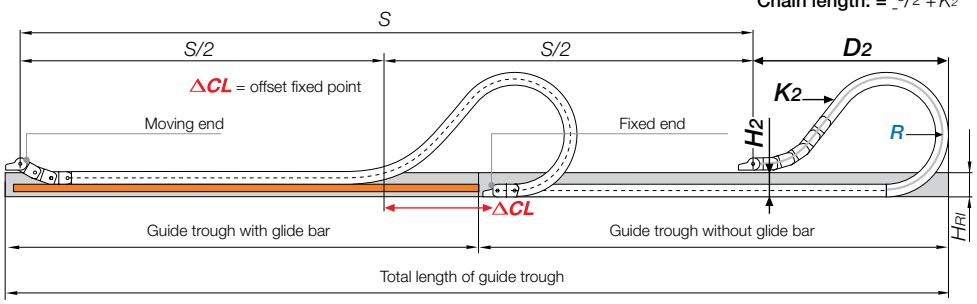
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K = π • R + safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Over length - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 394 ft. (120 m)**

**For center mount applications:**
**Chain length:** = $^{S}/_{2} + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| $H_{2+4}$ | – | – | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ | – | – | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) |
| $K_2$ | – | – | 24.25 (616) | 30.87 (784) | 35.28 (896) | 44.09 (1120) | 50.71 (1288) | 63.94 (1624) |
| ΔCL | – | – | 5.67 (144) | 9.61 (244) | 9.61 (244) | 14.72 (374) | 18.27 (464) | 23.39 (594) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

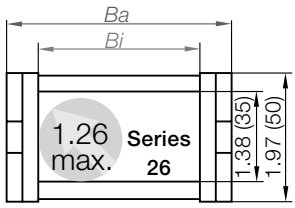
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

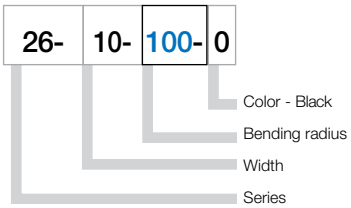
# E-Chain System® E2 Medium
# Series 26/27/27i

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

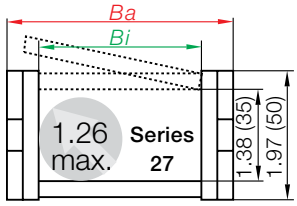
## Series 26 - Non snap-open

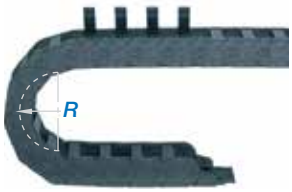


Part Number Structure

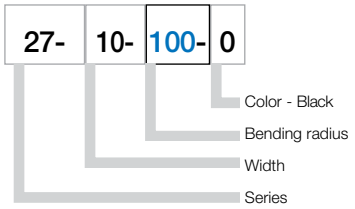



## Series 27 - Snap-open along the outer radius

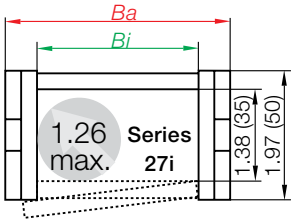


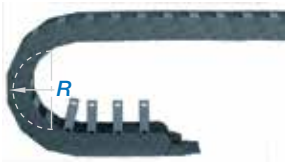




Part Number Structure

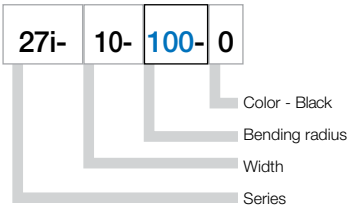



## Series 27i - Snap open along the inner radius

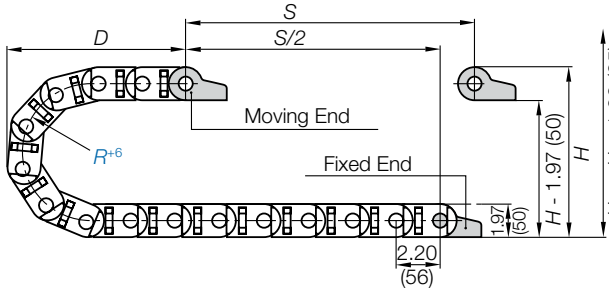



Part Number Structure




Supplement part number with required radius. Example: 26-10-100-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)




| Part Number | | | | Bi | Ba | Weight |
|---|---|---|---|---|---|---|
| Non Snap-open | Snap-open Outer Radius | Snap-open Inner Radius | | in. (mm) | in. (mm) | lbs/ft (kg/m) |
| 26-05- | 27-05- | 27i-05- | [ ] -0 | 1.97 (50) | 2.60 (66) | ≈ 0.79 (1.17) |
| 26-07- | 27-07- | 27i-07- | [ ] -0 | 2.95 (75) | 3.58 (91) | ≈ 0.87 (1.30) |
| 26-10- | 27-10- | 27i-10- | [ ] -0 | 3.94 (100) | 4.57 (116) | ≈ 0.93 (1.39) |
| 26-12- | 27-12- | 27i-12- | [ ] -0 | 4.92 (125) | 5.55 (141) | ≈ 0.99 (1.48) |
| 26-15- | 27-15- | 27i-15- | [ ] -0 | 5.91 (150) | 6.54 (166) | ≈ 1.09 (1.62) |
| 26-17- | 27-17- | 27i-17- | [ ] -0 | 6.89 (175) | 7.64 (194) | ≈ 1.24 (1.85) |
| 26-20- | 27-20- | 27i-20- | [ ] -0 | 7.87 (200) | 8.62 (219) | ≈ 1.32 (1.96) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 26-10-100-0

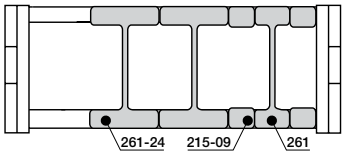
| | 063 | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| $H_{+4}$ | 7.09 (180) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 5.51 (140) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 12.80 (325) |
| K | 13.19 (335) | 14.76 (375) | 18.70 (475) | 21.65 (550) | 25.59 (650) | 29.53 (750) | 32.48 (825) | 36.42 (925) |

0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Medium
# Series 26/27/27i
# Interior Separation

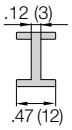
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. These separators are the only option when compartmentalizing the interior of the non snap-open E-Chain® such as the Series 26. Both are predominantly used for side-mounted applications.




STANDARD

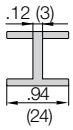
**Vertical separator 261**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 260** |
| Assembled | **Part No. 261** |

- **Standard separator 260 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

**Vertical separator 260-24**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 260-24** |
| Assembled | **Part No. 261-24** |

- **Standard separator 260-24 for E-Chains®**
  This separator features a wide base for use when a large distance between separators is required. These are also used in the case of side mounted applications

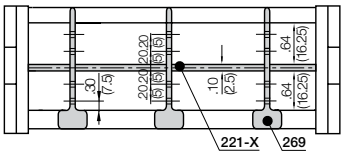
**Spacers 205-09**

| Spacer | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

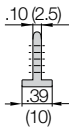
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

## Option 2: Full-width shelf

This option is available for the snap-open Series 27/27i chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.

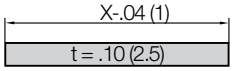



**Slotted vertical separator 268**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 268** |
| Assembled | **Part No. 269** |

- **Slotted separator 268 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.




| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **220-50** | **221-50** |
| 2.95 | (75) | **220-75** | **221-75** |
| 3.94 | (100) | **220-100** | **221-100** |
| 4.92 | (125) | **220-125** | **221-125** |
| 5.91 | (150) | **220-150** | **221-150** |
| 6.89 | (175) | **220-175** | **221-175** |
| 7.87 | (200) | **220-200** | **221-200** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 26/27/27i
# Interior Separation

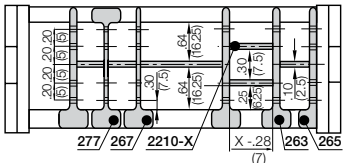


Telephone 1-800-521-2747
Fax 1-401-438-7270

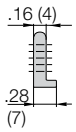
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 3: Shelves

This option is available for the Series 27/27i snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.



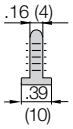

**Side plate 264**




| Side plate | |
|---|---|
| Unassembled | **Part No. 264** |
| Assembled | **Part No. 265** |

- **Side plate 264 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

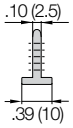
**Vertical separator 262**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 262** |
| Assembled | **Part No. 263** |

- **Slotted separator 262 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

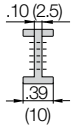
**Closed slotted separator 266**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 266** |
| Assembled | **Part No. 267** |

- **Closed slotted separator 266 for E-Chains®**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

**Open slotted separator 276**



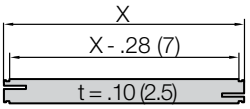

| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 276** |
| Assembled | **Part No. 277** |

- **Open slotted separator 276 for E-Chains®**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 5 middle slots only.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |

**Shelves 2200-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments



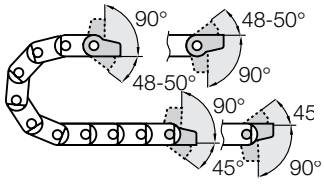
# E-Chain System® E2 Medium
# Series 26/27/27i
# Mounting Brackets - Plastic

Standard

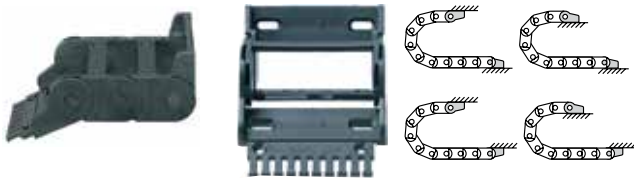
## Option 1: pivoting

- Short and long travels
- Space-restricted conditions
- Corrosion resistant

Moving end
26...3PZB



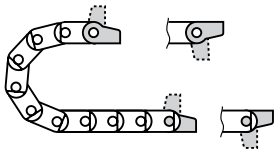

Fixed end
26...4PZB



## Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

Moving end
26...1PZB

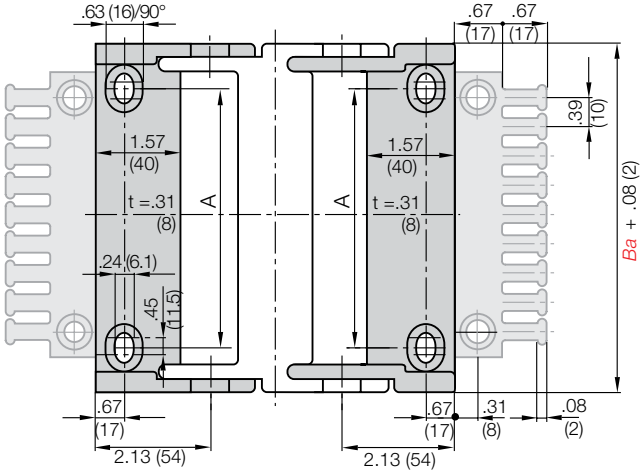


Fixed end
26...2PZB

### Part Number Structure

2605- 34 PZB 1

- With 10 cable tiewraps
- With tiewrap plates
- Complete Set
  **34 = Pivoting**
  **12 = Locking**
- Mounting brackets for selected chain type




**Full set, for both ends:**
2605- 34 PZB Full set, **each part with pin/bore + tiewrap plate**
**Single-part order:**
2605- 3 PZB Mounting bracket **with bore + tiewrap plate**
2605- 4 PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 26, 27 or 27i:**
**2605-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 26, 27 or 27i:**
**2605-34PZB1**

**Part No. Full Set** (pivoting)
**Without Tiewrap Plates**
**Series 26, 27 or 27i:**
**2605-34PZ**

| For Chain Type | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 cable ties | Part No. Full Set without Tiewrap Plate | Dimension A in. | (mm) |
|---|---|---|---|---|---|
| 26/27/27i-05 | 2605- ☐ PZB | 2605- ☐ PZB1 | 2605- ☐ PZ | 1.18 | (30) |
| 26/27/27i-07 | 2607- ☐ PZB | 2607- ☐ PZB1 | 2607- ☐ PZ | 2.17 | (55) |
| 26/27/27i-10 | 2610- ☐ PZB | 2610- ☐ PZB1 | 2610- ☐ PZ | 3.15 | (80) |
| 26/27/27i-12 | 2612- ☐ PZB | 2612- ☐ PZB1 | 2612- ☐ PZ | 4.13 | (105) |
| 26/27/27i-15 | 2615- ☐ PZB | 2615- ☐ PZB1 | 2615- ☐ PZ | 5.12 | (130) |
| 26/27/27i-17 | 2617- ☐ PZB | 2617- ☐ PZB1 | 2617- ☐ PZ | 6.10 | (155) |
| 26/27/27i-20 | 2620- ☐ PZB | 2620- ☐ PZB1 | 2620- ☐ PZ | 7.09 | (180) |

34 or 12

For pivoting brackets choose 34
For locking brackets choose 12
Example: 2605- 34 PZB

## Cable tiewraps as individual parts

| Cable tiewraps 100 pieces/bag | Width x Length in. | (mm) | Maximum Ø in. | (mm) | Tensile Strength lbs | (N) |
|---|---|---|---|---|---|---|
| CFB-001 | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 26/27/27i
# Mounting Brackets - KMA

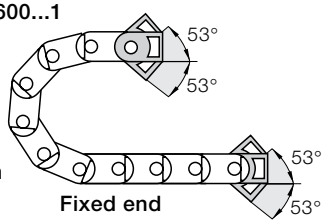
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Space-restricted conditions
- Corrosion resistant
- Universal use

Moving end
2600...1

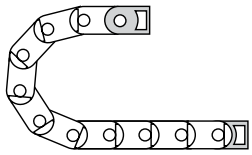



Fixed end
2600...2

## Option 2: locking

- Vertical hanging/standing travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Extreme accelerations
- Corrosion resistant
- Universal use

Moving end
2700...1

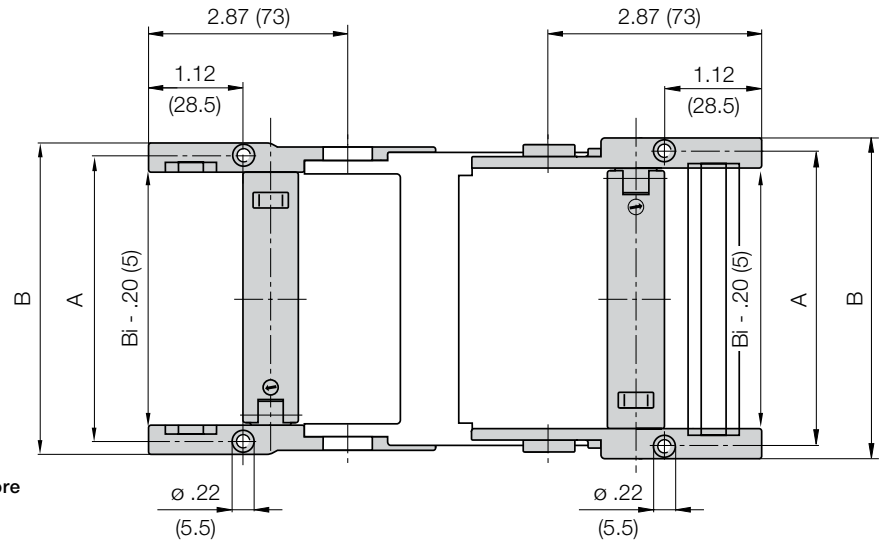


Fixed end
2700...2

**Part Number Structure**

| 2600- | 07- | 12 | P |
|---|---|---|---|

- P = With Profile Rail
- 12 = Complete Set
- 07- = Width
- 2600 = Pivoting, 2700 = Locking




**Full set, for both ends:**

2600- 07- 12 Full set, **each part with pin/bore**

**Single-part order:**

2600- 07- 1 Mounting bracket **with bore**

2600- 07- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 2700**

**Part No. Full Set** (pivoting)
**Series 26/27/27i:**
**2600-Width-12**

**Part No. Full Set** (pivoting)
**with profile rail**
**Series 26/27/27i:**
**2600-Width-12P**

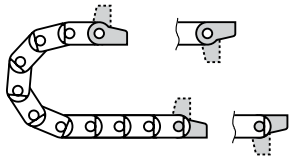
| Width | Part No. Full Set | | | With | Dimension A | | Dimension B | |
|---|---|---|---|---|---|---|---|---|
| | Pivoting | Locking | | Profile Rail | in. | (mm) | in. | (mm) |
| -05 | 2600 | 2700 | -05-12 | P | 2.28 | (58) | 2.72 | (69) |
| -07 | 2600 | 2700 | -07-12 | P | 3.27 | (83) | 3.70 | (94) |
| -10 | 2600 | 2700 | -10-12 | P | 4.25 | (108) | 4.69 | (119) |
| -12 | 2600 | 2700 | -12-12 | P | 5.24 | (133) | 5.67 | (144) |
| -15 | 2600 | 2700 | -15-12 | P | 6.22 | (158) | 6.65 | (169) |
| -17 | 2600 | 2700 | -17-12 | P | 7.20 | (183) | 7.64 | (194) |
| -20 | 2600 | 2700 | -20-12 | P | 8.19 | (208) | 8.62 | (219) |

# E-Chain System® E2 Medium
# Series 26/27/27i
# Mounting Brackets - Steel

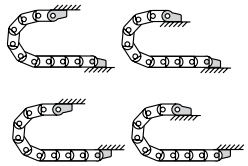
## Option 1: Steel

- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

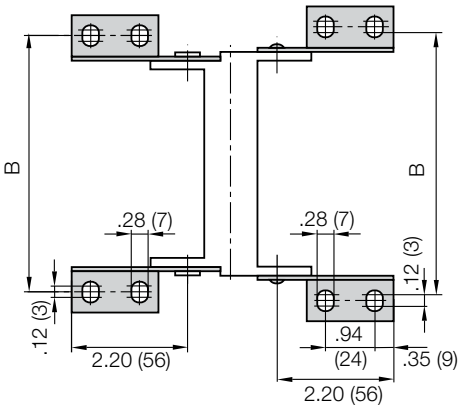
**Moving end**
**260...1**

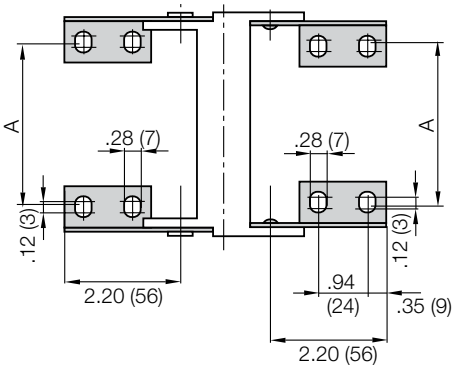


**Fixed end**
**260...2**



Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 26/27/27i-05 | **260-12** | 1.44 | (36.5) | 3.31 | (84) |
| 26/27/27i-07 | **260-12** | 2.44 | (62) | 4.25 | (108) |
| 26/27/27i-10 | **260-12** | 3.43 | (87) | 5.24 | (133) |
| 26/27/27i-12 | **260-12** | 4.41 | (112) | 6.22 | (158) |
| 26/27/27i-15 | **260-12** | 5.39 | (137) | 7.20 | (183) |
| 26/27/27i-17 | **260-12** | 6.42 | (163) | 8.23 | (209) |
| 26/27/27i-20 | **260-12** | 7.40 | (188) | 9.21 | (234) |

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 26/27/27i:
**260-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 26/27/27i:
**260-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 26/27/27i:
**260-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

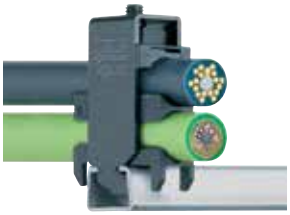
# E-Chain System® E2 Medium
# Series 26/27/27i
# Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

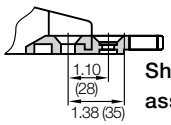
## Chainfix Clip

### Modular snap-on strain relief device

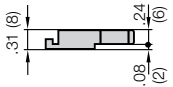
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

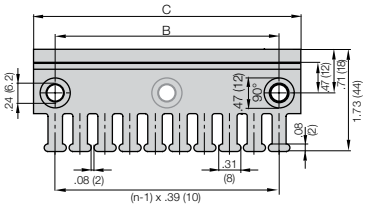



Single tiewrap plate

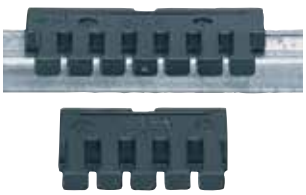
### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**



### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 2050-Z | 6 | 2.36 | (60) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E2 Medium
# Series 26/27/27i
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 95-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 95-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

**Part No. 95-30**

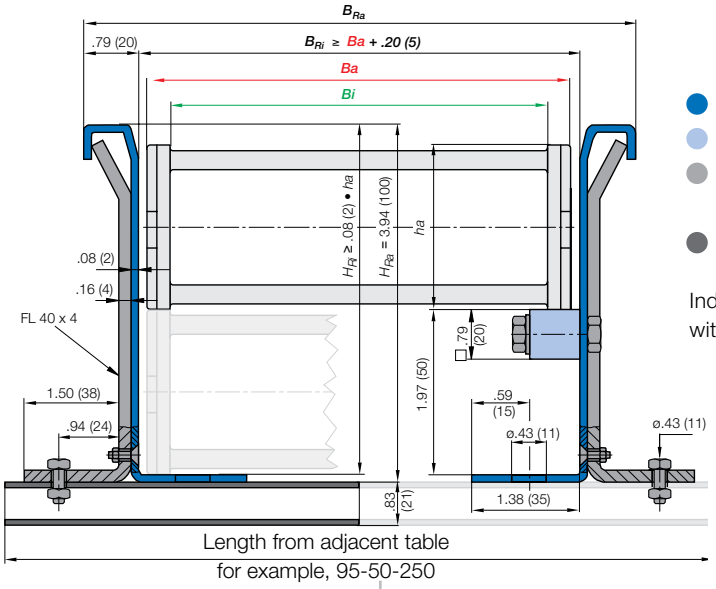
= 13 sections of 6.56 ft (2 m) glide bar

**Part No. 92-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 95-50-400 for 15.75" (400 mm) long profile rail.

Width of Crossbar
27-**05**-200-0

| $B_{Ri}$ | Installation Part No. |
|---|---|
| **-05** 2.80 (71) | **95-50-200** |
| **-07** 3.78 (96) | **95-50-200** |
| **-10** 4.76 (121) | **95-50-250** |
| **-12** 5.75 (146) | **95-50-250** |
| **-15** 6.73 (171) | **95-50-300** |
| **-17** 7.83 (199) | **95-50-300** |
| **-20** 8.82 (224) | **95-50-350** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 340/350

1.77 1.77

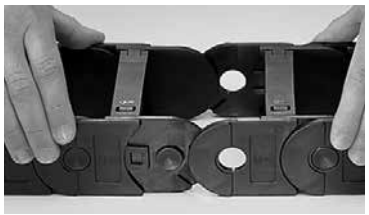
## Price Index

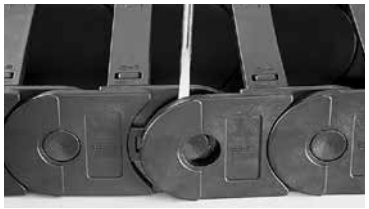
Series 340/350

## Special Features / Options

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips





Easy to assemble and disassemble

## Other Installation Methods

- Vertical, hanging ≤ 262 ft (80 m)
- Vertical, standing ≤ 9.84 ft (3 m)
- Side-mounted, unsupp. ≤ 3.28 ft (1 m)
- Rotary requires further calculation

## Usage Guidelines

- If snap-open accessibility along the inner or outer radius is required
- If Intergrated strain relief at the connection point is required
- If modular interior separation is required
- For travels up to 492 ft (150 m)
- For long service life

- If maximum stability is required
  ➤ **Series 380, E4/100**
- If chip protection is required
  ➤ **Series R68 or R167/R168, E2 Tubes**
- If the application is very simple
  ➤ **Series E/Z 300, E-Z Chain**

## Features & Benefits

1. Lateral glide surfaces for side mounted
2. operation
3. Double stop dog for long unsupported length
4. Integrated strain relief possible
5. Dirt-repellent, contoured exterior
   Series 340 snap-open along the inner radius can be combined with Series 350 snap-open along the outer radius
6. Cable-friendly smooth interior
7. Large pins for long service life
8. Available with extender crossbars for large hoses

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

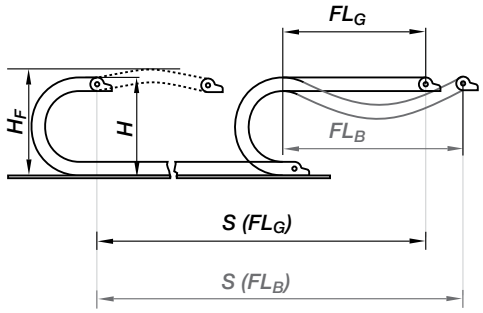
| | |
|---|---|
| 16.4 ft (5 m) **350-150-100-0** | **E-Chain®** |
| With 2 separators **311** assembled every 2nd link | **Interior Separation** |
| 1 Set **3150-34PZB** | **Mounting Bracket** |

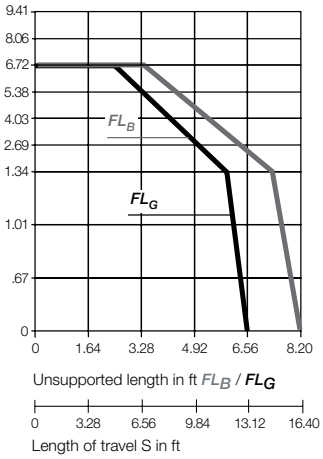
# E-Chain System® E2 Medium
# Series 340/350
# Installation Dimensions

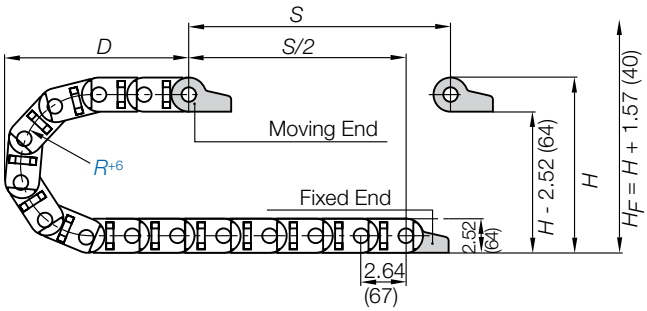
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.55 (15)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| H +5 | 8.46 (215) | 10.43 (265) | 12.40 (315) | 14.37 (365) | 18.31 (465) | 22.24 (565) | 26.18 (665) |
| D | 5.91 (150) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 15.75 (400) | 19.69 (500) | 25.59 (650) | 28.54 (725) | 34.45 (875) | 41.34 (1050) | 48.23 (1225) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

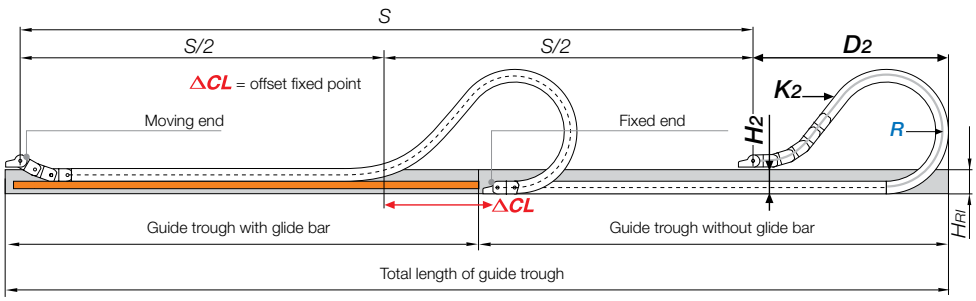
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Over length - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 492 ft. (150 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| $H_2$ | – | – | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ +5 | – | – | 18.70 (45) | 22.44 (570) | 30.71 (780) | 39.76 (1010) | 45.28 (1150) |
| $K_2$ | – | – | 31.65 (804) | 39.57 (1005) | 52.76 (1340) | 65.94 (1675) | 76.50 (1943) |
| ΔCL | — | — | 9.17 (233) | 11.93 (303) | 18.23 (463) | 25.31 (643) | 28.86 (733) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.81 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

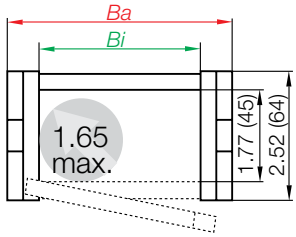
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 340/350

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 340 - Snap-open along the inner radius

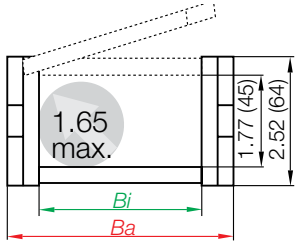


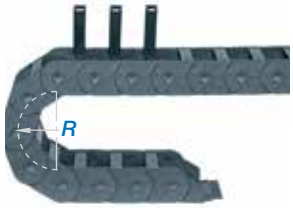
Part Number Structure

340- 150- 100- 0

- Color - Black
- Bending radius
- Width
- Series

## Series 350 - Snap open along the outer radius

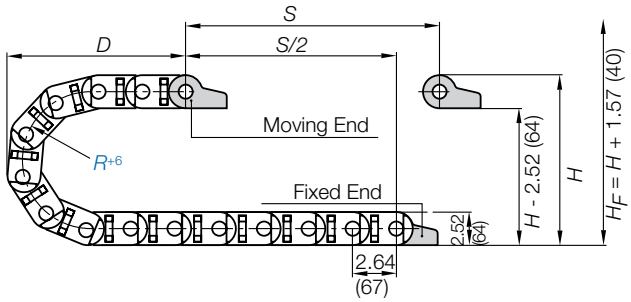



Part Number Structure

350- 150- 100- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: 350-150-100-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)

| Part Number Snap-open Inner Radius | Part Number Snap-open Outer Radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 340-050- | 350-050- | -0 | 1.97 (50) | 2.76 (70) | ≈ 1.08 (1.603) |
| 340-075- | 350-075- | -0 | 2.95 (75) | 3.74 (95) | ≈ 1.19 (1.778) |
| 340-100- | 350-100- | -0 | 3.94 (100) | 4.72 (120) | ≈ 1.29 (1.925) |
| 340-115- | 350-115- | -0 | 4.53 (115) | 5.31 (135) | ≈ 1.33 (1.985) |
| 340-125- | 350-125- | -0 | 4.92 (125) | 5.71 (145) | ≈ 1.36 (2.025) |
| 340-150- | 350-150- | -0 | 5.91 (150) | 6.69 (170) | ≈ 1.45 (2.165) |
| 340-175- | 350-175- | -0 | 6.89 (175) | 7.68 (195) | ≈ 1.53 (2.278) |
| 340-200- | 350-200- | -0 | 7.87 (200) | 8.66 (220) | ≈ 1.65 (2.448) |
| 340-225- | 350-225- | -0 | 8.86 (225) | 9.65 (245) | ≈ 1.74 (2.587) |
| 340-250- | 350-250- | -0 | 9.84 (250) | 10.63 (270) | ≈ 1.83 (2.725) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 350-150-100-0

| | 075 | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| $H_{+5}$ | 8.46 (215) | 10.43 (265) | 12.40 (315) | 14.37 (365) | 18.31 (465) | 22.24 (565) | 26.18 (665) |
| D | 5.91 (150) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 15.75 (400) | 19.69 (500) | 25.59 (650) | 28.54 (725) | 34.45 (875) | 41.34 (1050) | 48.23 (1225) |

0=Standard color black. For other colors see Chapter 1

# E-Chain System® E2 Medium
# Series 340/350
# Extender Crossbars

The extender crossbars were developed specifically for applications in which a large diameter hose must be guided carefully. It is intended for hoses with a maximum outer diameter of 4.53 (115 mm). The extender crossbar can be placed along either the outer (Series 350) or inner (Series 340) radius. In most applications, the inner radius is preferred. However, the chain cannot glide on itself in this case. If gliding operation is required, the crossbars are assembled along the outer radius and a special guide trough is required. The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

If the extender crossbars are attached along the outer radius, the side of the chain must be supported so that the crossbars do not come in contact with the running surface. We are happy to assist with the design and assembly of this type of system. This design is also suitable for gliding applications. We are also happy to assist with guide trough requirements.

## Extender crossbar: Series 340

340-150...

340-175...

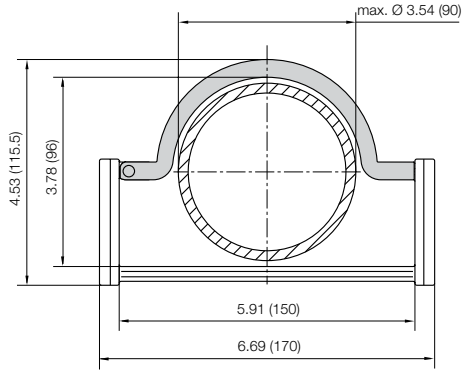
| Series | max. Hose Ø in. (mm) | Bending Radii in. (mm) |
|---|---|---|
| **340-150** | 3.54 (90) | 5.91 (150), 7.87 (200), 9.84 (250) |
| **340-175** | 4.53 (115) | 7.87 (200), 9.84 (250) |

## Extender crossbar: Series 350

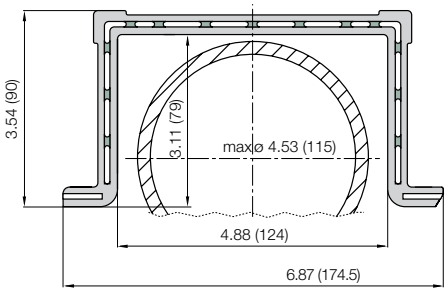
350-150...

350-175...

| Series | max. Hose Ø in. (mm) | Bending Radii in. (mm) |
|---|---|---|
| **350-150** | 3.54 (90) | 2.95 (75), 3.94 (100), 4.92 (125), |
| | | 5.91 (150), 7.87 (200), 9.84 (250) |
| **350-175** | 4.53 (115) | 2.95 (75), 3.94 (100), 4.92 (125), |
| | | 5.91 (150), 7.87 (200), 9.84 (250) |



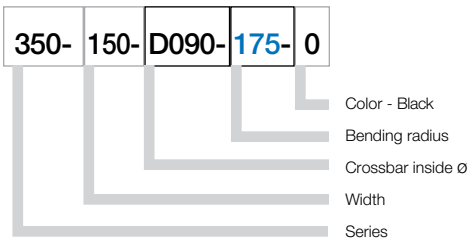

Part No. (round extender crossbar)
3500-150-D090




Part No. (square extender crossbar)
3500-175-D115*

*This product also available in round design - order **Part No. 3500-175-RD115**

**Part Number Structure for E-Chain®**
**with Extender Crossbars**




**Assembly**
As with all Series 340/350 crossbars, the extender crossbars are opened using a screwdriver.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 340/350
# Interior Separation

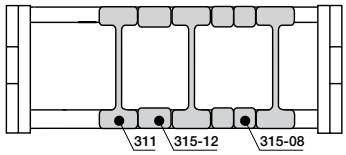


Telephone 1-800-521-2747
Fax 1-401-438-7270

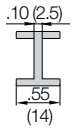
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.




**Vertical separator 301**




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 301** |
| Assembled | **Part No. 311** |

- **Standard separator 301 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

**Spacers 305-XX**

| Spacer | |
|---|---|
| Unassembled | **Part No. 305-XX** |
| Assembled | **Part No. 315-XX** |

XX = width of the spacer

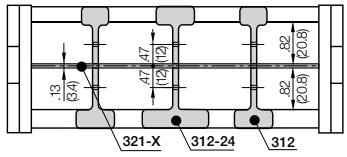
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

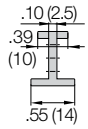
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **305-08** | **315-08** | .31" | (8) |
| **305-12** | **315-12** | ..47" | (12) |

## Option 2: Full-width shelf

This option is available for the snap-open Series 340/350 chains. It is ideal for use in applications involving many thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.



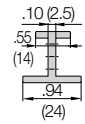

**Slotted vertical separator 302**




| Slotted Separator | |
|---|---|
| Unassembled | **Part No. 302** |
| Assembled | **Part No. 312** |

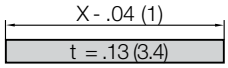
- **Slotted separator 302 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

**Slotted vertical separator 302-24**




| Slotted Separator | |
|---|---|
| Unassembled | **Part No. 302-24** |
| Assembled | **Part No. 312-24** |

- **Slotted separator 302-24 for E-Chains®**
  This separator features a wide base. It can be used in side mounted applications.

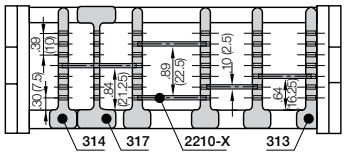



| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **320-050** | **321-050** |
| 2.95 | (75) | **320-075** | **321-075** |
| 3.94 | (100) | **320-100** | **321-100** |
| 4.53 | (115) | **320-115** | **321-115** |
| 4.92 | (125) | **320-125** | **321-125** |

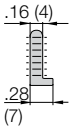
| Width X in. | (mm) | Part No Unassembled | Part No. Assembled |
|---|---|---|---|
| 5.91 | (150) | **320-150** | **321-150** |
| 6.89 | (175) | **320-175** | **321-175** |
| 7.87 | (200) | **320-200** | **321-200** |
| 8.86 | (225) | **320-225** | **321-225** |
| 9.84 | (250) | **320-250** | **321-250** |

## Option 3: Shelves

This option is available for the Series 340/350 snap-open chains. It is ideal for use in applications involving many cables with different diameters. This option allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire width.



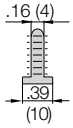

**Side plate 303**




| Side plate | |
|---|---|
| Unassembled | **Part No. 303** |
| Assembled | **Part No. 313** |

- **Slotted separator 303 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

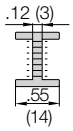
**Vertical separator 304**




| Slotted Separator | |
|---|---|
| Unassembled | **Part No. 304** |
| Assembled | **Part No. 314** |

- **Slotted separator 304 for E-Chains®**
  This component is used to form the basic pattern of a shelf system.

**Open slotted separator 307**



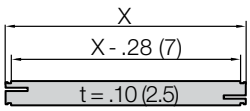

| Slotted separator, open | |
|---|---|
| Unassembled | **Part No. 307** |
| Assembled | **Part No. 317** |

- **Open slotted separator 307 for E-Chains®**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 5 middle slots only.

**Shelves 2200-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 340/350
# Mounting Brackets - Plastic

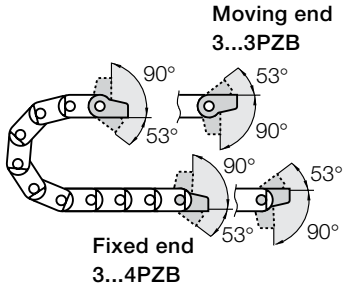


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

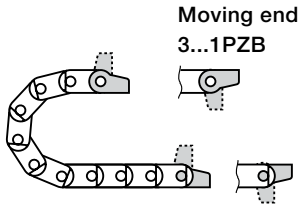
## Option 1: pivoting

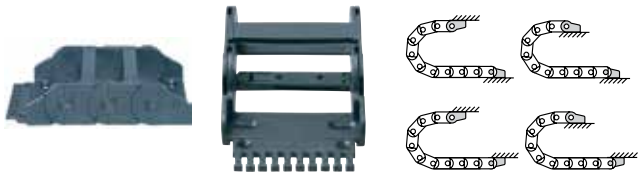
- Short and long travels
- Space-restricted conditions
- Corrosion resistant



## Option 2: locking

- Vertical hanging/standing travels
- Extreme accelerations
- Corrosion resistant

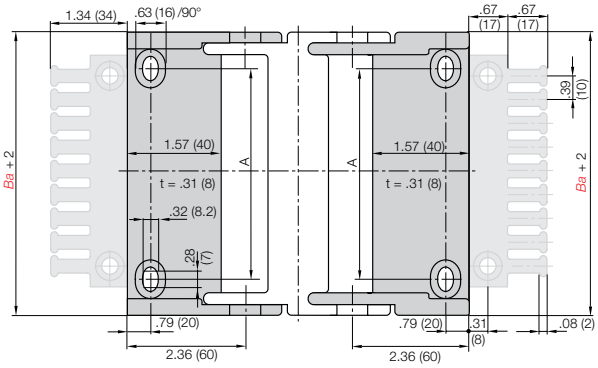


### Part Number Structure

3075- [34] PZ B K1

- With 10 cable tiewraps
- With tiewrap plates
- Mounting brackets only
- Complete Set
  **34 = Pivoting**
  **12 = Locking**
- Mounting brackets for selected chain type




**Full set, for both ends:**

3075- [34] PZB Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

3075- [3] PZB Mounting bracket **with bore + tiewrap plate**

3075- [4] PZB Mounting bracket **with pin + tiewrap plate**

**Part No. Full Set** (pivoting)
**Series 340, 350:**
**3075-34PZ**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates**
**Series 340, 350:**
**3075-34PZB**

**Part No. Full Set** (pivoting)
**With Tiewrap Plates + 10 cable ties**
**Series 340, 350:**
**3075-34PZBK1**

| For Chain Type | Part No. Mounting Bracket Full Set | Part No. Full Set with Tiewrap Plate | Part No. Full Set with Tiewrap Plate + 10 Cable Ties | Dimension A in. | (mm) |
|---|---|---|---|---|---|
| 340/350-050 | 3050- [ ] PZ | 3050- [ ] PZB | 3050- [ ] PZBK1 | 1.10 | (28) |
| 340/350-075 | 3075- [ ] PZ | 3075- [ ] PZB | 3075- [ ] PZBK1 | 2.09 | (53) |
| 340/350-100 | 3100- [ ] PZ | 3100- [ ] PZB | 3100- [ ] PZBK1 | 3.07 | (78) |
| 340/350-115 | 3115- [ ] PZ | 3115- [ ] PZB | 3115- [ ] PZBK1 | 3.66 | (93) |
| 340/350-125 | 3125- [ ] PZ | 3125- [ ] PZB | 3125- [ ] PZBK1 | 4.06 | (103) |
| 340/350-150 | 3150- [ ] PZ | 3150- [ ] PZB | 3150- [ ] PZBK1 | 5.04 | (128) |
| 340/350-175 | 3175- [ ] PZ | 3175- [ ] PZB | 3175- [ ] PZBK1 | 6.02 | (153) |
| 340/350-200 | 3200- [ ] PZ | 3200- [ ] PZB | 3200- [ ] PZBK1 | 7.01 | (178) |
| 340/350-225 | 3225- [ ] PZ | 3225- [ ] PZB | 3225- [ ] PZBK1 | 7.99 | (203) |
| 340/350-250 | 3250- [ ] PZ | 3250- [ ] PZB | 3250- [ ] PZBK1 | 8.98 | (228) |

[34] or [12]

[34] For pivoting brackets choose
[12] For locking brackets choose
Example: 3075- [34] PZB

## Cable tiewraps as individual parts

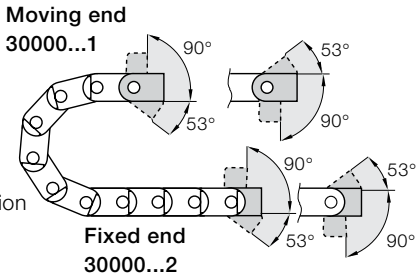
| Cable tiewraps 100 pieces/bag | Width x Length in. | (mm) | Maximum Ø in. | (mm) | Tensile Strength lbs | (N) |
|---|---|---|---|---|---|---|
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

# E-Chain System® E2 Medium
# Series 340/350
# Mounting Brackets - KMA

Standard

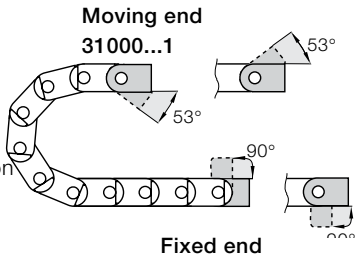
## Option 1: pivoting

- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Space-restricted conditions
- Corrosion resistant
- Universal use



## Option 2: locking

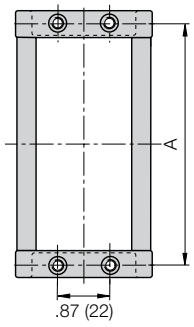
- Short and long travels
- Optional integrated profile rail for strain relief
- Bolted connection outside of chain cross section
- Extreme accelerations
- Corrosion resistant
- Universal use

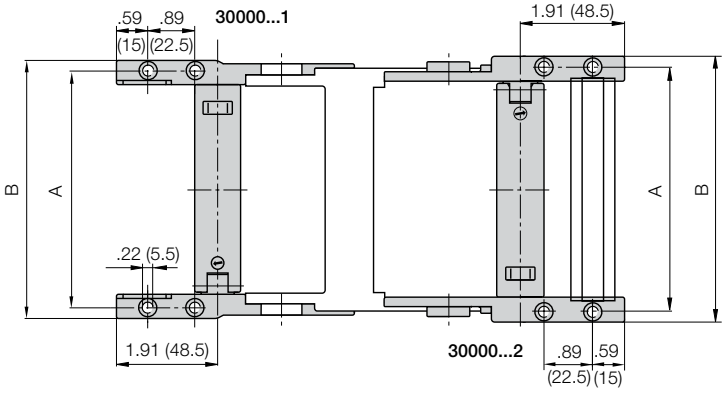


### Part Number Structure

| 30000- | 075- | 12 | P |
|---|---|---|---|

- P: With Profile Rail
- 12: Complete Set
- 075-: Width
- 30000- : 30000 = Pivoting, 31000 = Locking




**Full set, for both ends:**

30000- | 075- | 12 — Full set, **each part with pin/bore**

**Single-part order:**

30000- | 075- | 1 — Mounting bracket **with bore**

30000- | 075- | 2 — Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 31000**

**Part No. Full Set** (pivoting)
**Series 340/350:**
**30000-Width-12**

**Part No. Full Set** (pivoting)
**with profile rail**
**Series 340/350:**
**30000-Width-12P**

| Width | Part No. Full Set | | | With | Dimension A | | Dimension B | |
|---|---|---|---|---|---|---|---|---|
| | Pivoting | Locking | | Profile Rail | in. | (mm) | in. | (mm) |
| -050 | 30000 | 31000 | -050-12 | P | 2.48 | (63) | 2.91 | (74) |
| -075 | 30000 | 31000 | -075-12 | P | 3.46 | (88) | 3.90 | (99) |
| -100 | 30000 | 31000 | -100-12 | P | 4.45 | (113) | 4.88 | (124) |
| -115 | 30000 | 31000 | -115-12 | P | 5.04 | (128) | 5.47 | (139) |
| -125 | 30000 | 31000 | -125-12 | P | 5.43 | (138) | 5.87 | (149) |
| -150 | 30000 | 31000 | -150-12 | P | 6.42 | (163) | 6.85 | (174) |
| -175 | 30000 | 31000 | -175-12 | P | 7.40 | (188) | 7.83 | (199) |
| -200 | 30000 | 31000 | -200-12 | P | 8.39 | (213) | 8.82 | (224) |
| -225 | 30000 | 31000 | -225-12 | P | 9.37 | (238) | 9.80 | (249) |
| -250 | 30000 | 31000 | -250-12 | P | 10.35 | (263) | 10.79 | (274) |

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# E-Chain System® E2 Medium
# Series 340/350
# Mounting Brackets - Steel



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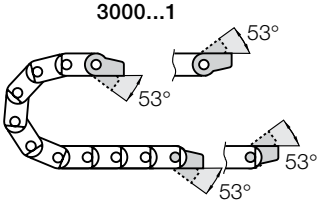
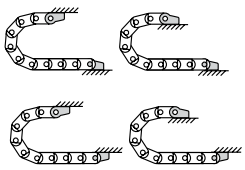
## Option 1: Steel

- Pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive
- Bolted connection outside of chain cross-section possible

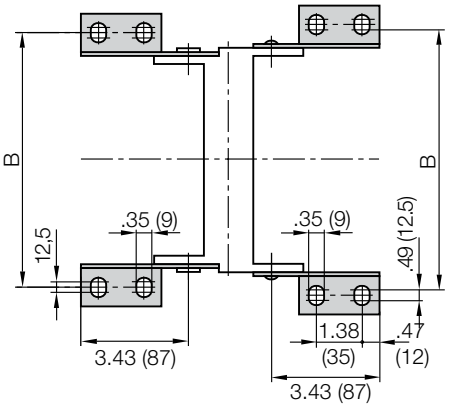
**Moving end**
**3000...1**

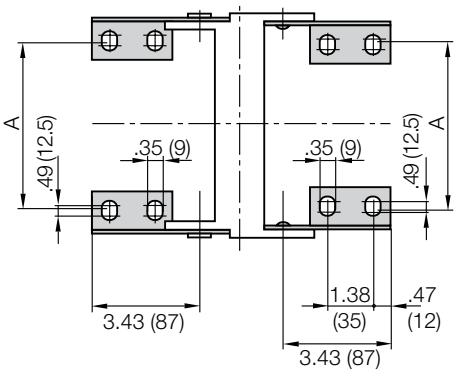



**Fixed end**
**3000...2**



Possible installation configurations -




| Chain Type | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) | Dimension C in. | (mm) |
|---|---|---|---|---|---|---|---|
| 340/350-050 | **3000-12** | | – | 3.39 | (86) | 3.82 | (97) |
| 340/350-075 | **3000-12** | 2.09 | (53) | 4.37 | (111) | 4.80 | (122) |
| 340/350-100 | **3000-12** | 3.07 | (78) | 5.35 | (136) | 5.79 | (147) |
| 340/350-115 | **3000-12** | 3.66 | (93) | 5.94 | (151) | 6.38 | (162) |
| 340/350-125 | **3000-12** | 4.06 | (103) | 6.34 | (161) | 6.77 | (172) |
| 340/350-150 | **3000-12** | 5.04 | (128) | 7.32 | (186) | 7.76 | (197) |
| 340/350-175 | **3000-12** | 6.02 | (153) | 8.35 | (212) | 8.82 | (224) |
| 340/350-200 | **3000-12** | 7.01 | (178) | 9.29 | (236) | 9.72 | (247) |
| 340/350-225 | **3000-12** | 7.99 | (203) | 10.28 | (261) | 10.71 | (272) |
| 340/350-250 | **3000-12** | 8.98 | (228) | 11.26 | (286) | 11.69 | (297) |

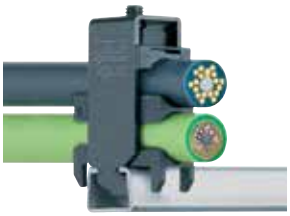
**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 340/350:
**3000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 340/350:
**3000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 340/350:
**3000-2**

# E-Chain System® E2 Medium
# Series 340/350
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

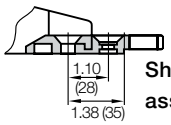
## Chainfix Clip

### Modular snap-on strain relief device

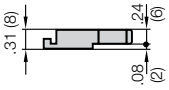
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

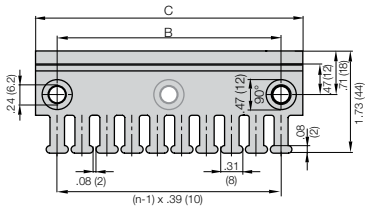



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

**For more information please refer to strain relief section of Chapter 10**

| Part No. | No of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| For Fixed Crossbar | | | |
| 3050-Z | 5 | 1.97 | (50) |
| 3075-Z | 7 | 2.91 | (74) |
| For Opening Crossbar | | | |
| 3035-ZS | 3 | 1.38 | (35) |
| 3050-ZS | 5 | 1.97 | (50) |
| 3075-ZS | 7 | 2.95 | (75) |

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Medium
# Series 340/350
# Guide Trough



Telephone 1-800-521-2747
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 93-30**
- 1/2 travel length of glide bars
  **Part number 93-01**
- Installation sets as end connectors
  **Part Number 93-50 -XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**

Width of Crossbar
350-**075**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-050** | 2.95 (75) | **93-50-150** |
| **-075** | 3.94 (100) | **93-50-200** |
| **-100** | 4.92 (125) | **93-50-250** |
| **-115** | 5.51 (140) | **93-50-250** |
| **-125** | 5.91 (150) | **93-50-300** |
| **-150** | 6.89 (175) | **93-50-300** |
| **-175** | 7.87 (200) | **93-50-300** |
| **-200** | 8.86 (225) | **93-50-350** |
| **-225** | 9.84 (250) | **93-50-350** |
| **-250** | 10.83 (275) | **93-50-400** |

Standard length profile rail

Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar

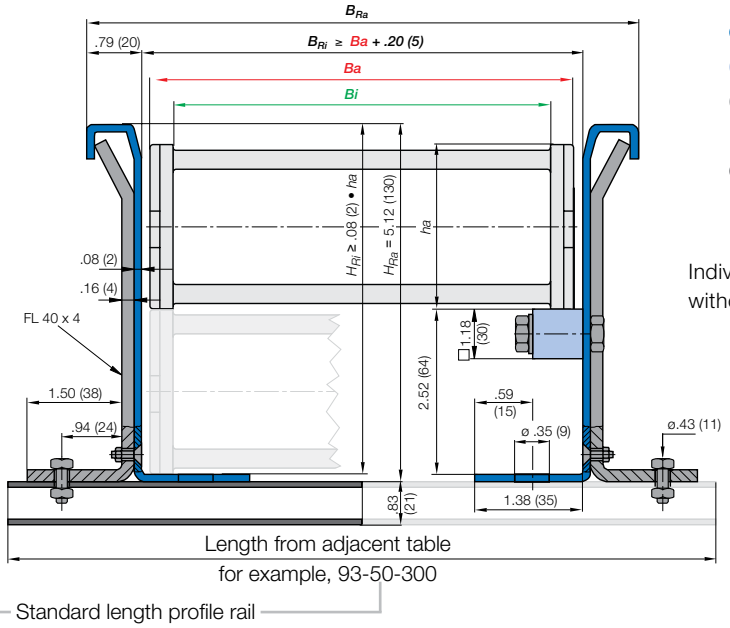
= 25 sections of 6.56 ft (2 m) guide trough

**Part No. 93-30**

= 13 sections of 6.56 ft (2 m) glide bar

**Part No. 93-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
Example: 93-50-300 for 15.75" (400 mm) long profile rail.




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

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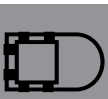
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



158.100.100
158.100.100

igus®

# E2 Tubes

# E2 Tubes - protection against hot chips and debris

**E2 E-Tube**
**Series Zipper, R, R100 and R1000**

Laboratory tests and numerous field applications over the past 20 years prove that igus®' E-Chains® and fully enclosed E-Tubes protect cables used in welding robots and machine tools. For extreme-temperature applications, igus® offers E-Tubes made from its igumid HT material, which repels hot chips and flying debris reaching 1,562°F (850°C). All standard E2 and E4 E-Tubes are available made from igumid HT, upon request.

### Typical industries and applications

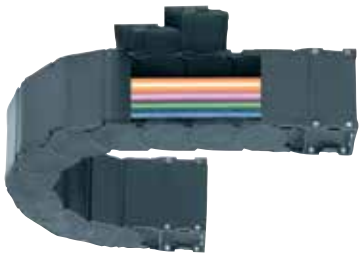
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

iF-Design Awards -
Series R117/118 and Series R68

ESD Classification: Electrically conductive
ESD/ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

**Series R - For higher speeds and smooth running**



**Series R100 - Cost effective alternative, for applications with low and medium speeds**

E2 E-Tubes in chip-area of a tooling machine. Resistant against hot metal chips up to 1,562°F (850°C)

U-shaped supported E-Tube
for high lateral acceleration

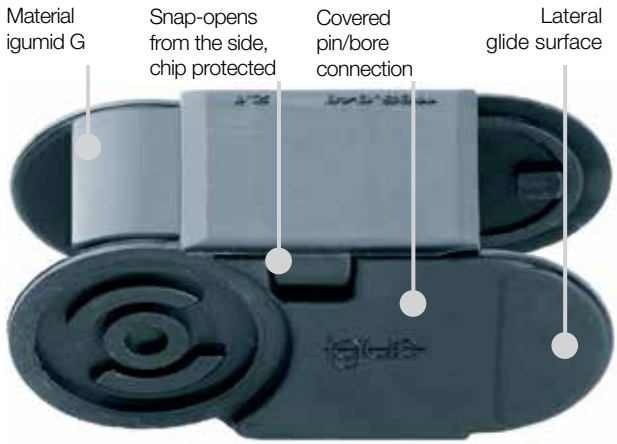
Standing application - R68 Tube -
Note: the first links are supported

## RX40 - New E-Tube with chip repellent design

A world premiere from igus®- a totally redesigned E-Tube - repels chips, is extremely tight, and can still be opened!

**Series RX40 ➤ Page 5.52**

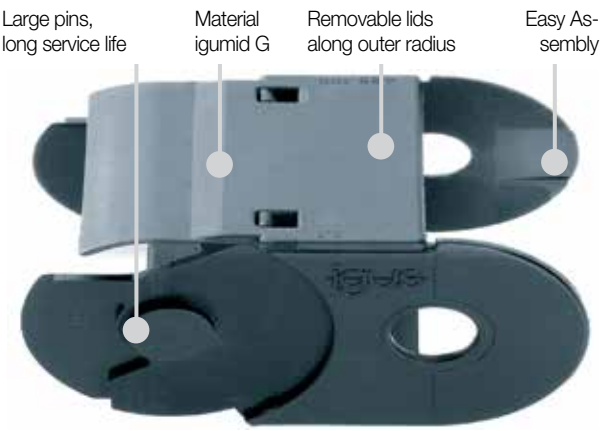
# E-Chain System® E2 Tubes
# Selection Guide




## E2 Series R100 - robust and tight

- Very good protection against chips (also hot chips)
- Hinged, snap-open, removable lids along inner or outer radius reduce assembly time
- Space-efficient with optimized ratio of inner dimension to outer dimension
- Double stop dog for long service life and strong unsupported lengths
- Universal KMA mounting brackets with attachment capability on all sides
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **R117/118** | .83 | (21) | .79-3.94 | (20-100) | 1.26-4.41 | (32-112) | 1.10 | (28) | 2.48-7.09 | (63 - 180) |
| **R157/158** | 1.57 | (40) | 1.57-7.87 | (40-200) | 2.20-8.50 | (56-216) | 1.97 | (50) | 3.94-9.84 | (100 - 250) |
| **R167/168** | 1.97 | (50) | 1.97-9.84 | (50-250) | 2.68-10.55 | (68-268) | 2.52 | (64) | 3.94-11.81 | (100 - 300) |



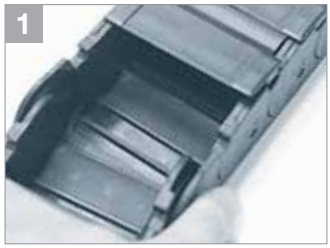

## E2 Series R - small pitch for smooth motion

- Protection for cables and hoses against chips (also hot chips)
- Small pitch for low noise, smooth operation
- Smooth, chip repellant exterior
- Lids removable for assembly time reduction
- Double stop dog for strong unsupported lengths
- KMA mounting brackets with attachment capability on all sides
- Very small radii possible due to small pitch
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **R48** | .98 | (25) | .98-5.12 | (25-130) | 1.42-5.55 | (36-141) | 1.42 | (36) | 2.36-9.84 | (60 - 250) |
| **R58** | 1.38 | (35) | 1.97-7.87 | (50-200) | 2.60-8.50 | (66-216) | 1.97 | (50) | 2.95-9.84 | (75 - 250) |
| **R68** | 1.77 | (45) | 1.97-9.84 | (50-250) | 2.68-10.55 | (68-268) | 2.52 | (64) | 3.94-11.81 | (100 - 300) |

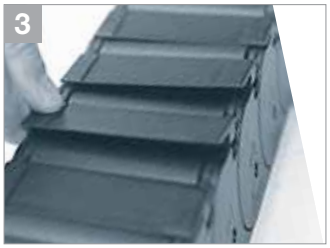
# E-Chain System® E2 Tubes
# Assembly Instructions

## E-Chains® - Assembling E2 Series R100 E-Tubes



Push, click - and snap in pin

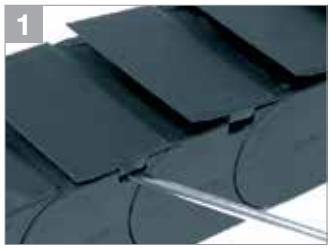
Swivel lids - push and snap



Slide last lid

Push and snap

## E-Chains® - Separating E2 Series R100 E-Tubes



Lever open lid

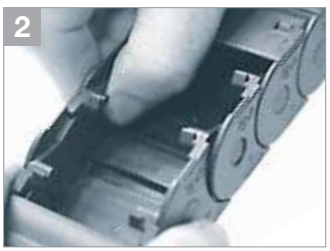
Bend E-Tube to remove lid

Release side-link

Twist and pull apart

## E-Chains® - Assembling E2 Series R48, R58, R68 E-Tubes

Push and click



Snap in pin

Slide lid

Push and snap

## E-Chains® - Separating E2 Series R48, R58, R68 E-Tubes

Lever open lid

Remove lid

Release side-link

Twist and pull apart

# E-Chain System® E2 Medium
# Series R117/R118

.83 .83

## Features & Benefits

1. Effective chip protection, even against hot metal
2. chips
3. Double stop dog for strong unsupported length
4. Smooth, chip-repellent exterior
5. Lateral glide surfaces for side-mounted operation
   Universal KMA mounting brackets with attachment
6. capability on all sides
   Snap-open from the side, covered pin/bore
7. connection
   Space-efficient with optimized ratio of inner to outer
8. dimension
   Snap-open lids along the inner or outer radius

### Price Index

Series R117/R118

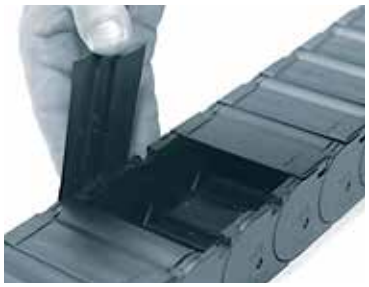
### Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

### Assembly Tips



Lids of the E-Tube Series R100 are hinged for easy access

### Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 65.6 ft (20 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. ≤ 2.29 ft (0.7 m) |
| Rotary requires further calculation |

### Usage Guidelines

- If snap-open accessibility along inner or outer radius is required
- If price is an issue
- If flush attachment is required

- For smoother running and smaller pitch
  ➤ **Series R48 E2 Tubes**
- If accessibility along the sides of the radius is required
  ➤ **Series R760 E4/100**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **117-100-100-0** | **E-Chain®** |
| With 2 separators **1186-01** assembled every 2nd link | **Interior Separation** |
| 1 Set **11800-100-14** | **Mounting Bracket** |

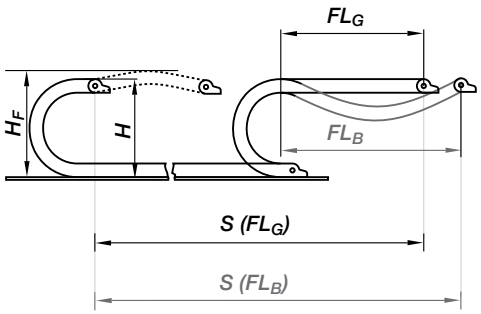
# E-Chain System® E2 Medium Series R117/R118 Installation Dimensions

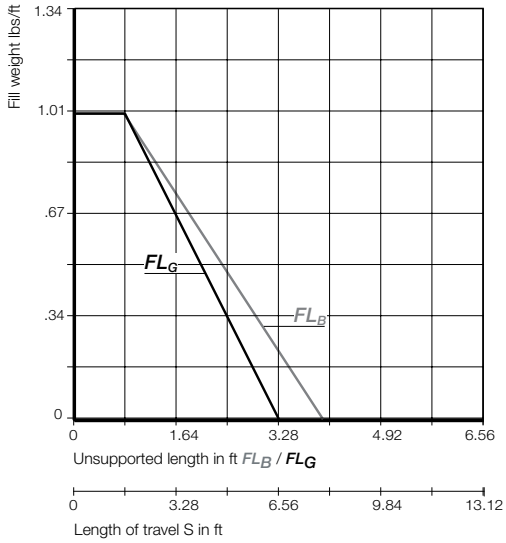


## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



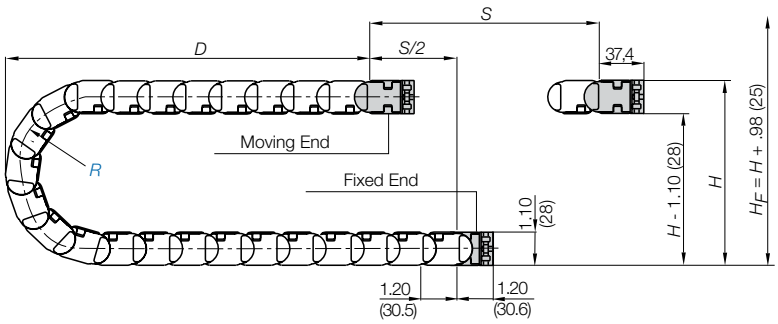




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2}$ + K

The required clearance height: $H_F = H + .98$ **in. (25 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
|---|---|---|---|---|---|---|---|
| H | 6.06 (154) | 7.01 (178) | 8.98 (228) | 9.76 (248) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 4.84 (123) | 5.31 (135) | 6.30 (160) | 6.69 (170) | 7.28 (185) | 8.07 (205) | 9.45 (240) |
| K | 10.24 (260) | 1181 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

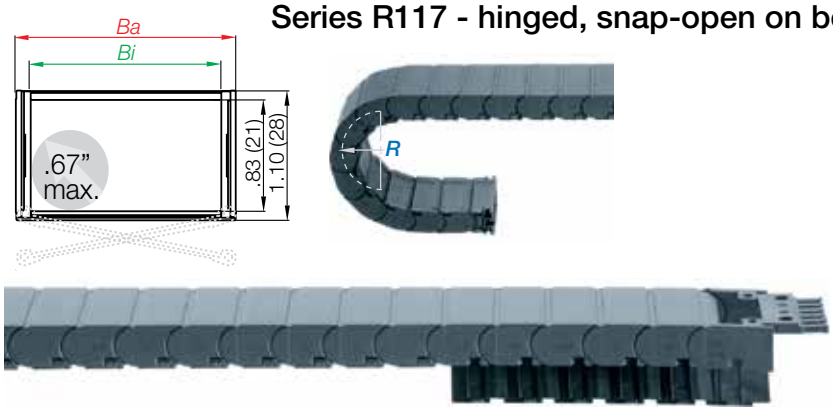
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

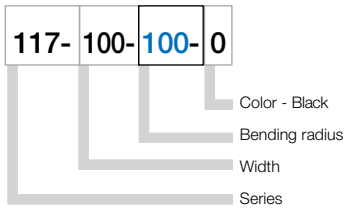
# E-Chain System® E2 Tubes
# Series R117/R118

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

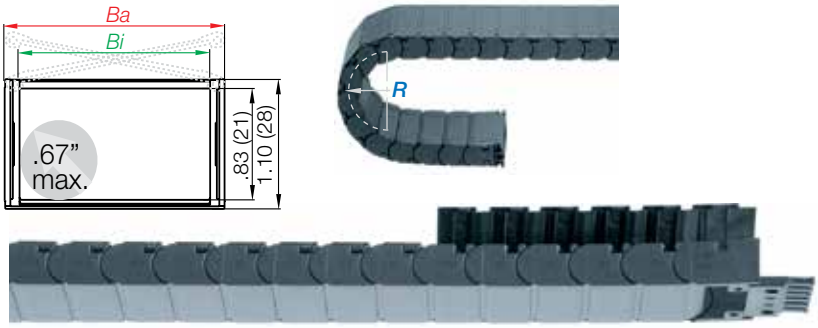
## Series R117 - hinged, snap-open on both sides of the inner radius



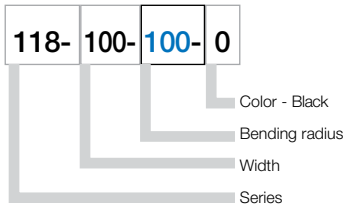

Part Number Structure

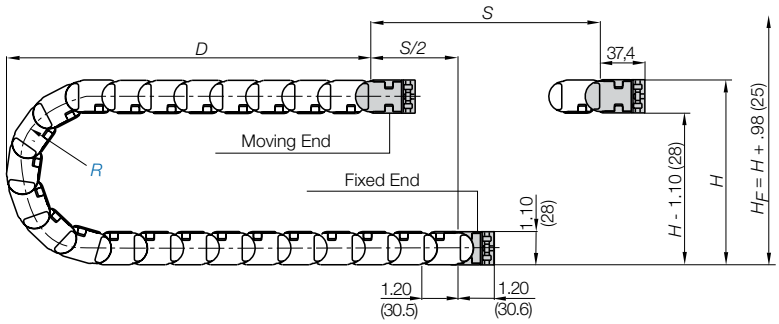



## Series R118 - hinged, snap-open on both sides of the outer radius




Part Number Structure




Supplement part number with required radius. Example: 117-100-100-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

| Part Number. Snap-open inner radius | Snap-open outer radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 117-020- | | -0 | .79 (20) | 1.26 (32) | ≈ 0.29 (0.43) |
| 117-025- | 118-025- | -0 | .98 (25) | 1.46 (37) | ≈ 0.31 (0.46) |
| 117-038- | | -0 | 1.50 (38) | 1.97 (50) | ≈ 0.38 (0.56) |
| 117-048- | 118-048- | -0 | 1.89 (48) | 2.40 (60) | ≈ 0.44 (0.66) |
| 117-063- | | -0 | 2.48 (63) | 2.95 (75) | ≈ 0.51 (0.76) |
| 117-080- | 118-080- | -0 | 3.15 (80) | 3.62 (92) | ≈ 0.60 (0.89) |
| 117-100- | | -0 | 3.94 (100) | 4.41 (112) | ≈ 0.71 (1.06) |

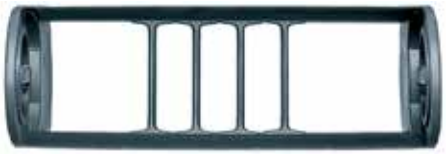
Choose from the radii below for all of the above sizes
Radius (mm) Example: 117-100-100-0

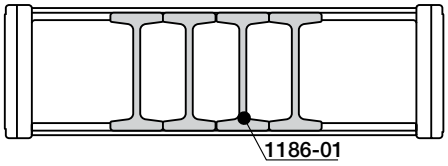
| | 063 | 075 | 100 | 110 | 125 | 145 | 180 |
|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.33 (110) | 4.92 (125) | 5.71 (145) | 7.09 (180) |
| H | 6.06 (154) | 7.01 (178) | 8.98 (228) | 9.76 (248) | 10.94 (278) | 12.52 (318) | 15.28 (388) |
| D | 4.84 (123) | 5.31 (135) | 6.30 (160) | 6.69 (170) | 7.28 (185) | 8.07 (205) | 9.45 (240) |
| K | 10.24 (260) | 1181 (300) | 14.96 (380) | 16.14 (410) | 17.91 (455) | 20.47 (520) | 24.80 (630) |

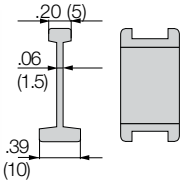
# E-Chain System® E2 Tubes
# Series R117/R118
# Interior Separation
# Mounting Brackets - KMA

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link. .





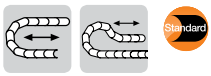



**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 1185-01** |
| Assembled | **Part No. 1186-01** |

- **Standard separator 1185-01 for E-Chains®**
  This separator is used for general subdivision of E-Chain®.

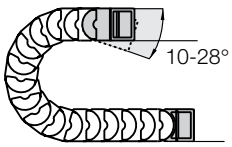
# Mounting Brackets - KMA



### Option: KMA pivoting

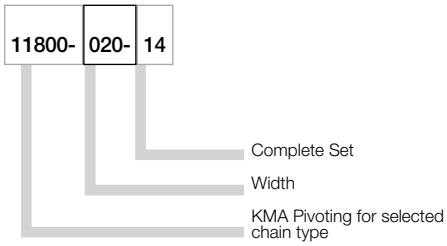
- Short and long travels
- Space restricted
- Corrosion-resistant

**Moving end**
**11800...1**




**Fixed end**
**11800...4**

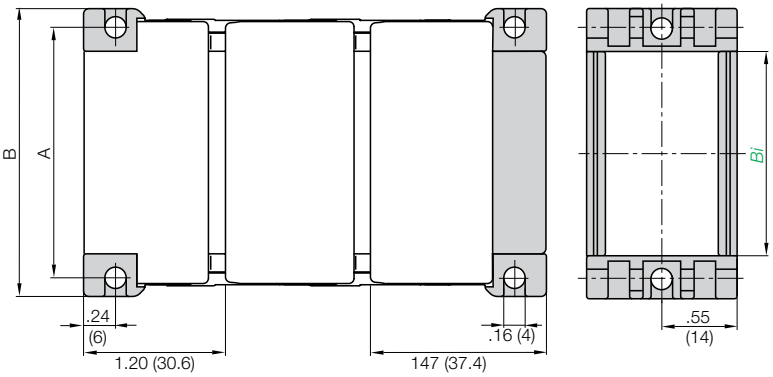
**Part Number Structure**




**Full set, for both ends:**
11800- 020- 14 Full set, **each part with pin/bore**
**Single-part order:**
11800- 020- 1 Mounting bracket **with bore**
11800- 020- 4 Mounting bracket **with pin**

**Fixed end**
**11800...4**

**Moving end**
**11800...1**




| Series | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 117-020 | **11800-020-14** | 1.14 | (29) | 1.42 | (36) |
| 117/118-025 | **11800-025-14** | 1.34 | (34) | 1.61 | (41) |
| 117-038 | **11800-038-14** | 1.85 | (47) | 2.13 | (54) |
| 117/118-048 | **11800-048-14** | 2.24 | (57) | 2.52 | (64) |
| 117-063 | **11800-063-14** | 2.83 | (72) | 3.11 | (79) |
| 117/118-080 | **11800-080-14** | 3.50 | (89) | 3.78 | (96) |
| 117-100 | **11800-100-14** | 4.29 | (109) | 4.57 | (116) |

- **The mounting brackets are supplied with hexagon nuts and can be attached with M4 bolts, or the mounting brackets may also be attached with M4 socket head cap bolts**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R117/R118
# Mounting Brackets - Plastic

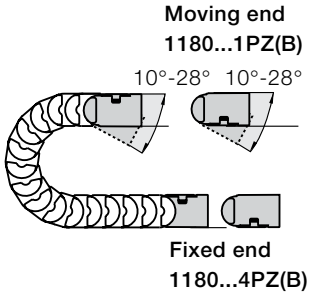


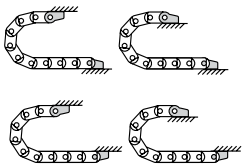
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option: plastic bracket

- For long travels
- Attachment option for strain relief tiewrap plate
- Locked connection to E-Tube
- Minimized external width

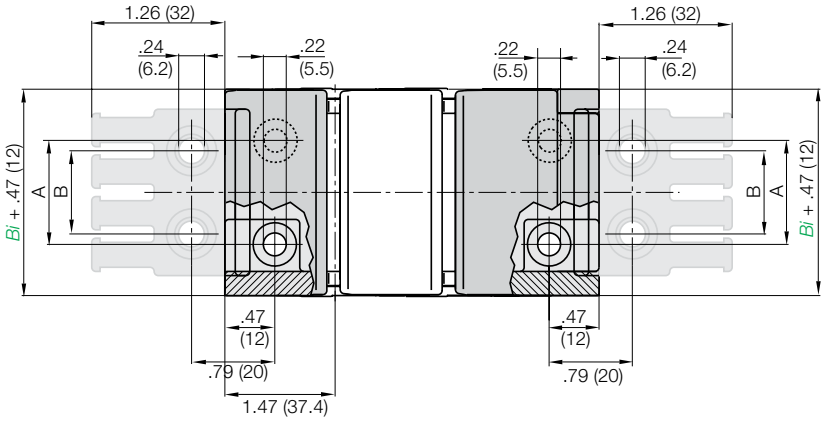




Possible installation configurations -

Moving end
1180...1PZ(B)

Fixed end
1180...4PZ(B)




### Part Number Structure

| 1180- | 048- | 14- | PZB |
|---|---|---|---|

- PZB: With tiewrap plate
- 14-: Complete Set
- 048-: Width
- 1180-: Mounting brackets for selected chain type

**Full set, for both ends:**

1180-048-14 Full set, **each part with pin/bore**

**Single-part order:**

1180-048-1 Mounting bracket **with bore**

1180-048-4 Mounting bracket **with pin**

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series R117/R118:
**1180-Width-14**

**Part No. Mounting bracket with bore**
2 parts, 1 left & 1 right
Series R117/R118:
**1180-Width-1**

**Part No. Mounting bracket with pin**
2 parts, 1 left & 1 right
Series R117/R118:
**1180-Width-4**

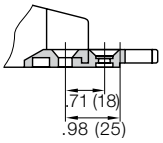
| For Series | Part No. Full Set without Tiewrap Plate | Part No. Full Set with Tiewrap Plate | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| R117/R118-025 | **1180-025-14PZ** | **1180-025-14PZB** | .47 | (12) | .59 | (15) |
| R117-038 | **1180-038-14PZ** | **1180-038-14PZB** | .98 | (25) | .79 | (20) |
| R117/R118-048 | **1180-048-14PZ** | **1180-048-14PZB** | 1.38 | (35) | 1.18 | (30) |
| R117-063 | **1180-063-14PZ** | **1180-063-14PZB** | 1.97 | (50) | 1.57 | (40) |
| R117/R118-080 | **1180-080-14PZ** | **1180-080-14PZB** | 2.64 | (67) | 2.36 | (60) |
| R117-100 | **1180-100-14PZ** | **1180-100-14PZB** | 3.43 | (87) | 3.15 | (80) |

The following parts are required for attachment of the mounting brackets:

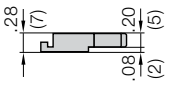
- **Countersunk bolt M5* DIN 912-8.8**
- **Hexagon nut M5 DIN 934-8**
  **4 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

## Tiewrap Plates




Shown assembled

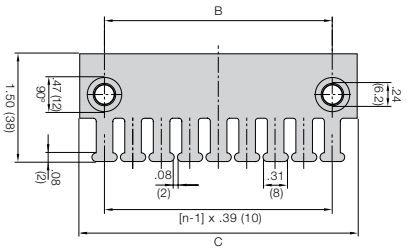



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R157/R158

1.57 1.57

## Price Index

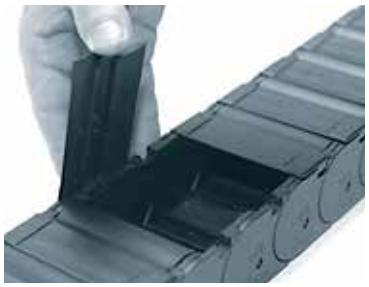
Series R157/R158

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips



Lids of the E-Tube Series R100 are hinged for easy access

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131.2 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If hinged, snap-open accessibility along inner **or** outer radius is required
- If a low-cost, lightweight E-Tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If particularly quiet operation is required
  ➤ **Series R58 E2 Tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R770 E4/100**

## Features & Benefits

1. Effective chip protection even against hot chips
2. Space-efficient with optimized ratio of inner dimension to outer dimension
3. Snap-open lids along the inner and outer radius
4. Snap-open from the side, covered pin/bore connection
5. Double stop dog for strong unsupported length
6. Universal KMA mounting brackets with attachment capability on all sides
7. Lateral glide surfaces for side mounted operation

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

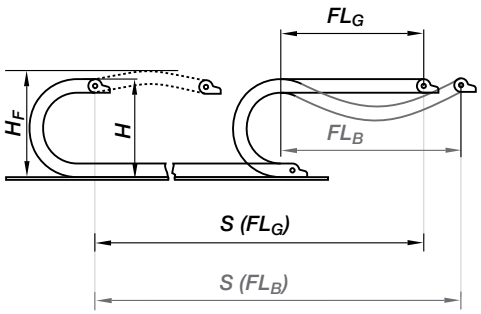
| | |
|---|---|
| 3.28 ft (1 m) **157-088-100-0** | **E-Chain®** |
| With 2 separators **1586-01** assembled every 2nd link | **Interior Separation** |
| 1 Set **15800-088-12** | **Mounting Bracket** |

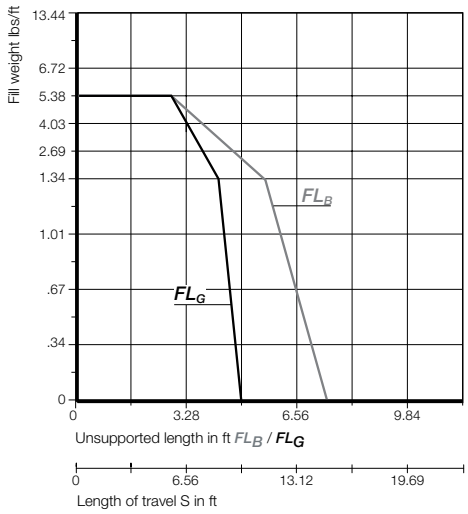
# E-Chain System® E2 Tubes
# Series R157/R158
# Installation Dimensions

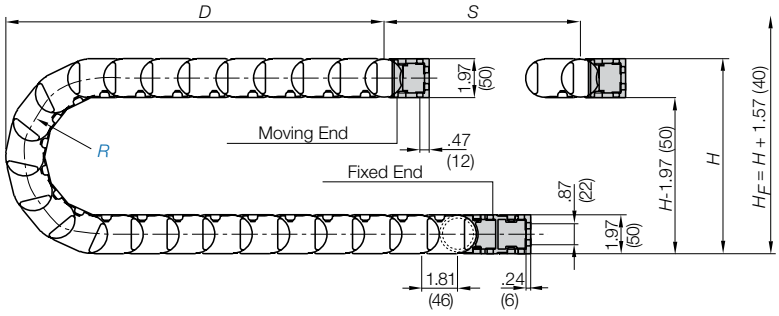


## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with .67 lbs/ft (1.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 7.64 (194) | 8.62 (219) | 9.61 (244) | 10.59 (269) | 11.57 (294) | 13.54 (344) |
| K | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

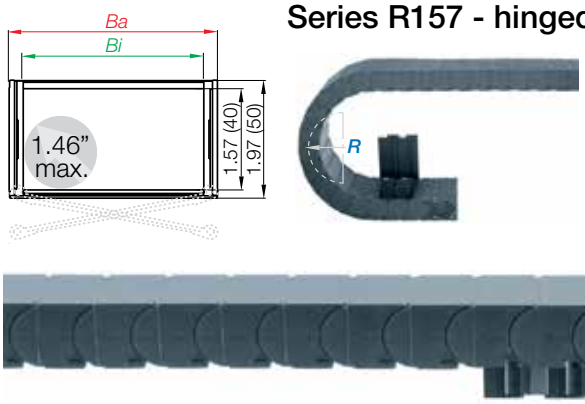
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

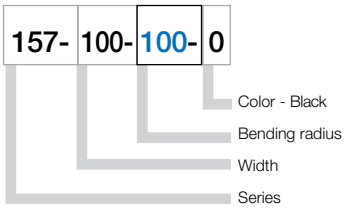
# E-Chain System® E2 Tubes
# Series R157/R158

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

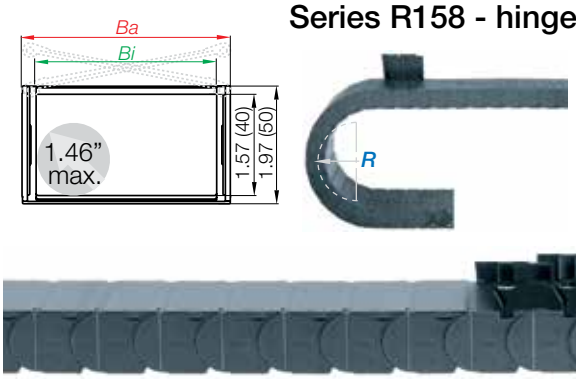
## Series R157 - hinged, snap-open on both sides of the inner radius



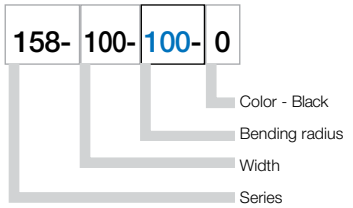

**Part Number Structure**

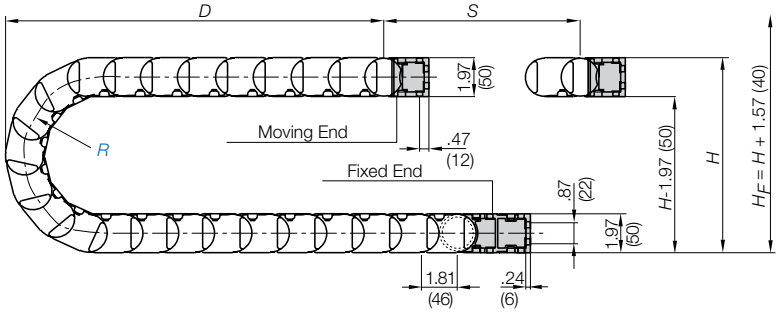



## Series R158 - hinged, snap-open on both sides of the outer radius




**Part Number Structure**




Supplement part number with required radius.
Example: 157-100-[100]-0
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.71 (22)

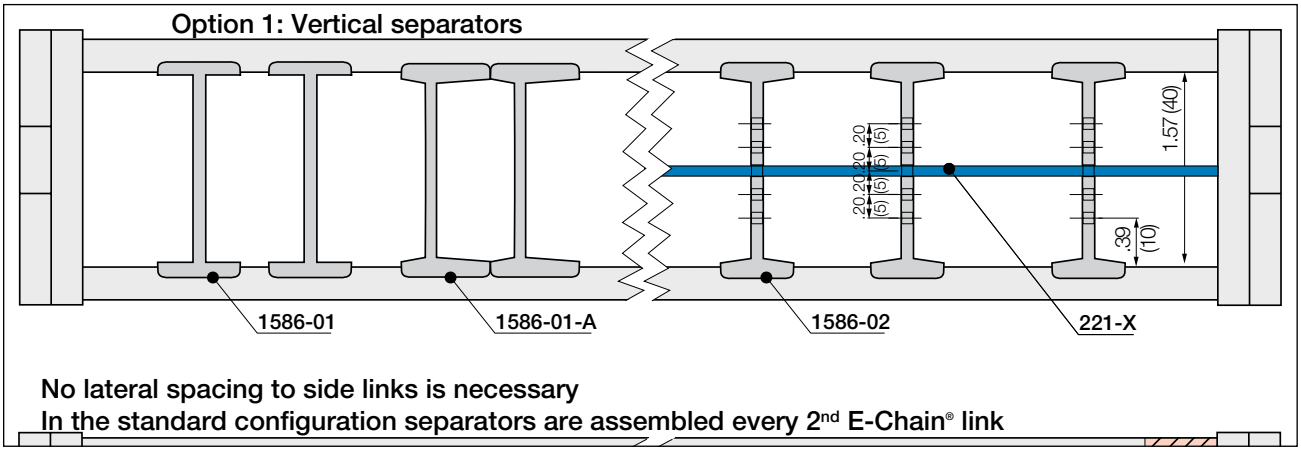
| Part Number. Snap-open inner radius | Snap-open outer radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 157-040-* | 158-040-* | [ ] -0 | 1.57 (40) | 2.20 (56) | ≈ 0.81 (1.21) |
| 157-050- | 158-050- | [ ] -0 | 1.97 (50) | 2.60 (66) | ≈ 0.87 (1.30) |
| 157-075- | 158-075- | [ ] -0 | 2.95 (75) | 3.58 (91) | ≈ 1.01 (1.50) |
| 157-088- | 158-088- | [ ] -0 | 3.46 (88) | 4.09 (104) | ≈ 1.06 (1.57) |
| 157-090-** | 158-090-** | [ ] -0 | 3.46 (88) | 4.09 (104) | ≈ 1.10 (1.63) |
| 157-100- | 158-100- | [ ] -0 | 3.94 (100) | 4.57 (116) | ≈ 1.15 (1.71) |
| 157-125- | 158-125- | [ ] -0 | 4.92 (125) | 5.55 (141) | ≈ 1.29 (1.92) |
| 157-135- | 158-135- | [ ] -0 | 5.31 (135) | 5.91 (150) | ≈ 1.41 (2.10) |
| 157-150- | 158-150- | [ ] -0 | 5.91 (150) | 6.54 (166) | ≈ 1.43 (2.13) |
| 157-175- | 158-175- | [ ] -0 | 6.89 (175) | 7.52 (191) | ≈ 1.57 (2.34) |
| 157-200- | 158-200- | [ ] -0 | 7.87 (200) | 8.50 (216) | ≈ 1.71 (2.55) |

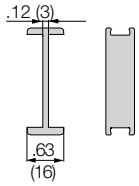
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 157-100-[100]-0

| | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 21.65 (550) |
| D | 7.64 (194) | 8.62 (219) | 9.61 (244) | 10.59 (269) | 11.57 (294) | 13.54 (344) |
| K | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

*Removable lid only, not hinged
**Same dimensions as 157/158-088 - removable lids only

# E-Chain System® E2 Tubes
# Series R157/R158
# Interior Separation - New Generation

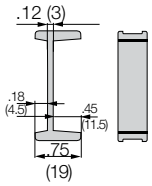





**Separator for E-Tubes**

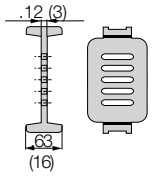
| | |
|---|---|
| Unassembled | **Part No. 1585-01** |
| Assembled | **Part No. 1586-01** |

- **Separator 1585-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses




| | |
|---|---|
| Unassembled | |
| Assembled | |

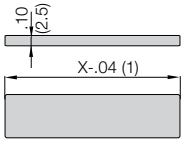
- **Asymmetrical separator 1585-01-A**
  For side-mounted applications. Asymmetrical separator for defined distance. No additional spacers necessary.




**Slotted Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 1585-02** |
| Assembled | **Part No. 1586-02** |

- **Slotted separator 1585-02**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Full width shelf for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.57 | (040) | 220-40 | 221-40 |
| 1.97 | (050) | **220-50** | **221-50** |
| 2.95 | (075) | **220-75** | **221-75** |
| 3.46 | (088) | **220-88** | **221-88** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.94 | (100) | **220-100** | **221-100** |
| 4.92 | (125) | **220-125** | **221-125** |
| 5.31 | (135) | **220-135** | **221-135** |
| 5.91 | (150) | **220-150** | **221-150** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 6.89 | (175) | **220-175** | **221-175** |
| 7.87 | (200) | **220-200** | **221-200** |

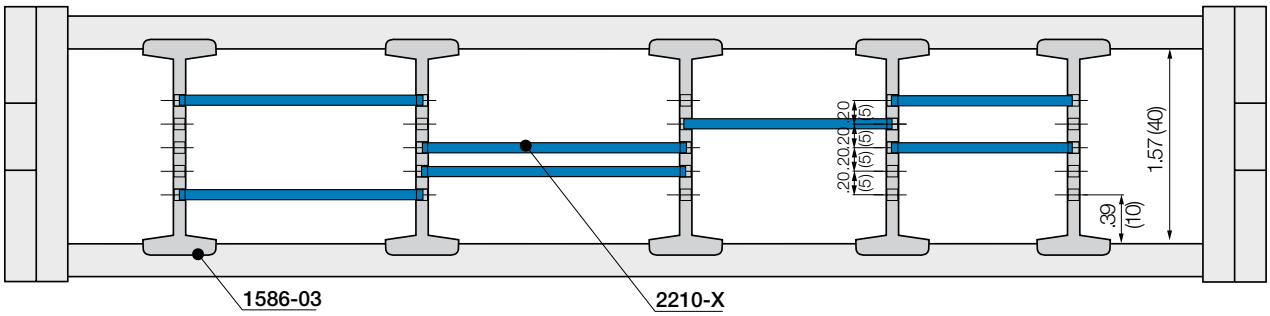
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R157/R158
# Interior Separation - New Generation

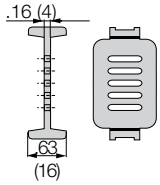


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec




No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link

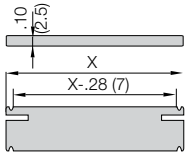



**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 1585-03** |
| Assembled | **Part No. 1586-03** |

- **Slotted separator 1585-03**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |
| 5.87 | (149) | **2200-149** | **2210-149** |

# E-Chain System® E2 Tubes
# Series R157/R158
# Strain Relief

## Separator with integrated strain relief

**Strain relief separator Part No. 1585-01-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

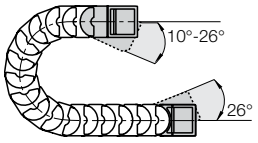
# E-Chain System® E2 Tubes
# Series R157/R158
# Mounting Brackets - KMA Extended

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: KMA pivoting

- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

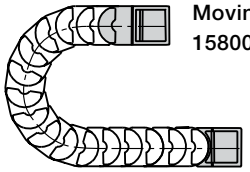
Moving end
15800/15801...1




Fixed end
15800/15801...2

## Option 2: KMA locking

- Extended, locking
- Easy to install
- Flush mounting at both ends of the E-Tube
- Mounting points on all sides
- Corrosion resistant



Moving end
15800/15801...3

Fixed end
15800/15801...4

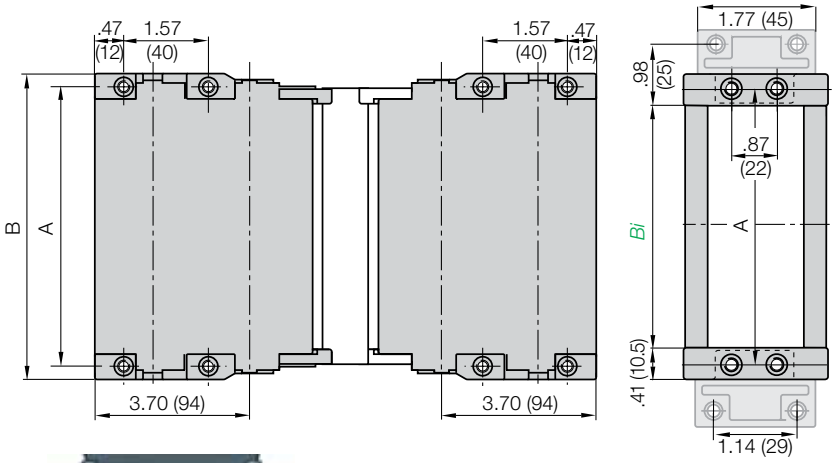
### Part Number Structure

15800- 100- 12

- 12 = Complete Set (12 = Pivoting, 34 = Locking)
- 100- = Width
- 15800- = KMA Pivoting for selected chain type

Moving end
1580...1/1580...3

Fixed end
1580...2/1580...4




**Full set, for both ends:**
15800- 100- 12 Full set, **each part with pin/bore**

**Single-part order:**
15800- 100- 1 Mounting bracket **with bore**
15800- 100- 2 Mounting bracket **with pin**

Quickflange upon request
- Unassembled

**Part number 16800-QF**

| Series | Part No. Full Set | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) |
|---|---|---|---|---|---|
| 157/158-040 | 15801-040- ☐ | 1.97 | (50) | 2.40 | (61) |
| 157/158-050 | 15800-050- ☐ | 2.40 | (60) | 2.80 | (71) |
| 157/158-075 | 15800-075- ☐ | 3.35 | (85) | 3.78 | (96) |
| 157/158-088 | 15800-088- ☐ | 3.86 | (98) | 4.29 | (109) |
| 157/158-090 | 15801-090- ☐ | 3.86 | (98) | 4.29 | (109) |
| 157/158-100 | 15800-100- ☐ | 4.33 | (110) | 4.76 | (121) |
| 157/158-125 | 15800-125- ☐ | 5.31 | (135) | 5.75 | (146) |
| 157/158-135 | 15800-135- ☐ | 5.71 | (145) | 6.14 | (156) |
| 157/158-150 | 15800-150- ☐ | 6.30 | (160) | 6.73 | (171) |
| 157/158-175 | 15800-175- ☐ | 7.28 | (185) | 7.72 | (196) |
| 157/158-200 | 15800-200- ☐ | 8.27 | (210) | 8.70 | (221) |

☐ = 12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 15800-100-34

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  **M5* DIN 912-8.8**
  **8 pieces/set**
- **Washer**
  **5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut**
  **M5 DIN 934-8**
  **8 pieces/set**

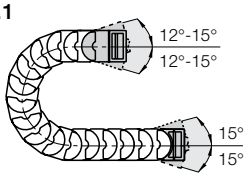
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

# E-Chain System® E2 Tubes
# Series R157/R158
# Mounting Brackets - KMA Abbreviated

## Option 1: KMA pivoting

- Extended, pivoting
- Easy to install
- Universal use
- Corrosion-resistant
- Long travels with lowered mounting height possible

Moving end
1580...1

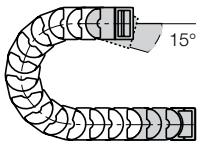



Fixed end
1580...2

## Option 2: KMA locking

- Extended, locking
- Easy to install
- Flush mounting at both ends of the E-Tube
- Mounting points on all sides
- Corrosion resistant

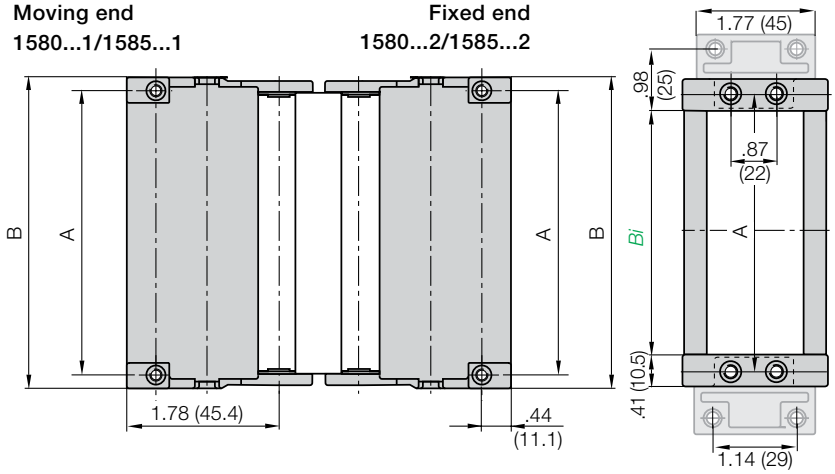
Moving end
1585...1



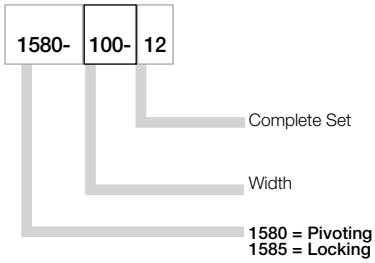

Fixed end
1585...2

Moving end
1580...1/1585...1

Fixed end
1580...2/1585...2




### Part Number Structure




**Part number examples are shown for pivoting brackets.**
**For locking brackets change part number to 1585**

**Full set, for both ends:**
1580- 100- 12 Full set, **each part with pin/bore**

**Single-part order:**
1580- 100- 1 Mounting bracket **with bore**
1580- 100- 2 Mounting bracket **with pin**

Quickflange upon request
- Unassembled

**Part number 16800-QF**

| Series | Part No. Full Set | | Dimension A | | Dimension B | |
|---|---|---|---|---|---|---|
| | Pivoting | Locking | in. | (mm) | in. | (mm) |
| 157/158-040 | **1580-040-12** | **1585-040-12** | 1.97 | (50) | 2.40 | (61) |
| 157/158-050 | **1580-050-12** | **1585-050-12** | 2.40 | (60) | 2.80 | (71) |
| 157/158-075 | **1580-075-12** | **1585-075-12** | 3.35 | (85) | 3.78 | (96) |
| 157/158-088 | **1580-088-12** | **1585-088-12** | 3.86 | (98) | 4.29 | (109) |
| 157/158-090 | **1580-090-12** | **1585-090-12** | 3.86 | (98) | 4.29 | (109) |
| 157/158-100 | **1580-100-12** | **1585-100-12** | 4.33 | (110) | 4.76 | (121) |
| 157/158-125 | **1580-125-12** | **1585-125-12** | 5.31 | (135) | 5.75 | (146) |
| 157/158-135 | **1580-135-12** | **1585-135-12** | 5.71 | (145) | 6.14 | (156) |
| 157/158-150 | **1580-150-12** | **1585-150-12** | 6.30 | (160) | 6.73 | (171) |
| 157/158-175 | **1580-175-12** | **1585-175-12** | 7.28 | (185) | 7.72 | (196) |
| 157/158-200 | **1580-200-12** | **1585-200-12** | 8.27 | (210) | 8.70 | (221) |

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  **M5* DIN 912-8.8**
  **8 pieces/set**
- **Washer**
  **5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut**
  **M5 DIN 934-8**
  **8 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R167/R168

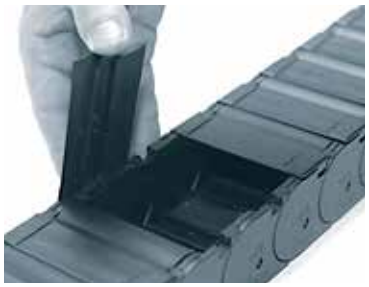
1.97 1.97

Series R167/R168

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB



Lids of the E-Tube Series R100 are hinged for easy access

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

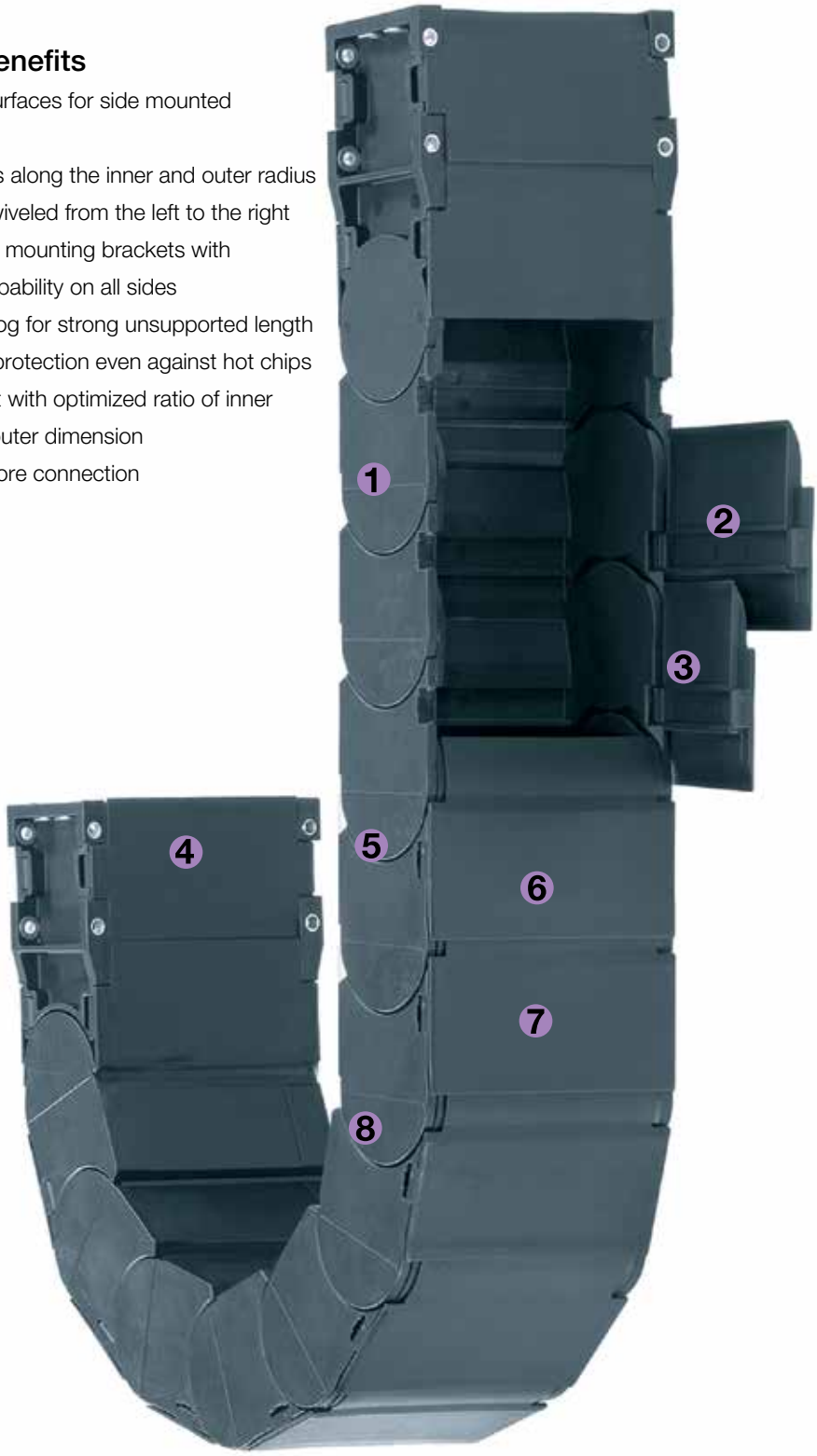
## Usage Guidelines

- If snap-open accessibility along inner  outer radius is required
- If a low-cost, lightweight E-Tube for many types of applications is required
- If flush attachment is required
- If chip-repellent features are required

- If very smooth travel due to small pitch is required
  ➤ **Series R68 E2 Tubes**
- If snap-open accessibility along both radii simultaneously is required
  ➤ **Series R780 E4/100**

## Features & Benefits

1. Lateral glide surfaces for side mounted operation
2. Snap-open lids along the inner and outer radius
3. Lids can be swiveled from the left to the right
4. Universal KMA mounting brackets with attachment capability on all sides
5. Double stop dog for strong unsupported length
6. Effective chip protection even against hot chips
7. Space-efficient with optimized ratio of inner dimension to outer dimension
8. Covered pin/bore connection




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **167-100-100-0** | **E-Chain®** |
| With 2 separators **1686-01** assembled every 2nd link | **Interior Separation** |
| 1 Set **1680-100-12** | **Mounting Bracket** |

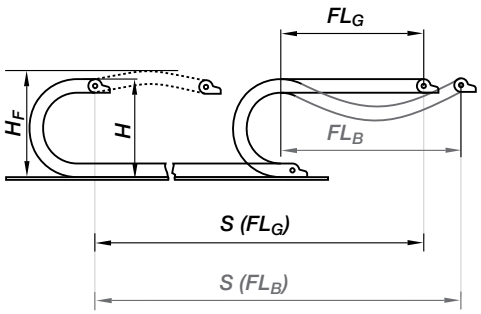
# E-Chain System® E2 Tubes
# Series R167/R168
# Installation Dimensions

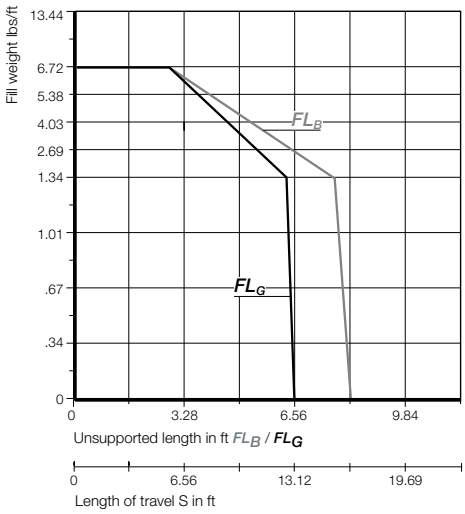


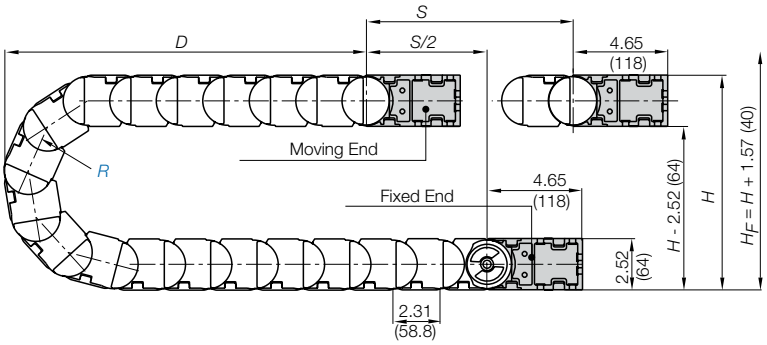
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 2.31" (58.8 mm)
**Links per ft (m): =** 5.18 (17)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|
| H | 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 20.24 (514) | 22.20 (564) | 26.14 (664) |
| D | 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) | 13.58 (345) | 14.57 (370) | 16.54 (420) |
| K | 17.12 (435) | 20.28 (515) | 23.23 (590) | 26.38 (670) | 29.53 (750) | 32.48 (825) | 35.63 (905) | 41.93 (1065) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 1.64 ft/s (0.5 m/s) / max. 16.4 ft/s² (5 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

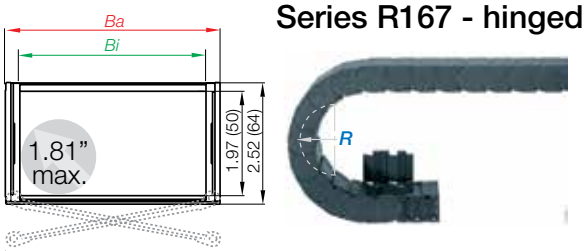
# E-Chain System® E2 Tubes
# Series R167/R168



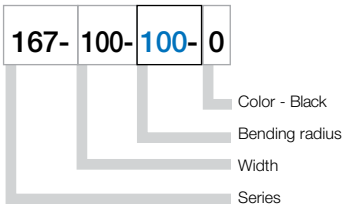
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

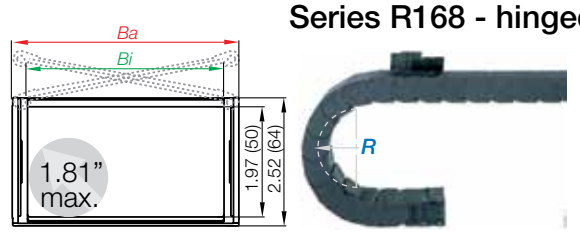
## Series R167 - hinged, snap-open on both sides of the inner radius



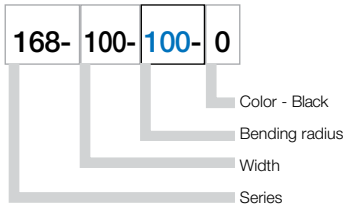
**Part Number Structure**

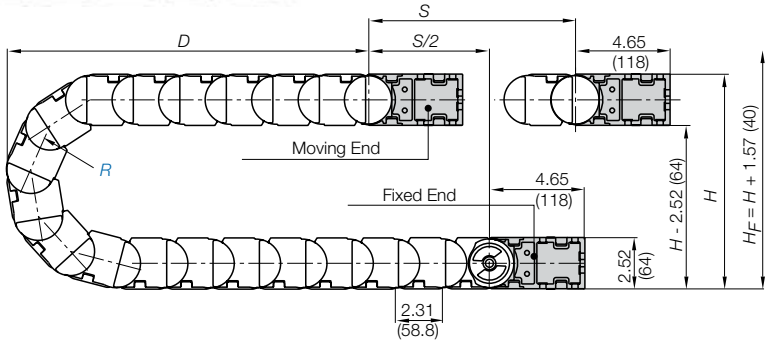



## Series R168 - hinged, snap-open on both sides of the outer radius



**Part Number Structure**



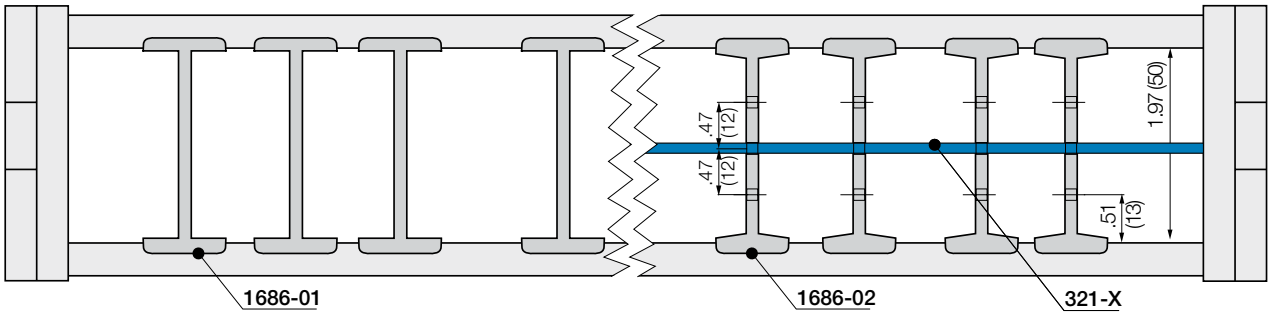

Supplement part number with required radius.
Example: 167-100-[100]-0
Pitch: 2.31 in. (58.8 mm) per link links/ft (m) = 5.18 (17)

| Part Number. Snap-open inner radius | Snap-open outer radius | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 167-050- | 168-050- | [ ] -0 | 1.97 (50) | 2.68 (68) | ≈ 1.06 (1.58) |
| 167-075- | 168-075- | [ ] -0 | 2.95 (75) | 3.66 (93) | ≈ 1.24 (1.84) |
| 167-100- | 168-100- | [ ] -0 | 3.94 (100) | 4.65 (118) | ≈ 1.40 (2.09) |
| 167-115- | 168-115- | [ ] -0 | 4.53 (115) | 5.24 (133) | ≈ 1.51 (2.24) |
| 167-125- | — | [ ] -0 | 4.92 (125) | 5.63 (143) | ≈ 1.58 (2.35) |
| 167-150- | 168-150- | [ ] -0 | 5.91 (150) | 6.61 (168) | ≈ 1.75 (2.60) |
| 167-175- | 168-175- | [ ] -0 | 6.89 (175) | 7.60 (193) | ≈ 1.92 (2.86) |
| 167-200- | 168-200- | [ ] -0 | 7.87 (200) | 8.58 (218) | ≈ 2.09 (3.11) |
| 167-225- | — | [ ] -0 | 8.86 (225) | 9.57 (243) | ≈ 2.26 (3.37) |
| 167-250- | — | [ ] -0 | 9.84 (250) | 10.55 (268) | ≈ 2.43 (3.62) |

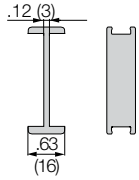
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 167-100-[100]-0

| 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 20.24 (514) | 22.20 (564) | 26.14 (664) |
| 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) | 13.58 (345) | 14.57 (370) | 16.54 (420) |
| 17.12 (435) | 20.28 (515) | 23.23 (590) | 26.38 (670) | 29.53 (750) | 32.48 (825) | 35.63 (905) | 41.93 (1065) |

# E-Chain System® E2 Tubes
# Series R167/R168
# Interior Spearation



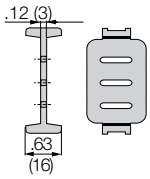

No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 1685-01** |
| Assembled | **Part No. 1686-01** |

- **Separator 1685-01**
  For vertical separation with wide base for maximum stability when used with thick cables or hoses

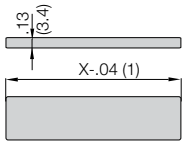



**Slotted Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 1685-02** |
| Assembled | **Part No. 1686-02** |

- **Slotted separator 1685-02**
  is used when vertical subdivision is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves - for the standard interior separation




**Full width shelf for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 320-X** |
| Assembled | **Part No. 321-X** |

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 3 different heights in .47" (12mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **320-50** | **321-50** |
| 2.95 | (75) | **320-75** | **321-75** |
| 4.53 | (115) | **320-115** | **321-115** |

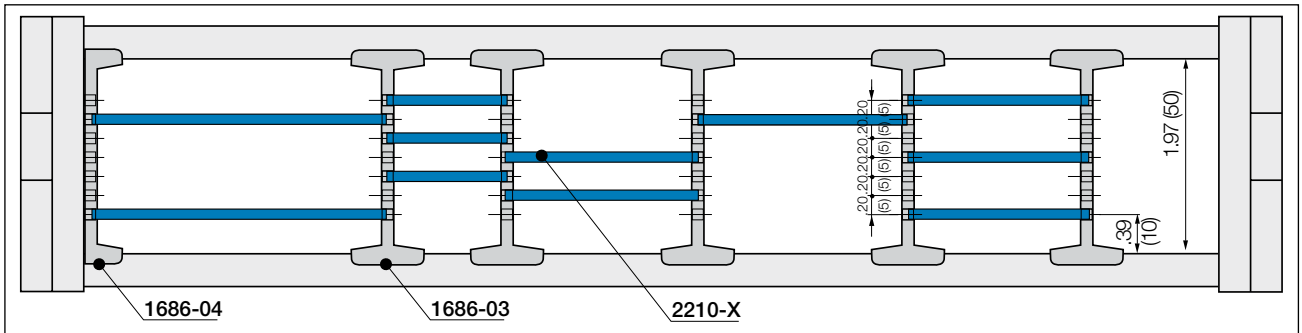
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 4.92 | (125) | **320-125** | **321-125** |
| 5.91 | (150) | **320-150** | **321-150** |
| 6.89 | (175) | **320-175** | **321-175** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 7.87 | (200) | **320-200** | **321-200** |
| 8.86 | (225) | **320-225** | **321-225** |
| 9.84 | (250) | **320-250** | **321-250** |

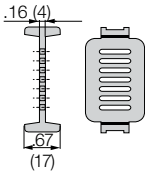
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R167/R168
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



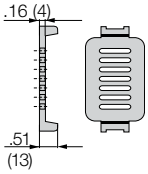

No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 1685-03** |
| Assembled | **Part No. 1686-03** |

- **Middle plate 1685-03**
  To achieve modular separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.

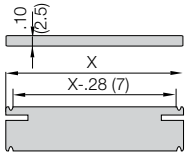



**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 1685-04** |
| Assembled | **Part No. 1686-04** |

- **Side plate 1685-04**
  For use with shelf 2200-X and middle plate 1685-03

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |
| 5.87 | (149) | **2200-149** | **2210-149** |

## Separator with integrated strain relief

**Strain relief separator Part No. 1685-01-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

# E-Chain System® E2 Tubes
# Series R167/R168
# Mounting Brackets - KMA Extended

## Option 1: pivoting

- Unsupported and gliding applications
- Mounting points on all sides
- Quickflange Option, bolted outside of E-Tube cross section
- Long travels with lowered mounting height possible
- Corrosion-resistant

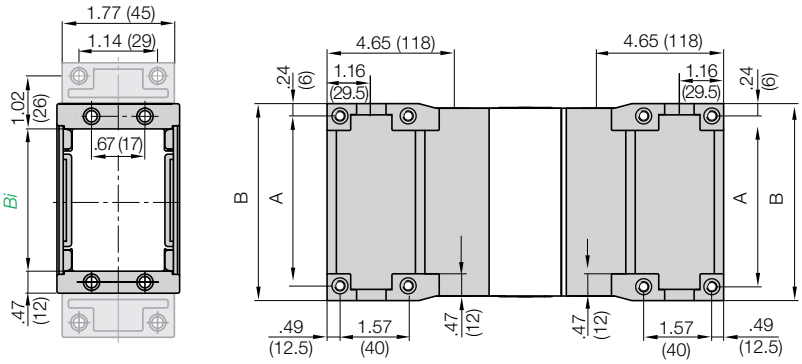
## Option 2: locking

- Vertical hanging/standing applications
- Quickflange Option, bolted outside of E-Tube cross section
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube

### Part Number Structure

1680- 100- 12 QF

- With Quickflange
- Complete Set
  **12 = Pivoting**
  **14 = Locking**
- Width
- Mounting brackets for selected chain type




**Full set, for both ends:**

1680-100-12 QF Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

1680-100-1 QF Mounting bracket **with bore + tiewrap plate**

1680-100-2 QF Mounting bracket **with pin + tiewrap plate**

Quickflange Unassembled
**Part number 16800-QF**

| For Tube Type | Part No. Full set with Tiewrap Plate | Part No. Full Set with Quickflange | Dimension A in. | Dimension A (mm) | Dimension B in. | Dimension B (mm) |
|---|---|---|---|---|---|---|
| 167/168-050 | 1680-050-☐ | 1680-050-☐ QF | 2.44 | (62) | 2.91 | (74) |
| 167/168-075 | 1680-075-☐ | 1680-075-☐ QF | 3.43 | (87) | 3.90 | (99) |
| 167/168-100 | 1680-100-☐ | 1680-100-☐ QF | 4.41 | (112) | 4.88 | (124) |
| 167/168-115 | 1680-115-☐ | 1680-115-☐ QF | 5.00 | (127) | 5.47 | (139) |
| 167/168-125 | 1680-125-☐ | 1680-125-☐ QF | 5.39 | (137) | 5.87 | (149) |
| 167/168-150 | 1680-150-☐ | 1680-150-☐ QF | 6.38 | (162) | 6.85 | (174) |
| 167/168-175 | 1680-175-☐ | 1680-175-☐ QF | 7.36 | (187) | 7.83 | (199) |
| 167/168-200 | 1680-200-☐ | 1680-200-☐ QF | 8.35 | (212) | 8.82 | (224) |
| 167/168-225 | 1680-225-☐ | 1680-225-☐ QF | 9.33 | (237) | 9.80 | (249) |
| 167/168-250 | 1680-250-☐ | 1680-250-☐ QF | 10.31 | (262) | 10.79 | (274) |

☐ = 12 or 14

For pivoting brackets choose 12
For locking brackets choose 14
Example: 1680-100-14 QF

The following parts are required for attachment of the mounting brackets:
* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R48

.98

## Price Index

Series R48

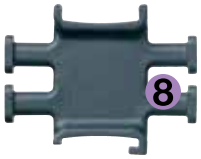
## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Removable lids along the outer radius
4. Small pitch for low-noise, smooth operation
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Strain relief separator option: Separator with integrated strain relief for use in the first or last chain link ➤ **Strain Relief, Chapter 10**




## Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 13.12 ft (4 m) |
| Side-mounted, unsupp. ≤ 4.92 ft (1.5 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip repellent features are required

- If a particularly low-cost solution is the main factor
  ➤ **Series R117/R118 E2 Tubes**
- If no chip protection is required
  ➤ **Series 250 E2 Medium**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

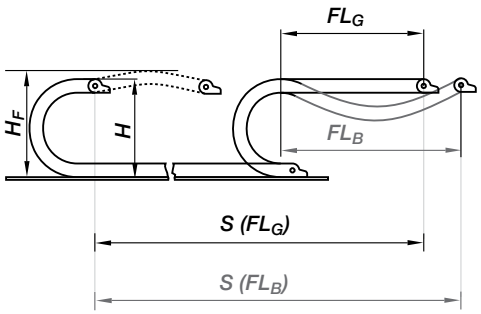
| | |
|---|---|
| 3.28 ft (1 m) **48-075-060-0** | **E-Chain®** |
| With 2 separators **482** assembled every 2nd link | **Interior Separation** |
| 1 Set **480-075-12** | **Mounting Bracket** |

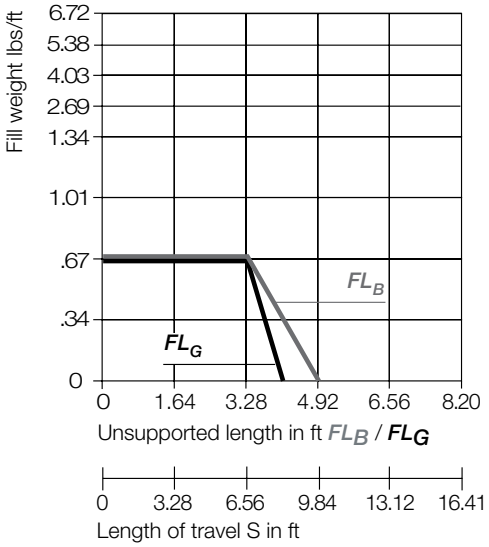
# E-Chain System® E2 Tubes
# Series R48
# Installation Dimensions

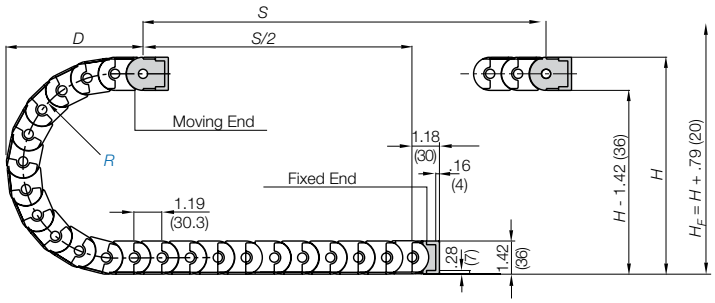
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.19" (30.3 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

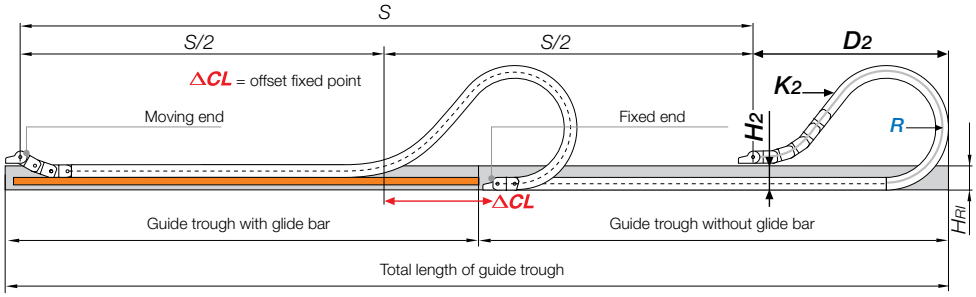
The required clearance height: ***HF = H* + .79 in. (20 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.36 (060) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H | 6.14 (156) | 7.32 (186) | 9.29 (236) | 11.26 (286) | 13.23 (336) | 15.20 (386) | 17.17 (436) | 21.10 (536) |
| D | 4.84 (123) | 5.43 (138) | 6.42 (163) | 7.40 (188) | 8.39 (213) | 9.37 (238) | 10.35 (263) | 12.32 (313) |
| K | 9.84 (250) | 11.81 (300) | 14.76 (375) | 17.91(455) | 21.06 (535) | 24.21 (615) | 27.17 (690) | 33.46 (850) |

## For long travels with lowered mounting height

**Long travel lengths from 16.41 ft. (5 m) to max. 164 ft. (50 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K2$




| R | 2.36 (060) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| H | 6.14 (156) | 7.32 (186) | 6.93 (176) | 6.93 (176) | 6.93 (176) | 6.93 (176) | 6.93 (176) | * |
| D | 4.33 (110) | 4.92 (125) | 12.99 (330) | 17.72 (450) | 24.02 (610) | 28.74 (730) | 27.16 (690) | * |
| K | 9.84 (250) | 11.81 (300) | 21.46 (545) | 29.84 (758) | 38.19 (970) | 45.31 (1151) | 46.54 (1182) | * |
| ΔCL | * | * | 6.69 (170) | 10.63 (270) | 14.96 (380) | 18.50 (470) | * | * |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
HF = Required clearance height

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

## Technical Data

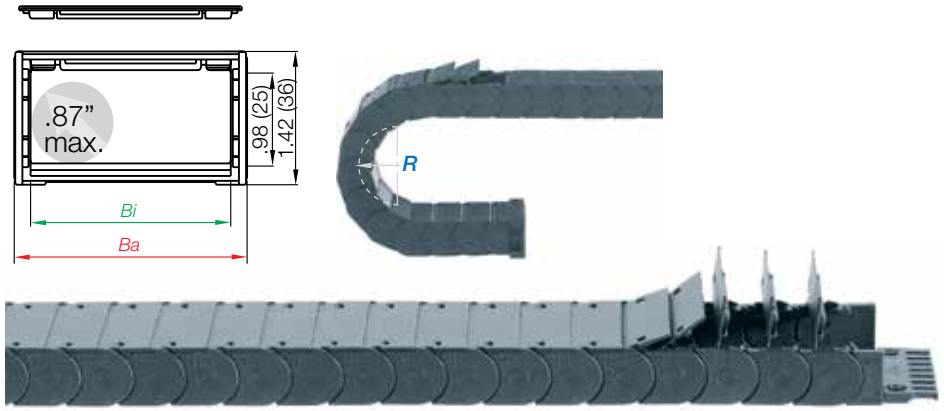
Details of material properties

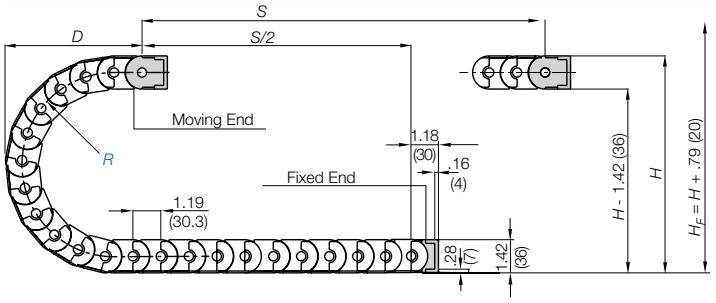
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

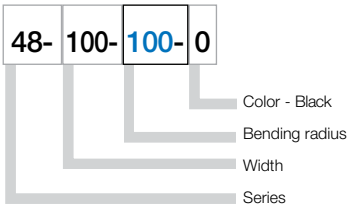
# E-Chain System® E2 Tubes
# Series R48

## Series R48 - E-Tube snap-open along the outer radius




**Part Number Structure**



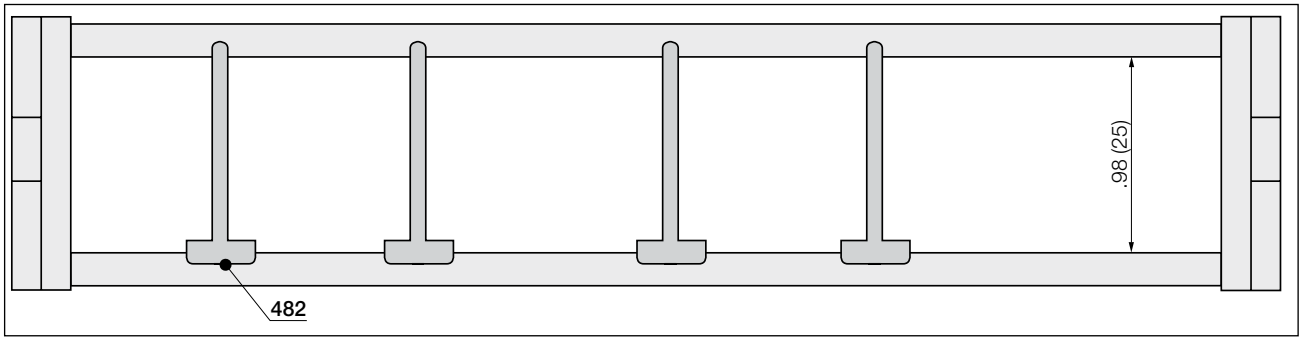

Supplement part number with required radius. Example: R48-100-100-0
Pitch: 1.19 in. (30.3 mm) per link links/ft (m) = 10.06 (33)

| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 48-025- | | -0 | .98 (25) | 1.42 (36) | ≈ 0.43 (0.64) |
| 48-050- | | -0 | 1.97 (50) | 2.40 (61) | ≈ 0.56 (0.84) |
| 48-075- | | -0 | 2.95 (75) | 3.39 (86) | ≈ 0.69 (1.03) |
| 48-100- | | -0 | 3.94 (100) | 4.37 (111) | ≈ 0.83 (1.23) |
| 48-130- | | -0 | 5.12 (130) | 5.55 (141) | ≈ 0.98 (1.46) |

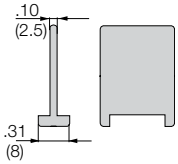
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R48-100-100-0

| | 060 | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|
| R | 2.36 (060) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| H | 6.14 (156) | 7.32 (186) | 9.29 (236) | 11.26 (286) | 13.23 (336) | 15.20 (386) | 17.17 (436) | 21.10 (536) |
| D | 4.84 (123) | 5.43 (138) | 6.42 (163) | 7.40 (188) | 8.39 (213) | 9.37 (238) | 10.35 (263) | 12.32 (313) |
| K | 9.84 (250) | 11.81 (300) | 14.76 (375) | 17.91(455) | 21.06 (535) | 24.21 (615) | 27.17 (690) | 33.46 (850) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec




**No lateral spacing to side links is necessary.**
**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 481** |
| Assembled | **Part No. 482** |

- **Standard separator 481**
  Vertical separators are used if a vertical subdivision of the E-Tube is required. By standard vertical separators are assembled every other E-Tube link.

## Separator with integrated strain relief

**Strain relief separator Part No. 481-ZR** can be integrated into the mounting bracket and can be placed there at any point of the E-Tube®. It combines strain relief and interior separation, it can be installed on the first or last E-Tube® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R48
# Mounting Bracket - Plastic



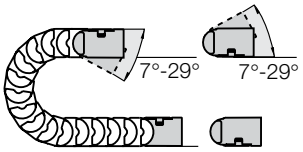
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

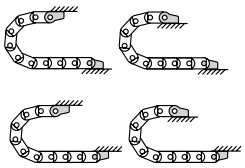
## Option 1: Plastic

- Attachment option for strain relief tiewrap plate
- Locked connection to E-Tube
- Minimized external width

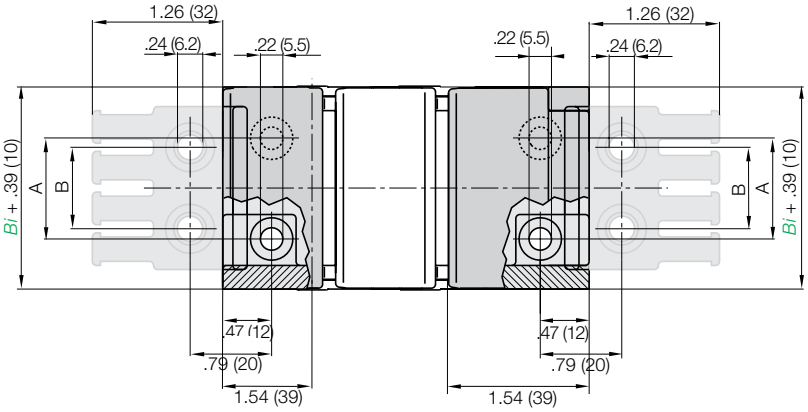
**Moving end**
**4800...1**




**Fixed end**
**4800...2**



Possible installation configurations -




### Part Number Structure

4800- | 025- | 12- | PZB

- PZB: With tiewrap plate
- 12-: Complete Set
- 025-: Width
- 4800-: Mounting brackets for selected chain type

**Full set, for both ends:**

4800-025-12 Full set, **each part with pin/bore**

**Single-part order:**

4800-025-1 Mounting bracket **with bore**

4800-025-2 Mounting bracket **with pin**

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series R48:
**4800-Width-12**

**Part No. Mounting bracket with bore**
2 parts, 1 left & 1 right
Series R48:
**4800-Width -1**

**Part No. Mounting bracket with pin**
2 parts, 1 left & 1 right
Series R48:
**4800-Width-2**

| For Series | Part No. Full Set | Part No. Full Set with Tiewrap Plate | Dimension A in. | (mm) | Dimension B in. | (mm) | Number of teeth |
|---|---|---|---|---|---|---|---|
| 48-025 | **4800-025-12** | **4800-025-12PZB** | .47 | (12) | .59 | (15) | 3 |
| 48-050 | **4800-050-12** | **4800-050-12PZB** | 1.46 | (37) | 1.18 | (30) | 5 |
| 48-075 | **4800-075-12** | **4800-075-12PZB** | 2.44 | (62) | 2.36 | (60) | 8 |
| 48-100 | **4800-100-12** | **4800-100-12PZB** | 3.43 | (87) | 3.15 | (80) | 10 |
| 48-130 | **4800-130-12** | **4800-130-12PZB** | 4.61 | (117) | – | – | – |

The following parts are required for attachment of the mounting brackets:

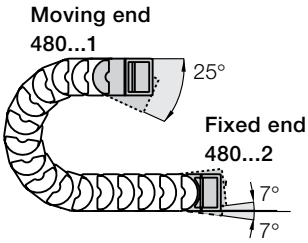
- **Socket head cap bolt M5* DIN 912-8.8**
  **4 pieces/set**
- **Washer 5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut M5 DIN 934-8**
  **4 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

# E-Chain System® E2 Tubes
# Series R48
# Mounting Bracket - KMA

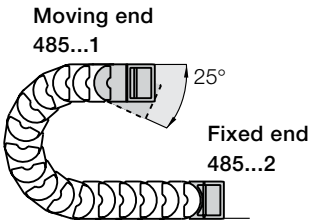
## Option 1: KMA pivoting

- Attachment points on all sides
- Corrosion resistant

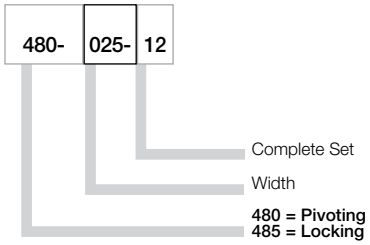


## Option 2: KMA locking

- Vertical hanging, standing travel
- Attachment points on all sides
- Corrosion resistant



### Part Number Structure



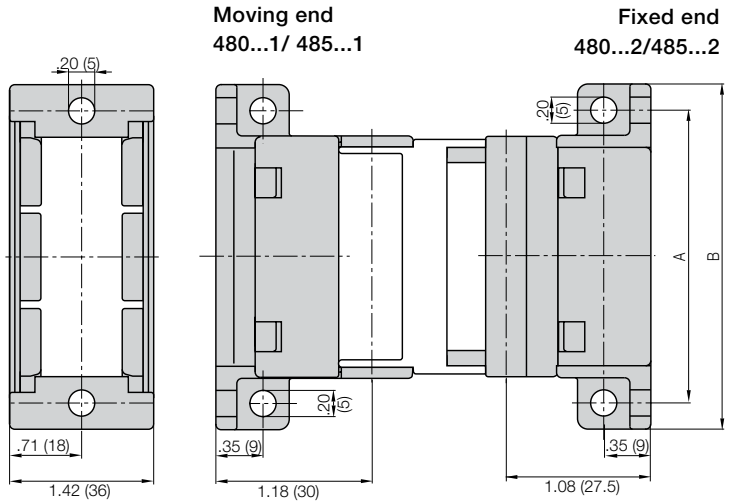

**Full set, for both ends:**

480- 025- 12 Full set, **each part with pin/bore**

**Single-part order:**

480- 025- 1 Mounting bracket **with bore**

480- 025- 2 Mounting bracket **with pin**




| Width | Part No. Full Set | | | Dimension A | | Dimension B | |
|---|---|---|---|---|---|---|---|
| | Pivoting | Locking | | in. | (mm) | in. | (mm) |
| -025 | 480 | 485 | -025-12 | 1.77 | (45) | 2.17 | (55) |
| -050 | 480 | 485 | -050-12 | 2.76 | (70) | 3.15 | (80) |
| -075 | 480 | 485 | -075-12 | 3.74 | (95) | 4.13 | (105) |
| -100 | 480 | 485 | -100-12 | 4.72 | (120) | 5.12 | (130) |
| -130 | 480 | 485 | -130-12 | 5.91 | (150) | 6.30 | (160) |

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  **4 pieces/set**
- **Washer 5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut M5 DIN 934-8**
  **4 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

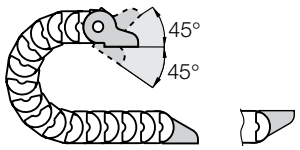
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

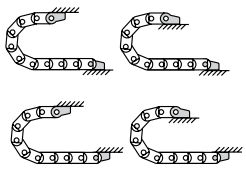
# E-Chain System® E2 Tubes
# Series R48
# Mounting Bracket - Steel

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

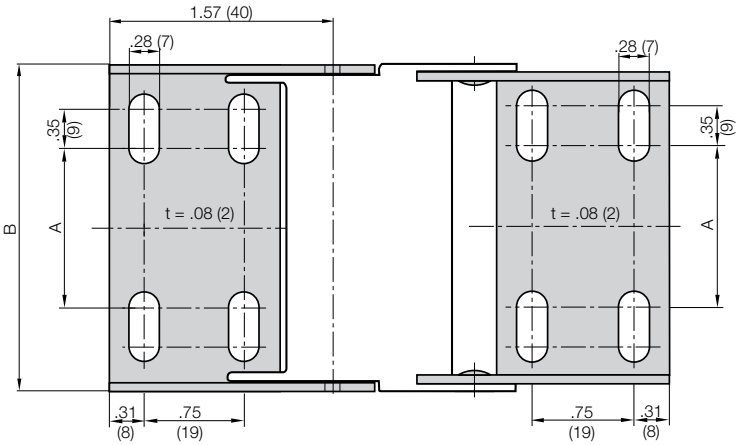
## Option 1: Steel

- Locked connection to E-Tube
- Electrically conductive
- Minimized external width





Possible installation configurations -




**Full set, for both ends:**

| | | | |
|---|---|---|---|
| 482- | 025- | 12 | Full set, **each part with pin/bore** |

**Single-part order:**

| | | | |
|---|---|---|---|
| 482- | 025- | 1 | Mounting bracket **with bore** |
| 482- | 025- | 2 | Mounting bracket **with pin** |

| For Series | Part No. Full Set | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|
| 48-025 | **482-025-12** | | – | 1.38 | (35) |
| 48-050 | **482-050-12** | .87 | (22) | 2.36 | (60) |
| 48-075 | **482-075-12** | 1.85 | (47) | 3.35 | (85) |
| 48-100 | **482-100-12** | 2.83 | (72) | 4.33 | (110) |
| 48-130 | **482-130-12** | 4.02 | (102) | 5.51 | (140) |

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt M5* DIN 912-8.8**
  **4 pieces/set**
- **Washer 5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut M5 DIN 934-8**
  **4 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

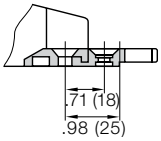
**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series R48:
**482-Width-12**

**Part No. Mounting bracket with bore**
2 parts, 1 left & 1 right
Series R48:
**482-Width -1**

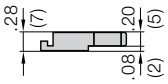
**Part No. Mounting bracket with pin**
2 parts, 1 left & 1 right
Series R48:
**482-Width-2**

# E-Chain System® E2 Tubes
# Series R48
# Strain Relief

## Tiewrap Plates




Shown assembled

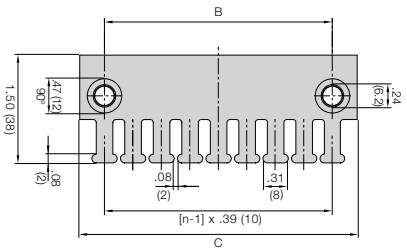



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component that can be fixed external to the mounting bracket.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




**For more information please refer to strain relief section of Chapter 10**

### Cable tiewraps as individual parts

| Cable tiewraps | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| 100 pieces/bag | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R58



## Price Index

Series R58

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

## Other Installation Methods

- Vertical, hanging ≤ 164 ft (50 m)
- Vertical, standing ≤ 13.12 ft (4 m)
- Side-mounted, unsupp. ≤ 6.56 ft (2 m)
- Rotary requires further calculation

## Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R157/R158 E2 Tubes**
- If no chip protection is required
  ➤ **Series 250 E2 Medium**

## Features & Benefits

1. Protection for cables and hoses against hot chips
2. Large pins for high stability
3. Removable lids along the outer radius
4. Small pitch for low-noise, smooth operation
5. KMA mounting brackets with attachment capabilities on all sides
6. Smooth, chip-repellent exterior
7. Fully enclosed
8. Small pitch enable very small radii
9. Integrated strain relief available especially for E-Tubes

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

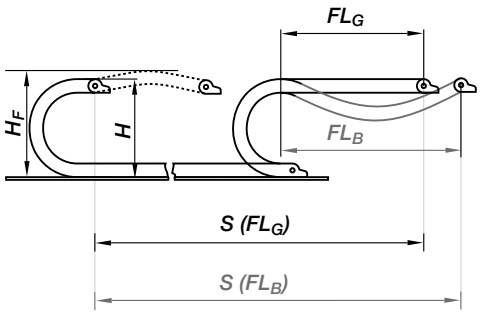
| | |
|---|---|
| 3.28 ft (1 m) **58-100-100-0** | **E-Chain®** |
| With 2 separators **582** assembled every 2nd link | **Interior Separation** |
| 1 Set **580-100-12** | **Mounting Bracket** |

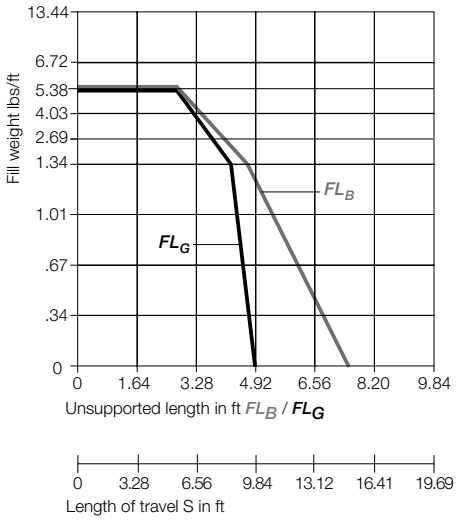
# E-Chain System® E2 Tubes
# Series R58
# Installation Dimensions

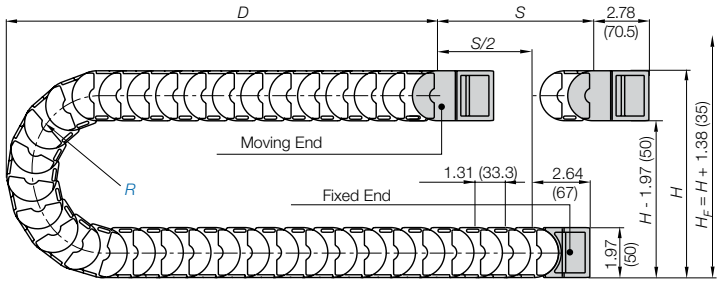
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.31" (33.3 mm)
**Links per ft (m): =** 9.14 (30)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H$ **+ 1.38 in. (35 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 10.83 (275) | 12.80 (325) |
| K | 12.96 (305) | 15.16 (385) | 18.11 (460) | 21.26 (540) | 27.36 (695) | 33.66 (855) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

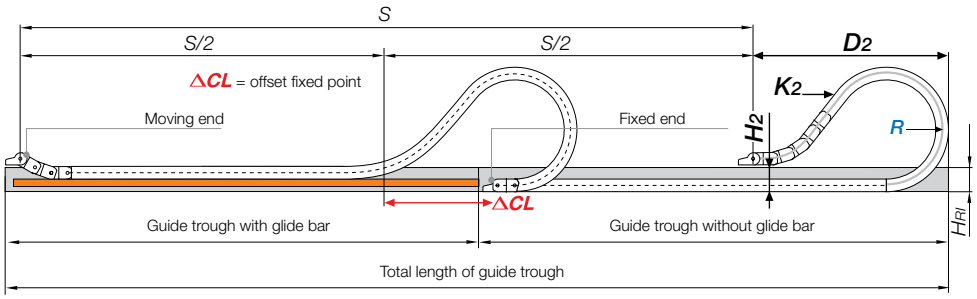
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K = π • R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 246 ft. (75 m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| $H_2$ | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ | 5.91 (150) | 12.20 (310) | 14.96 (380) | 18.90 (480) | 31.50 (800) | 41.34 (1050) |
| $K_2$ | 14.76 (375) | 19.69 (500) | 27.52 (699) | 34.09 (866) | 49.80 (1265) | 65.55 (1665) |
| ΔCL | – | 4.80 (122) | 6.57 (167) | 9.72 (247) | 20.16 (512) | 28.23 (717) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties

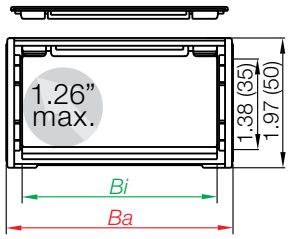
➤ Chapter 1

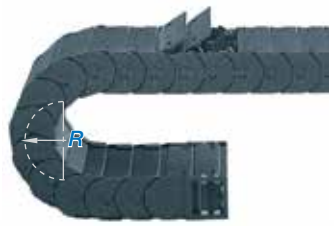
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R58

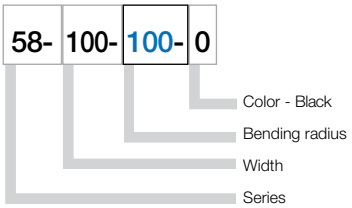
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

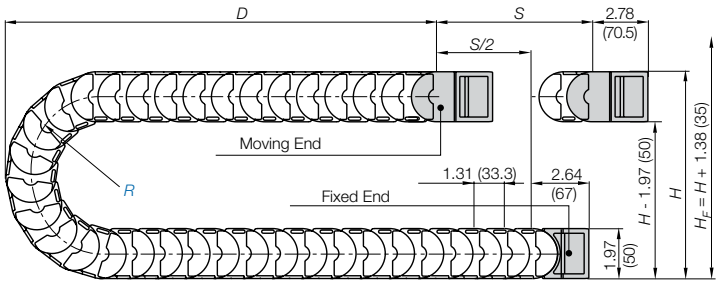
## Series R58 - E-Tube snap-open along the outer radius



**Part Number Structure**



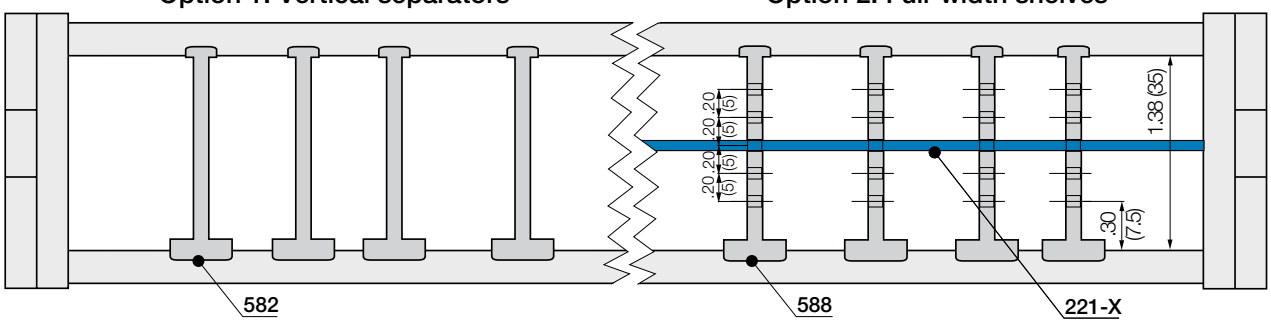

Supplement part number with required radius. Example: R58-100-100-0
Pitch: 1.31 in. (33.3 mm) per link links/ft (m) = 9.14 (30)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 58-050- | | -0 | 1.97 (50) | 2.60 (66) | ≈ 1.01 (1.50) |
| 58-075- | | -0 | 2.95 (75) | 3.58 (91) | ≈ 1.19 (1.77) |
| 58-100- | | -0 | 3.94 (100) | 4.57 (116) | ≈ 1.37 (2.04) |
| 58-125- | | -0 | 4.92 (125) | 5.55 (141) | ≈ 1.55 (2.31) |
| 58-150- | | -0 | 5.91 (150) | 6.54 (166) | ≈ 1.75 (2.61) |
| 58-175- | | -0 | 6.89 (175) | 7.52 (191) | ≈ 1.94 (2.88) |
| 58-200- | | -0 | 7.87 (200) | 8.50 (216) | ≈ 2.12 (3.15) |

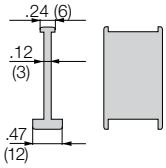
Choose from the radii below for all of the above sizes
Radius (mm)Example: R58-100-100-0

| | 075 | 100 | 125 | 150 | 200 | 250 |
|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 10.83 (275) | 12.80 (325) |
| K | 12.96 (305) | 15.16 (385) | 18.11 (460) | 21.26 (540) | 27.36 (695) | 33.66 (855) |

# E-Chain System® E2 Tubes
# Series R58
# Interior Separation



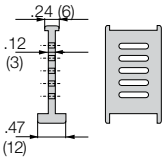

No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 581** |
| Assembled | **Part No. 582** |

- **Separator 581**
  **For vertical** separation with wide base for maximum stability when used with thick cables or hoses

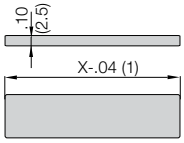



**Slotted Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 587** |
| Assembled | **Part No. 588** |

- **Separator 587**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves - for the standard interior separation




**Full width shelf for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

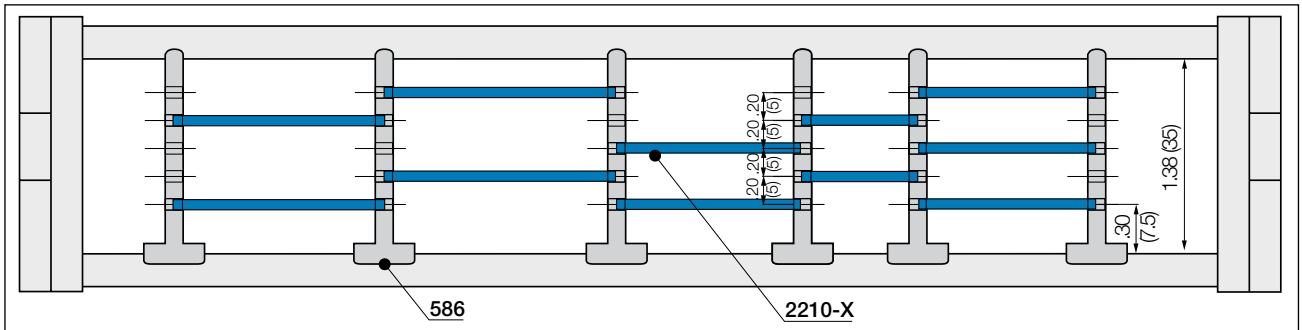
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **220-50** | **221-50** |
| 2.95 | (75) | **220-75** | **221-75** |
| 3.94 | (100) | **220-100** | **221-100** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 4.92 | (125) | **220-125** | **221-125** |
| 5.91 | (150) | **220-150** | **221-150** |
| 6.89 | (175) | **220-175** | **221-175** |

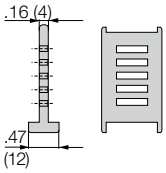
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 7.87 | (200) | **220-200** | **221-200** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R58
# Interior Separation




No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link

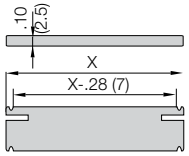



**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 585** |
| Assembled | **Part No. 586** |

- **Slotted separator 585**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 5 different heights in .20" (5mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |
| 5.87 | (149) | **2200-149** | **2210-149** |

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QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Tubes
# Series R58
# Mounting Brackets - KMA

## Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels

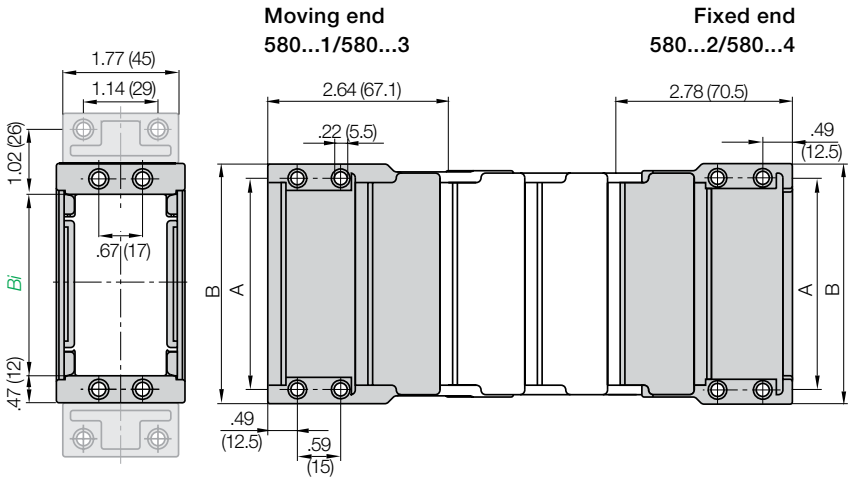
## Option 2: locking

- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube
- KMA with Quickflange option

### Part Number Structure

580- 050- 12 QF

- With Quickflange
- Complete Set **12 = Pivoting** **34 = Locking**
- Width
- Mounting brackets for selected chain type




**Full set, for both ends:**

580- 050- 12 QF Full set, **each part with pin/bore + Quickflange**

**Single-part order:**

580- 050- 1 QF Mounting bracket **with bore + Quickflange**

580- 050- 2 QF Mounting bracket **with pin + Quickflange**

Quickflange upon request
- Unassembled

| For Tube Type | Part No. Full set without Quickflange | Part No. Full Set with Quickflange | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| 58-050 | 580-050- ☐ | 580-050- ☐ QF | 2.44 | (62) | 2.91 | (74) |
| 58-075 | 580-075- ☐ | 580-075- ☐ QF | 3.43 | (87) | 3.90 | (99) |
| 58-100 | 580-100- ☐ | 580-100- ☐ QF | 4.41 | (112) | 4.88 | (124) |
| 58-125 | 580-125- ☐ | 580-125- ☐ QF | 5.39 | (137) | 5.87 | (149) |
| 58-150 | 580-150- ☐ | 580-150- ☐ QF | 6.38 | (162) | 6.85 | (174) |
| 58-175 | 580-175- ☐ | 580-175- ☐ QF | 7.36 | (187) | 7.83 | (199) |
| 58-200 | 580-200- ☐ | 580-200- ☐ QF | 8.35 | (212) | 8.82 | (224) |

12 or 34

For pivoting brackets choose 12
For locking brackets choose 34
Example: 580-050- 34 QF

The following parts are required for attachment of the mounting brackets:
- **Socket head cap bolt M5* DIN 912-8.8**
  **8 pieces/set**
- **Washer 5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut M5 DIN 934-8**
  **8 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R58
# Strain Relief

- Strain relief disappears completely within the E-Tube
- Easy to assemble, no screws required

| Part. No. | Width (mm) | Number of teeth |
|---|---|---|
| **5850-Z** | 1.81 (46) | 4 |

## Number of tiewrap plates 5850-Z for selected inner width *Bi*

| *Bin* | | | |
|---|---|---|---|
| 1.97 (50) | – | – | – |
| 2.95 (75) | 1.81 (46) | 1 | 4 |
| 3.94 (100) | 1.81 (46) | 1 | 4 |
| 4.92 (125) | 1.81 (46) | 2 | 8 |
| 5.91 (150) | 1.81 (46) | 2 | 8 |
| 6.89 (175) | 1.81 (46) | 3 | 12 |
| 7.87 (200) | 1.81 (46) | 3 | 12 |

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# E-Chain System® E2 Tubes
# Series R58
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part number 95-30**
- 1/2 travel length glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part number 95-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough without glide bar
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough

**Part No. 95-30**

= 13 sections of 6.56 ft (2 m) glide bar

**Part No. 92-01**

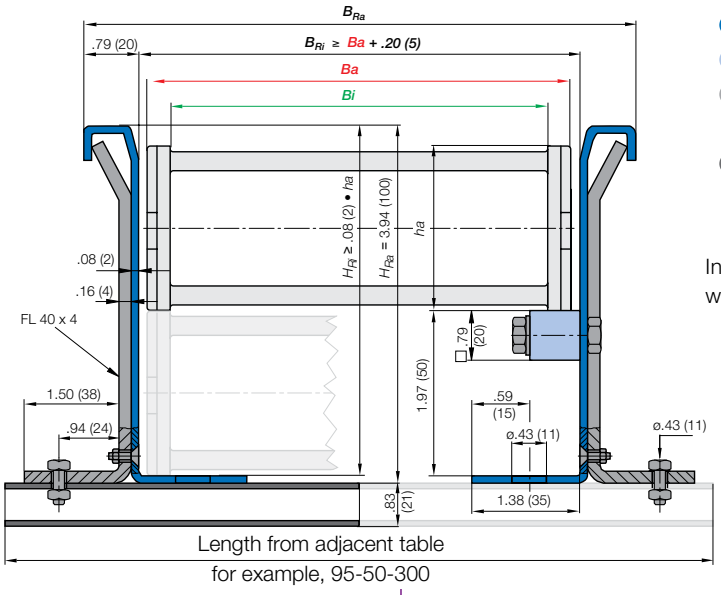
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**95-50-XXX**
**Example:**
95-50-250 for 9.84" (250 mm) long profile rail.

**Example:**

Width of Crossbar
58-**075**-200-0

| | $B_{Ri}$ | Part No. Installation Set |
|---|---|---|
| **-050** | 2.80 (71) | **95-50-200** |
| **-075** | 3.78 (96) | **95-50-225** |
| **-100** | 4.76 (121) | **95-50-250** |
| **-125** | 5.75 (146) | **95-50-275** |
| **-150** | 6.73 (171) | **95-50-300** |
| **-175** | 7.72 (196) | **95-50-325** |
| **-200** | 8.70 (221) | **95-50-350** |

Standard length profile rail




- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes Series R68

1.77

## Price Index

Series R68

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

iF-Design Award Winner

## Assembly Tips

To open the E-Tube Series R, lift up the lid (with a screwdriver) and remove the lid

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 197 ft (60 m) |
| Vertical, standing ≤ 13.12 ft (4 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If particularly quiet operation is required
- If very high speeds are required
- If chip protection is subject to stringent requirements

- If a particularly low-cost solution is the main factor
  ➤ **Series R167/R168 E2 Tubes**
- If no chip protection is required
  ➤ **Series 340/350 E2 Medium**

## Features & Benefits

1. Large pins for high stability
2. Protection for cables and hoses against hot chips
3. Small pitch for low-noise, smooth operation
4. Removable lids along the outer radius
5. Smooth, chip-repellent exterior
6. KMA mounting brackets with attachment capabilities on all sides
7. Fully enclosed
8. Integrated strain relief available especially for E-Tubes

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

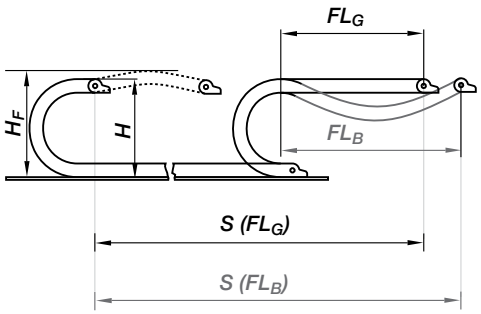
| | |
|---|---|
| 3.28 ft (1 m) **68-100-100-0** | **E-Chain®** |
| With 2 separators **311** assembled every 2nd link | **Interior Separation** |
| 1 Set **680-100-12** | **Mounting Bracket** |

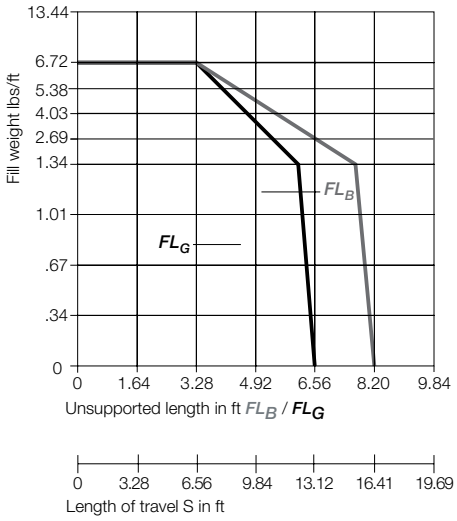
# E-Chain System® E2 Tubes
# Series R68
# Installation Dimensions

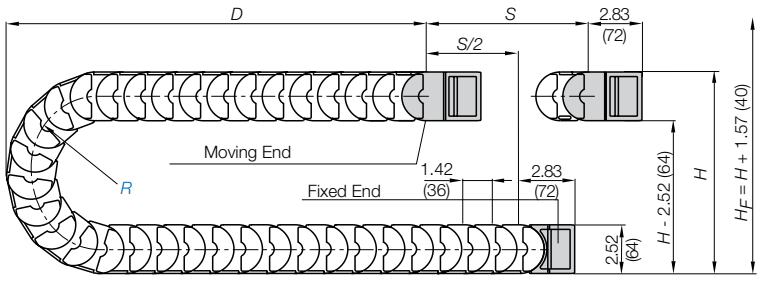
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.42" (36 mm)
**Links per ft (m): =** 8.53 (28)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

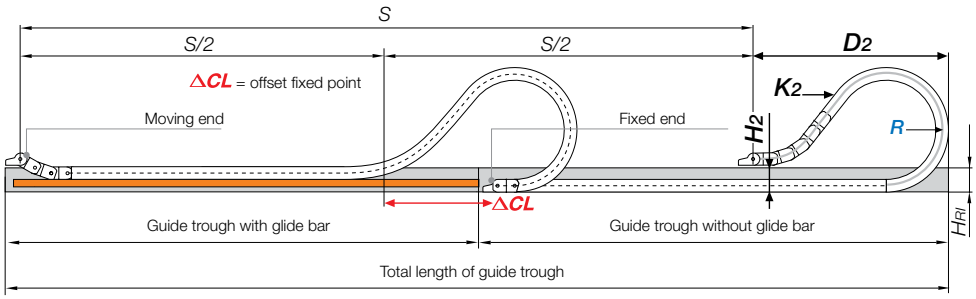
The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|
| H | 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 20.24 (514) | 22.20 (564) | 26.14 (664) |
| D | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 13.23 (336) | 15.20 (386) |
| K | 15.35 (390) | 18.31 (465) | 21.46 (545) | 24.60 (625) | 27.76 (705) | 30.71 (780) | 33.86 (860) | 39.96 (1015) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 328 ft. (100 m)**

**For center mount applications:**
**Chain length:** $= \frac{S}{2} + K_2$




| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 7.91 (201) | 8.66 (220) | 8.66 (220) | 8.66 (220) | 8.66 (220) | 8.66 (220) | 8.66 (220) | 8.66 (220) |
| $D_2$ | 7.87 (200) | 14.57 (370) | 17.32 (440) | 21.26 (540) | 25.59 (650) | 27.56 (700) | 33.46 (850) | 41.34 (1050) |
| $K_2$ | 19.69 (500) | 25.51 (648) | 31.18 (792) | 35.43 (900) | 43.94 (1116) | 49.96 (1269) | 58.11 (1476) | 70.87 (1800) |
| ΔCL | – | 6.46 (164) | 8.03 (204) | 11.57 (294) | 14.33 (364) | 17.28 (439) | 20.24 (514) | 26.14 (664) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 9.84 ft/s (3 m/s) / max. 32.8 ft/s² (10 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

## Technical Data

Details of material properties

➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R68

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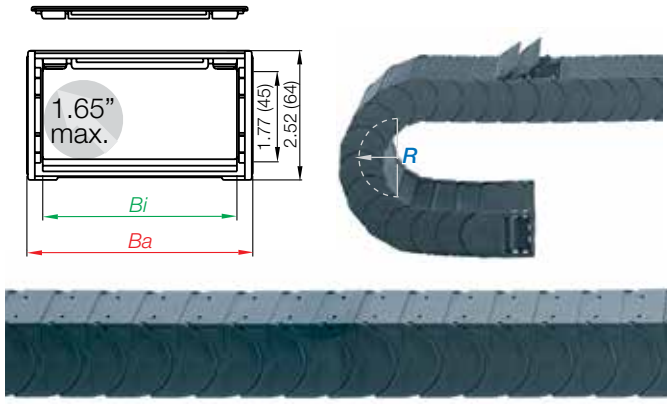
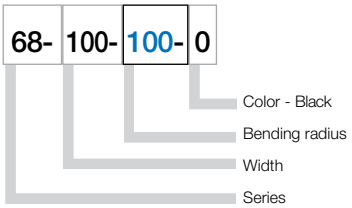
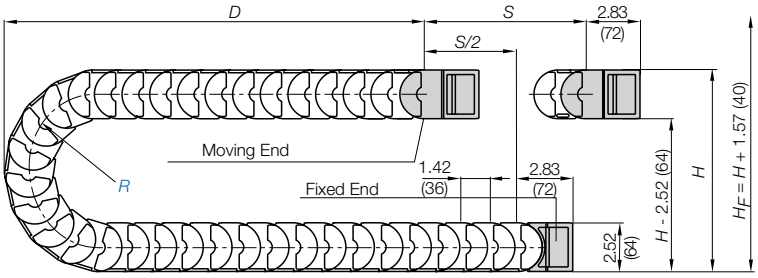
## Series R68 - E-Tube snap-open along the outer radius



**Part Number Structure**




Supplement part number with required radius. Example: R68-100-100-0
Pitch: 1.42 in. (36 mm) per link links/ft (m) = 8.53 (28)

| Part Number | | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 68-050- | | -0 | 1.97 (50) | 2.68 (68) | ≈ 1.28 (1.90) |
| 68-075- | | -0 | 2.95 (75) | 3.66 (93) | ≈ 1.46 (2.18) |
| 68-100- | | -0 | 3.94 (100) | 4.65 (118) | ≈ 1.65 (2.46) |
| 68-115- | | -0 | 4.53 (115) | 5.24 (133) | ≈ 1.77 (2.63) |
| 68-125- | | -0 | 4.92 (125) | 5.63 (143) | ≈ 1.86 (2.77) |
| 68-150- | | -0 | 5.91 (150) | 6.61 (168) | ≈ 2.05 (3.05) |
| 68-175- | | -0 | 6.89 (175) | 7.60 (193) | ≈ 2.26 (3.36) |
| 68-200- | | -0 | 7.87 (200) | 8.58 (218) | ≈ 2.45 (3.64) |
| 68-225- | | -0 | 8.86 (225) | 9.57 (243) | ≈ 2.63 (3.92) |
| 68-250- | | -0 | 9.84 (250) | 10.55 (268) | ≈ 2.84 (4.23) |

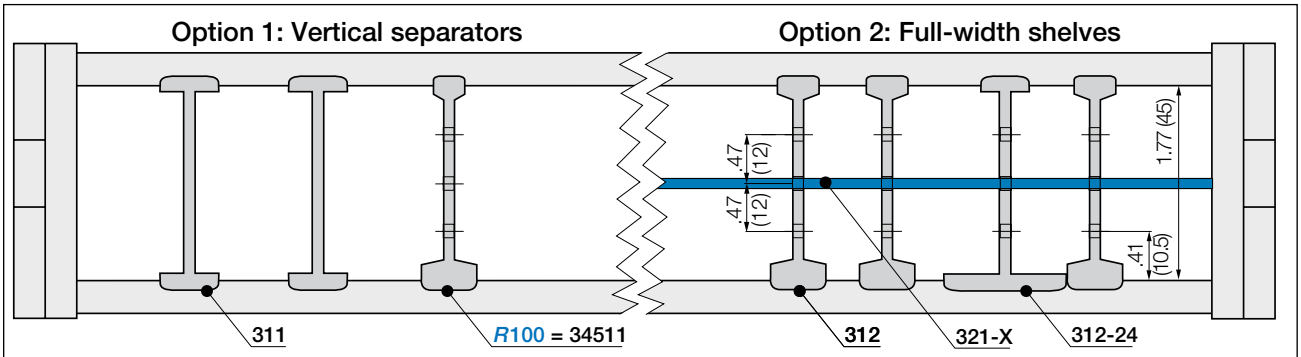
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R68-100-100-0

| | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) |
| H | 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 20.24 (514) | 22.20 (564) | 26.14 (664) |
| D | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 13.23 (336) | 15.20 (386) |
| K | 15.35 (390) | 18.31 (465) | 21.46 (545) | 24.60 (625) | 27.76 (705) | 30.71 (780) | 33.86 (860) | 39.96 (1015) |

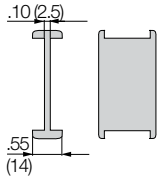
## Separator with integrated strain relief

**Strain relief separator Part No. 34501-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

# E-Chain System® E2 Tubes
# Series R68
# Interior Separation



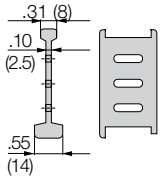

**No lateral spacing to side links is necessary**
**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 301** |
| Assembled | **Part No. 311** |

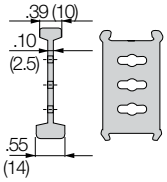
- **Separator 301**
  **For vertical** separation with wide base for maximum stability when used with thick cables or hoses




**Slotted Separator for E-Tubes (for radius R 100)**

| | |
|---|---|
| Unassembled | **Part No. 34501** |
| Assembled | **Part No. 34511** |

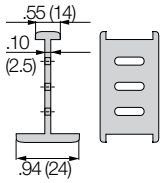
- **Separator 34501 (for radius R 100)**
  if you select bending radius R 100 please use this separator for a vertical subdivision.




**Slotted Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 302** |
| Assembled | **Part No. 312** |

- **Separator 302**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

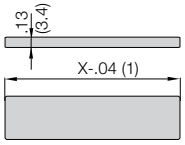



**Slotted Separator with wide base* for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 302-24** |
| Assembled | **Part No. 312-24** |

- **Separator 302-24**
  If a wide space between the separators must be maintained or separators must be in a fixed position. Features a wide base.
  *(for side mounted applications).

## Full-width shelves - for the standard interior separation




**Full width shelf for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. 320-X** |
| Assembled | **Part No. 321-X** |

- **Full width shelf 320-X**
  is used in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 5 different heights in .20" (5mm) increments..

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled | Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.97 | (50) | **320-50** | **321-50** | 4.92 | (125) | **320-125** | **321-125** | 7.87 | (200) | **320-200** | **321-200** |
| 2.95 | (75) | **320-75** | **321-75** | 5.91 | (150) | **320-150** | **321-150** | 8.86 | (225) | **320-225** | **321-225** |
| 4.53 | (115) | **320-115** | **321-115** | 6.89 | (175) | **320-175** | **321-175** | 9.84 | (250) | **320-250** | **321-250** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R68
# Interior Separation

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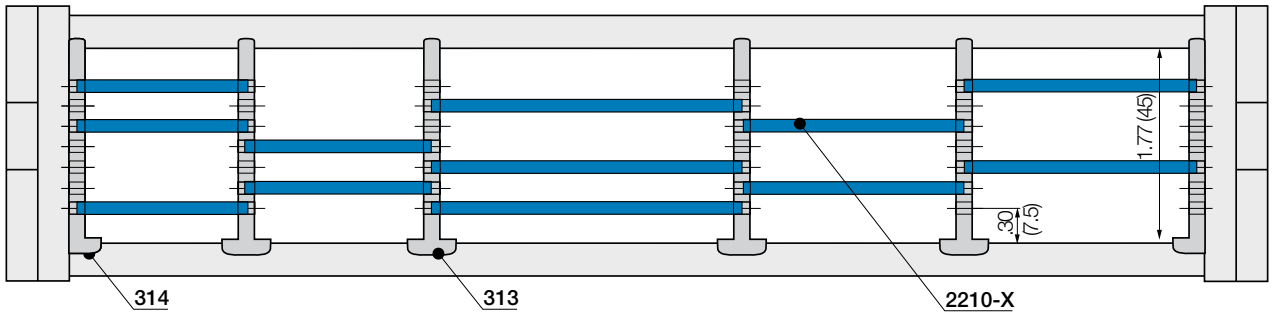
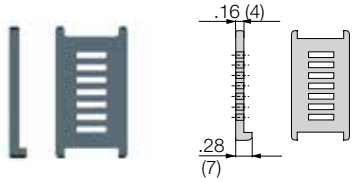


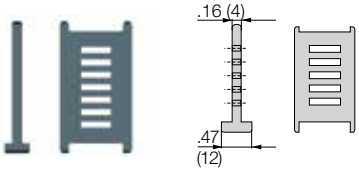

No lateral spacing to side links is necessary
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 303** |
| Assembled | **Part No. 313** |

- **Side plate 303**
  Side plate for use with full-width sehlf 2200-X and middle plate 304

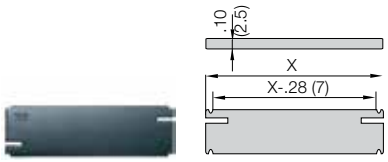



**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 304** |
| Assembled | **Part No. 314** |

- **Middle plate 304**
  To achieve a modular interior separation the shelf 2200-X can be arranged at 7 different heights in .20" (5mm) increments.

## Full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2200-X** |
| Assembled | **Part No. 2210-X** |

- **Full width shelf 2200-X**
  For applications involving many cables with different diameters, shelves can be arranged at alternate heights. They can be arranged at 7 different heights in .20" (5mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |

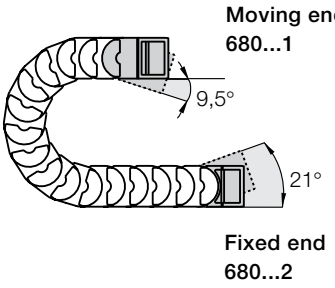
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |
| 5.87 | (149) | **2200-149** | **2210-149** |

# E-Chain System® E2 Tubes
# Series R68
# Interior Separation

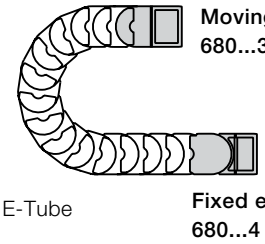
## Option 1: pivoting

- Unsupported and gliding applications
- Space-restricted conditions
- Mounting points on all sides
- KMA with Quickflange option available for short and long travels



## Option 2: locking

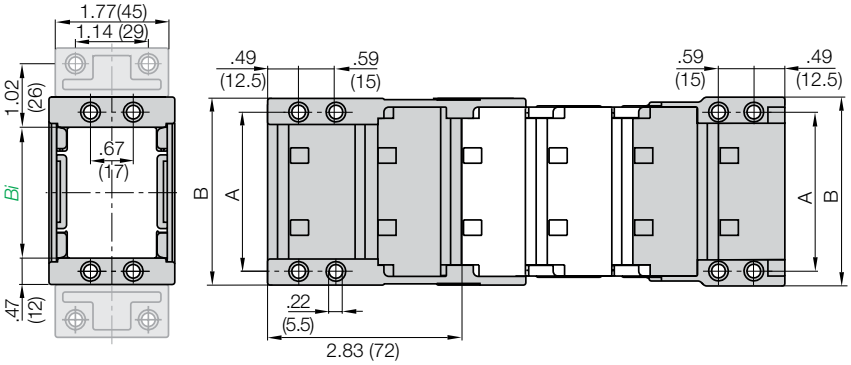
- Vertical hanging/standing travels
- Extreme speeds and accelerations
- Mounting points on all sides
- Flush mounting at both ends of the E-Tube
- KMA with Quickflange option



### Part Number Structure

680- 050- 12 QF

- 12 / QF: With Quickflange
- 12: Complete Set
  **12 = Pivoting**
  **34 = Locking**
- 050-: Width
- 680-: Mounting brackets for selected chain type




**Full set, for both ends:**

680-050-12 QF Full set, **each part with pin/bore + tiewrap plate**

**Single-part order:**

680-050-1 QF Mounting bracket **with bore + tiewrap plate**

680-050-2 QF Mounting bracket **with pin + tiewrap plate**

Quickflange unassembled
**Part number 16800-QF**

| For Tube Type | Part No. Full set with Tiewrap Plate | Part No. Full Set with Quickflange | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| 68-050 | 680-050- ☐ | 680-050- ☐ QF | 2.44 | (62) | 2.91 | (74) |
| 68-075 | 680-075- ☐ | 680-075- ☐ QF | 3.43 | (87) | 3.90 | (99) |
| 68-100 | 680-100- ☐ | 680-100- ☐ QF | 4.41 | (112) | 4.88 | (124) |
| 68-115 | 680-115- ☐ | 680-115- ☐ QF | 5.00 | (127) | 5.47 | (139) |
| 68-125 | 680-125- ☐ | 680-125- ☐ QF | 5.39 | (137) | 5.87 | (149) |
| 68-150 | 680-150- ☐ | 680-150- ☐ QF | 6.38 | (162) | 6.85 | (174) |
| 68-175 | 680-175- ☐ | 680-175- ☐ QF | 7.36 | (187) | 7.83 | (199) |
| 68-200 | 680-200- ☐ | 680-200- ☐ QF | 8.35 | (212) | 8.82 | (224) |
| 68-225 | 680-225- ☐ | 680-225- ☐ QF | 9.33 | (237) | 9.80 | (249) |
| 68-250 | 680-250- ☐ | 680-250- ☐ QF | 10.31 | (262) | 10.79 | (274) |

☐ = 12 or 34

For pivoting brackets choose 12

For locking brackets choose 34

Example: 680-050- 34 QF

The following parts are required for attachment of the mounting brackets:

- **Socket head cap bolt**
  **M5* DIN 912-8.8**
  **8 pieces/set**
- **Washer**
  **5.3 DIN 125-ST**
  **8 pieces/set**
- **Hexagon nut**
  **M5 DIN 934-8**
  **8 pieces/set**

* The length of the socket head cap bolt is dependent on the thickness of the attachment base.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series R68
# Strain Relief

## Integrated strain relief for E2 E-Tubes - Series R

- Strain relief disappears completely within the E-Tube
- Easy to assemble, no screws required

| Part. No. | Width (mm) | Number of teeth |
|---|---|---|
| **3050-Z** | 1.97 (50) | 5 |
| **3075-Z** | 2.95 (75) | 7 |

## Number of tiewrap plates 3050-Z for selected inner width *Bi*

| *Bi* in. | (mm) | Width tiewrap plate in. | (mm) | Number of tiewrap plates *n* | Total number of teeth |
|---|---|---|---|---|---|
| 1.97 | (50) | – | | – | – |
| 2.95 | (75) | – | | – | – |
| 3.94 | (100) | 1.97 | (50) | 1 | 5 |
| 4.52 | (115) | 1.97 | (50) | 1 | 5 |
| 4.92 | (125) | 1.97 | (50) | 1 | 5 |
| 5.91 | (150) | 1.97 | (50) | 2 | 10 |
| 6.89 | (175) | 1.97 | (50) | 2 | 10 |
| 7.87 | (200) | 1.97 | (50) | 3 | 15 |
| 8.86 | (225) | 1.97 | (50) | 3 | 15 |
| 9.89 | (250) | 1.97 | (50) | 4 | 20 |

## Number of tiewrap plates 3075-Z for selected inner width *Bi*

| *Bi* in. | (mm) | Width tiewrap plate in. | (mm) | Number of tiewrap plates *n* | Total number of teeth |
|---|---|---|---|---|---|
| 1.97 | (50) | – | | – | – |
| 2.95 | (75) | – | | – | – |
| 3.94 | (100) | – | | – | – |
| 4.52 | (115) | 2.95 | (75) | 1 | 7 |
| 4.92 | (125) | 2.95 | (75) | 1 | 7 |
| 5.91 | (150) | 2.95 | (75) | 1 | 7 |
| 6.89 | (175) | 2.95 | (75) | 2 | 14 |
| 7.87 | (200) | 2.95 | (75) | 2 | 14 |
| 8.86 | (225) | 2.95 | (75) | 3 | 21 |
| 9.89 | (250) | 2.95 | (75) | 3 | 21 |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E2 Tubes
# Series R68
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Tube glides on the lower run. If using igus steel guide troughs, the following components are required:

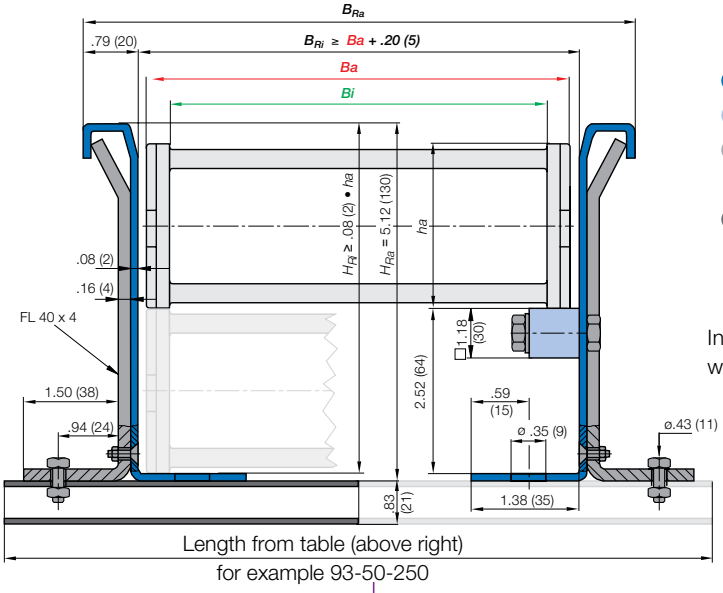
- Full travel length of guide trough
  **Part number 93-30**
- 1/2 travel length glide bars
  **Part number 93-01**
- Installation sets as end connectors
  **Part number 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough **Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar **Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**93-50-XXX**
**Example:**
93-50-250 for 9.84" (250 mm) long profile rail.

Width of Crossbar
68-**075**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-050** | 2.87 (73) | **93-50-200** |
| **-075** | 3.86 (98) | **93-50-225** |
| **-100** | 4.84 (123) | **93-50-250** |
| **-115** | 5.43 (138) | **93-50-250** |
| **-125** | 5.83 (148) | **93-50-275** |
| **-150** | 6.81 (173) | **93-50-300** |
| **-175** | 7.80 (198) | **93-50-325** |
| **-200** | 8.78 (223) | **93-50-350** |
| **-225** | 9.76 (248) | **93-50-375** |
| **-250** | 10.75 (273) | **93-50-400** |



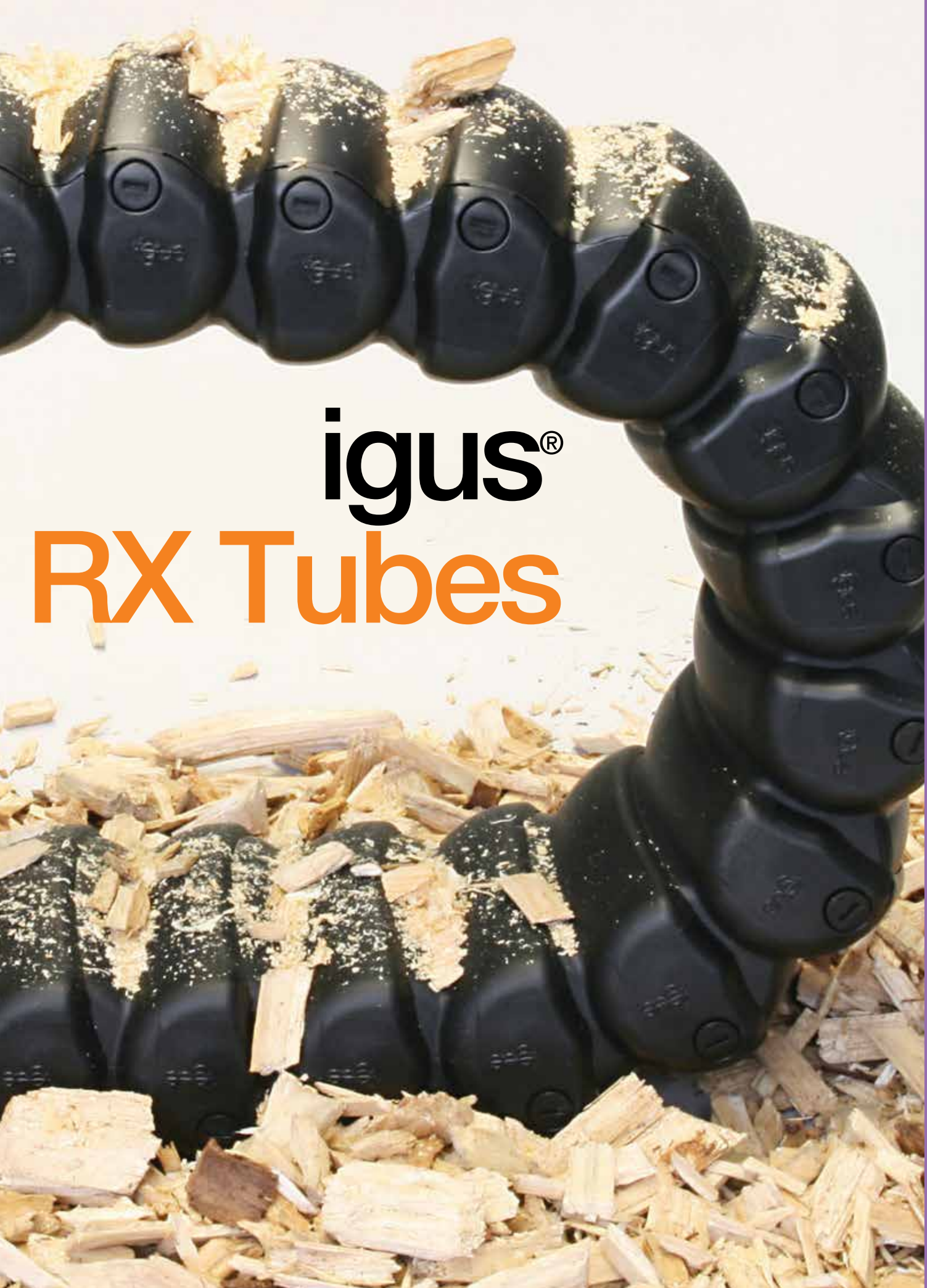

- Guide trough
- Glide bars
- Installation set "Basic"
- C-profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



igus®

# RX Tubes

# RX Tube - Totally new E-Tube with chip repellent design

A world premiere from igus®- a totally redesigned E-Tube repels chips, is extremely tight, and can be opened!

- Full chip protection without undercuts, projecting edges and gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.87” (73 mm) max. inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option

**Typical industries and applications**

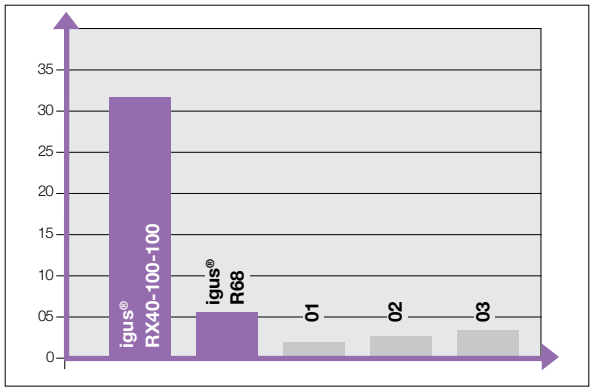
- Tooling machines
- Woodworking machines
- All kind of industries and machines with chip, dirt and dust

ESD Classification: Electrically conductive
ESD/ATEX version upon request

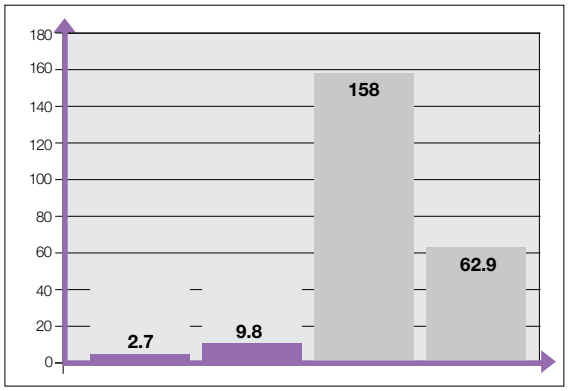
Flammability Class
VDE 0304 IIC UL94 HB

E-Tubes with HT-material for hot chips
up to 1562°F (850°C) available upon request

RX E-Tubes, without undercuts, projecting edges or gaps



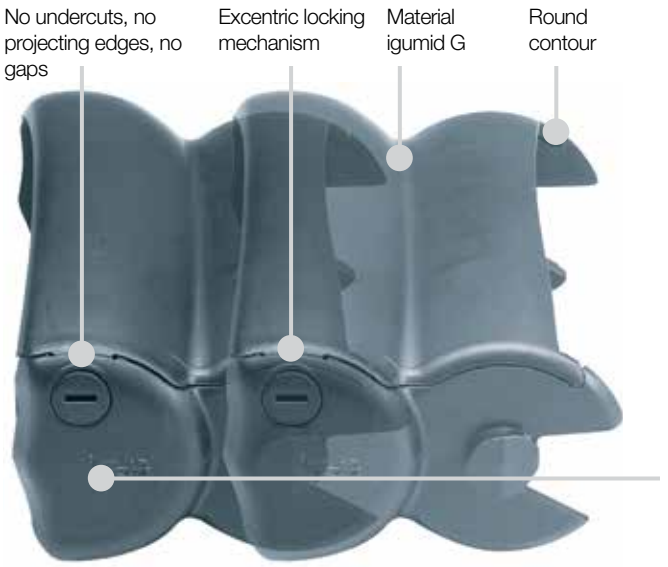

Test 1: Drowning - Various tube styles were submerged under water. For the RX E-Tube, it takes more than 30 sec. to fill up with water




Test 2: Chip intrusion - Various tube styles were charged with a defined quantity of chips. Only 3.7 g of chips were found inside the new RX E-Tube after 251,900 cycles

Chip-test at the igus® test-lab proven enormous tightness.

# E-Chain System® E2 Medium
# Series RX40




## Series RX - new chip protected design, small pitch, lids open

- Full chip protection without undercuts, projecting edges or gaps
- Round contour prevents chip accumulation
- Large interior cross section with 2.05 (52 mm) maximum inner height
- Covered pin/bore connection and stop dogs
- Reverse bending radius (RBR) becomes a standard option
- Perfect fastening with flange mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Selection table

| Series | Inner height | | Inner width | | Outer width | | Outer height | | Bending ra- | |
|---|---|---|---|---|---|---|---|---|---|---|
| | *hi* | | *Bi* | | *Ba* | | *ha* | | | |
| *R* | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | |
| (mm) | | | | | | | | | | |
| **RX32** | 1.02-1.65 | (26-42) | 3.15 | (80) | 3.87 | (98.4) | 2.20 | (56) | 3.15-5.91 | (80-150) |
| **RX40** | 1.26/2.05 | (32/52) | 3.94 | (100) | 4.84 | (123) | 2.76 | (70) | 3.94-11.81 | (100-300) |
| **RX48** | 1.38-2.44 | (35-62) | 4.72 | (120) | 5.81 | (147.6) | 3.31 | (84) | 4.72-5.91 | (120-150) |
| **RX56** | 1.61-2.87 | (41-73) | 5.51 | (140) | 6.78 | (172.2) | 3.86 | (98) | 5.51 | (140) |

**Protection from all kinds of chips**

## E-Tubes - Assembling RX E-Tube

Easy opening of lids on the outer radius with embedded excentric locking mechanism

## E-Tubes - Interior Separation of the RX E-Tube

Interior separation with cable-friendly separators and shelves

# E-Chain System® E2 Tubes
# Series RX32



## Price Index

Series RX32

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

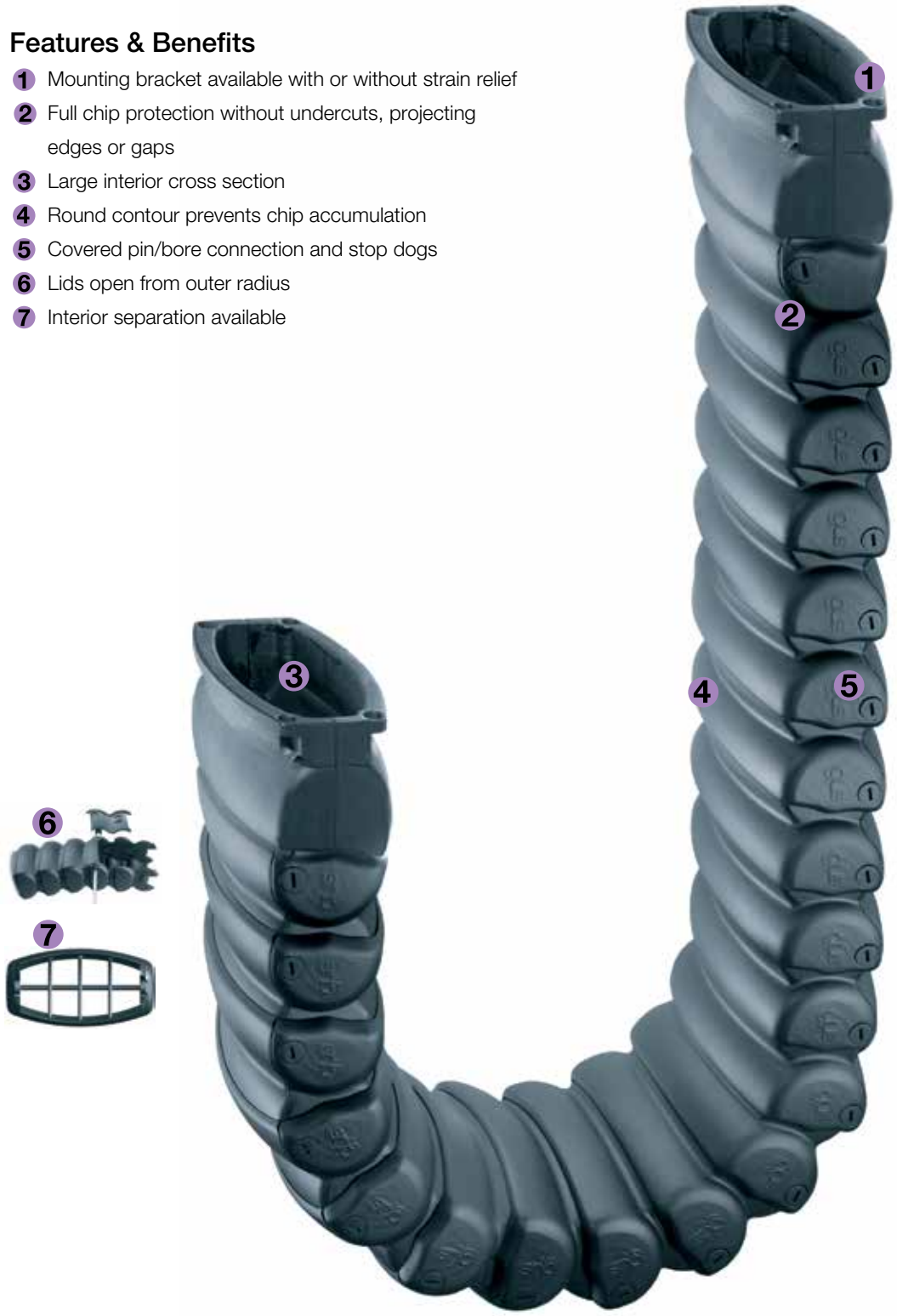
Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

## Features & Benefits

1. Mounting bracket available with or without strain relief
2. Full chip protection without undercuts, projecting edges or gaps
3. Large interior cross section
4. Round contour prevents chip accumulation
5. Covered pin/bore connection and stop dogs
6. Lids open from outer radius
7. Interior separation available




## Usage Guidelines

- If fully protected E-Tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R168 E2 Tubes**
- If no chip protection is required
  ➤ **Series R4-56 E4-1**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

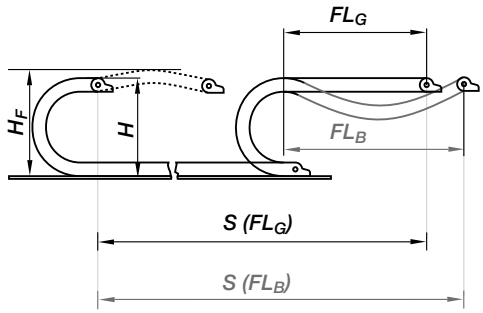
| | |
|---|---|
| 3.28 ft (1 m) **RX32-080-080-0** | **E-Chain®** |
| With 3 separators **RX32-1-1/RX32-1-2** assemb. every 2nd link | **Interior Separation** |
| 1 Set **RX321-080-12** | **Mounting Bracket** |

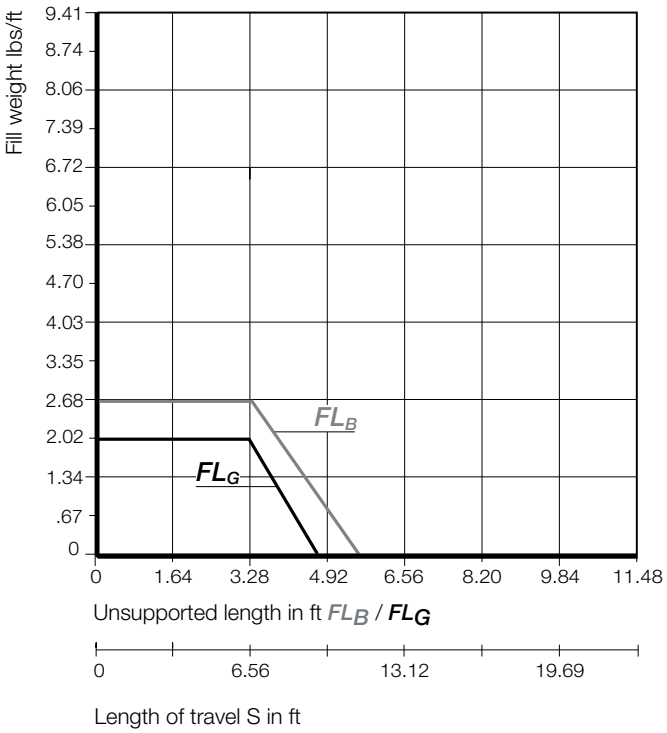
# E-Chain System® E2 Tubes
# Series RX32

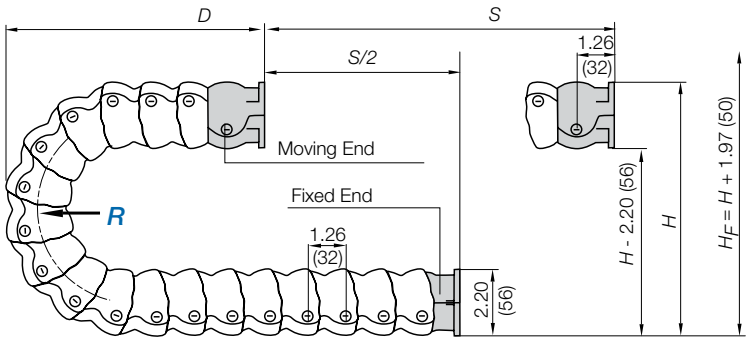
**Short travel, unsupported length**

- ● $FL_B$ = unsupported with permitted sag
- ● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.26" (32 mm)
**Links per ft (m): =** 9.52 (32)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 3.15 (080) | 5.91 (150) |
|---|---|---|
| H | 8.50 (216) | 14.02 (356) |
| D | 6.14 (156) | 8.89 (226) |
| K | 12.60 (320) | 21.26 (540) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

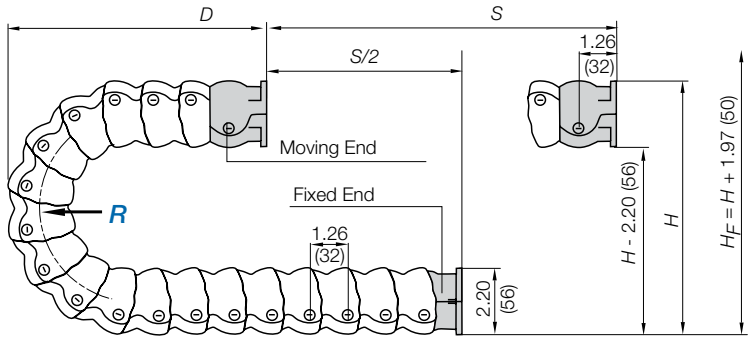
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series RX32
# Installation Dimensions, Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

## Series RX32 - snap-open along the outer radius




**Part Number Structure**

RX32- 080- 080- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX32-080-080-0
Pitch: 1.26 in. (32 mm) per link links/ft (m) = 9.52 (32)

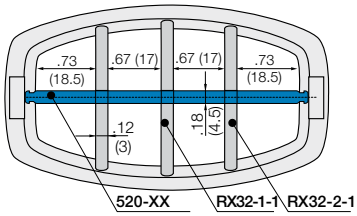
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| RX32-080-□-0 | 3.15 (80) | 3.87 (98.4) | ≈ 0.83 (1.23) |

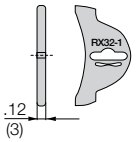
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: RX32-080-080-0

| | 080 | 150 |
|---|---|---|
| R | 3.15 (080) | 5.91 (150) |
| H | 8.50 (216) | 14.02 (356) |
| D | 6.14 (156) | 8.89 (226) |
| K | 12.60 (320) | 21.26 (540) |

## Separators and shelves

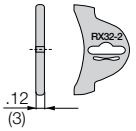
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




**Separator, central**

| | |
|---|---|
| Unassembled | **Part No. RX32-1** |
| Assembled | **Part No. RX32-1-1** |

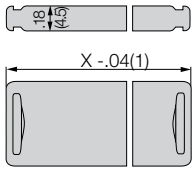



**Slotted Separator, lateral**

| | |
|---|---|
| Unassembled | **Part No. RX32-1** |
| Assembled | **Part No. RX32-2-1** |

**Shelves 520-XX**

Full width shelves lock into separators on both ends, fixed width possible.



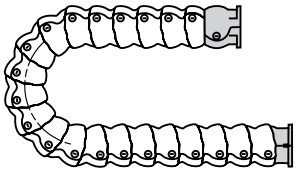

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.14 | (29) | **520-29** | **521-29** |
| 2.13 | (54) | **520-54** | **521-54** |
| 3.11 | (79) | **520-79** | **521-79** |
| 4.09 | (104) | **520-104** | **521-104** |

# E-Chain System® E2 Tubes
# Series RX32
# Mounting Brackets

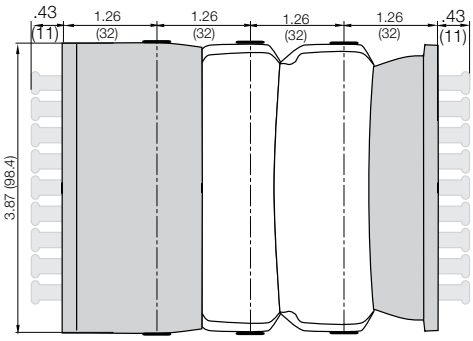
## Option: Flange mounting brackets

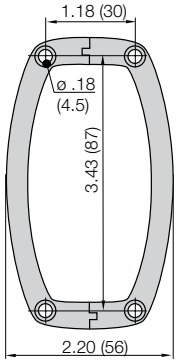
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

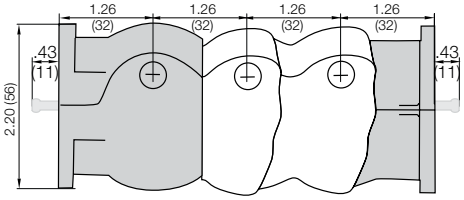
Moving end
RX321-080-1



Fixed end
RX321-080-2






Shown with strain relief

| Chain Type | Part No. full set with tiewrap plate | Part No. full set without tiewrap plate | Number of Teeth |
|---|---|---|---|
| RX32 | **RX321-080-12ZB** | **RX321-080-12** | 8 |

**Full set, for both ends:**
RX321-080-12

**Single-part order:**
RX321-080-1 Mounting bracket **moving end**
RX321-080-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series RX40



## Price Index

Series RX40

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

Flammability Class
VDE 0304 IIC UL94 HB

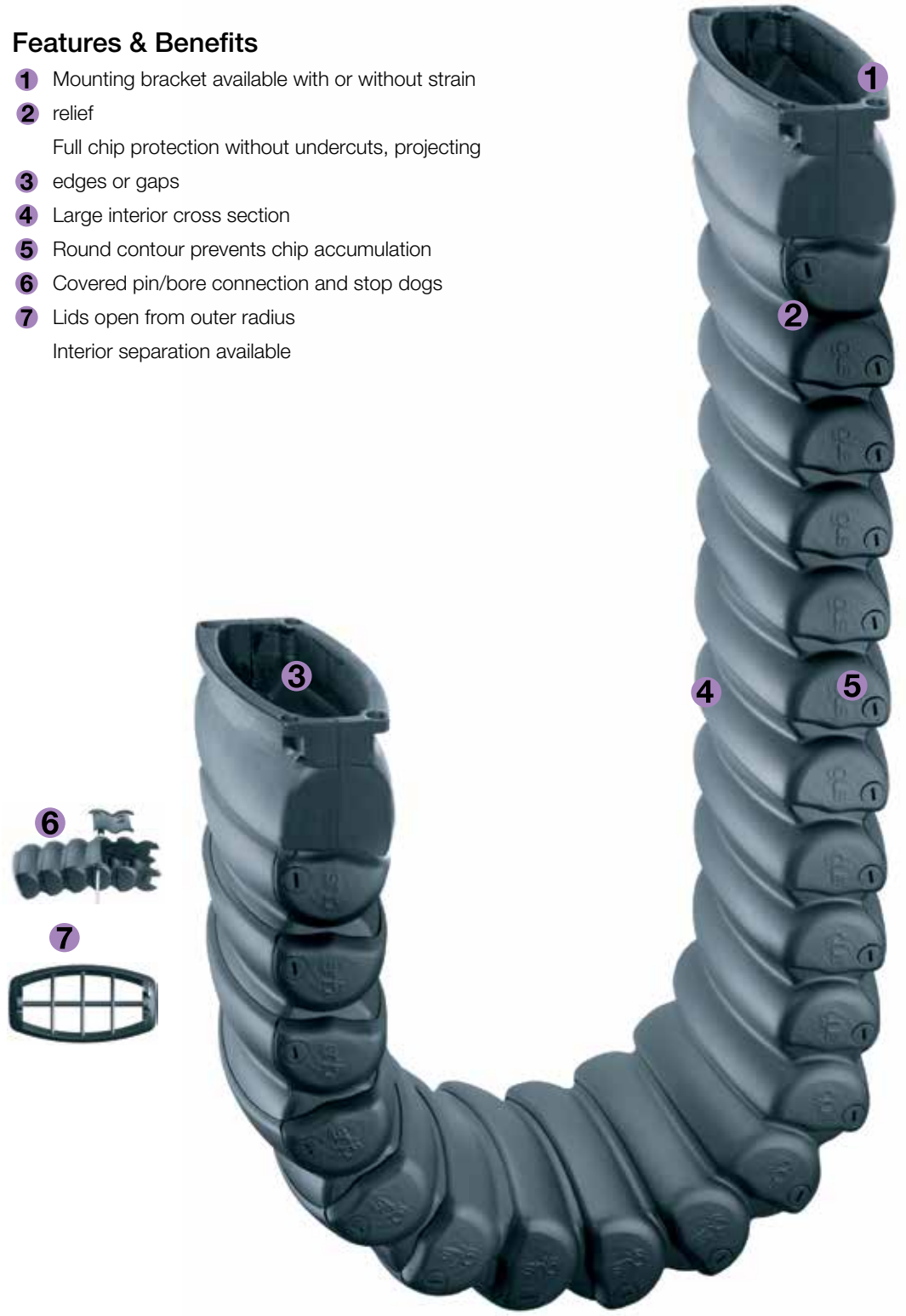
E-Tubes with HT-material for
hot chips up to 1562°F (850°C)
available upon request

## Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

## Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available




## Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- If a particularly low-cost solution is the main factor
  ➤ **Series R68 E2 Tubes**
- If no chip protection is required
  ➤ **Series 340/350 E2 Medium**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

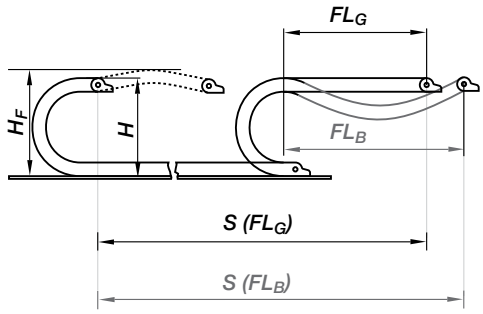
| | |
|---|---|
| 3.28 ft (1 m) **RX-40-100-100-0** | **E-Chain®** |
| With 3 separators **RX40-1-1/RX40-1-2** assemb. every 2nd link | **Interior Separation** |
| 1 Set **RX401-100-12** | **Mounting Bracket** |

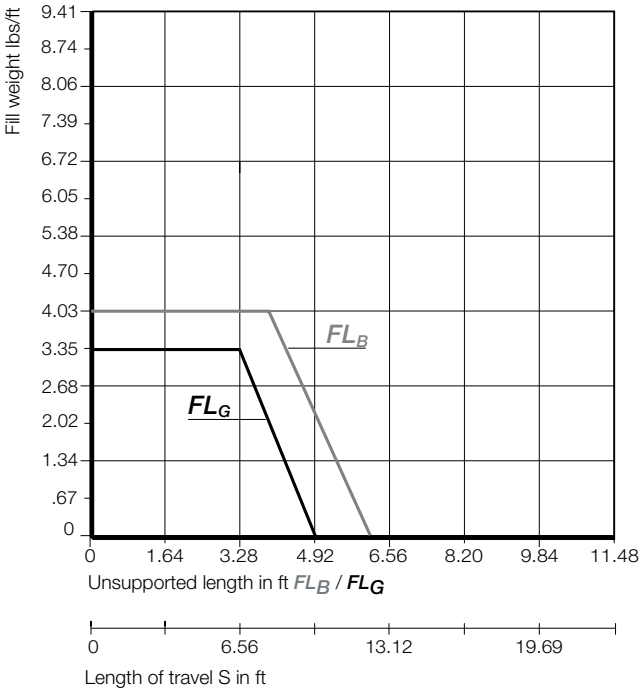
# E-Chain System® E2 Tubes
# Series RX40
# Installation Dimensions

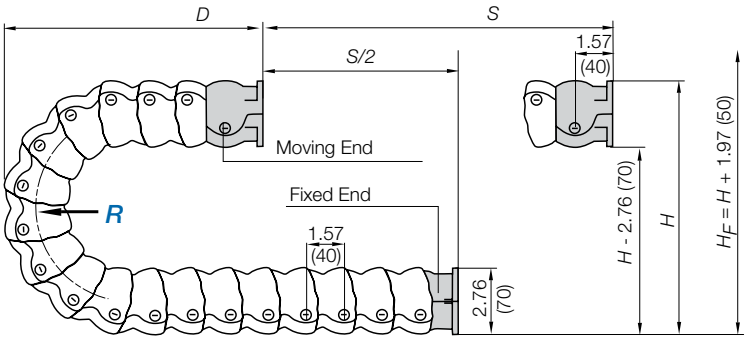
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.57" (40 mm)
**Links per ft (m): =** 7.62 (25)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|
| H | 10.63 (270) | 12.59 (320) | 14.57 (370) | 16.54 (420) | 18.50 (470) | 20.47 (520) | 22.44 (570) | 24.41 (620) | 26.38 (670) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) | 13.58 (345) | 14.57 (370) | 15.55 (395) |
| K | 15.55 (395) | 18.70 (475) | 21.85 (555) | 24.80 (630) | 27.95(710) | 31.10 (790) | 34.25 (870) | 37.20 (945) | 40.35(1025) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
**➤ Chapter 1**

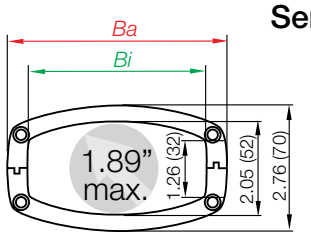


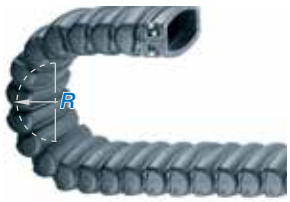
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

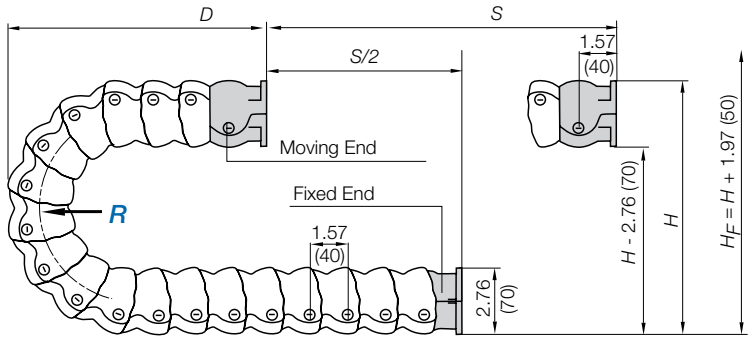
# E-Chain System® E2 Tubes
# Series RX40

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series RX40 - snap-open along the outer radius






**Part Number Structure**

RX40-100-100-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: RX40-100-100-0
Pitch: 1.57 in. (40 mm) per link links/ft(m) = 7.62 (25)

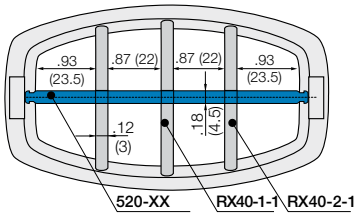
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| RX40-100-□-0 | 3.94 (100) | 4.84 (123) | ≈ 1.27 (1.89) |

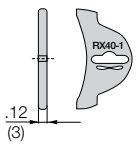
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: RX40-100-100-0

| | 100 | 125 | 150 | 175 | 200 | 225 | 250 | 275 | 300 |
|---|---|---|---|---|---|---|---|---|---|
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 11.81 (300) |
| H | 10.63 (270) | 12.59 (320) | 14.57 (370) | 16.54 (420) | 18.50 (470) | 20.47 (520) | 22.44 (570) | 24.41 (620) | 26.38 (670) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 11.61 (295) | 12.60 (320) | 13.58 (345) | 14.57 (370) | 15.55 (395) |
| K | 15.55 (395) | 18.70 (475) | 21.85 (555) | 24.80 (630) | 27.95(710) | 31.10 (790) | 34.25 (870) | 37.20 (945) | 40.35(1025) |

## Separators and shelves

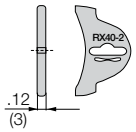
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




**Separator, central**

| | |
|---|---|
| Unassembled | **Part No. RX40-1** |
| Assembled | **Part No. RX40-1-1** |

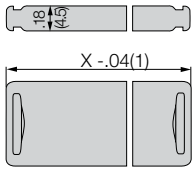



**Slotted Separator, lateral**

| | |
|---|---|
| Unassembled | **Part No. RX40-1** |
| Assembled | **Part No. RX40-2-1** |

### Shelves 520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



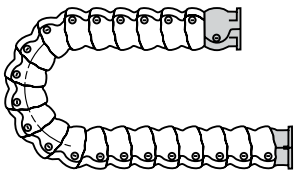

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.14 | (29) | 520-24 | 521-24 |
| 2.13 | (54) | 520-44 | 521-44 |
| 3.11 | (79) | 520-64 | 521-64 |
| 4.09 | (104) | 520-84 | 521-84 |

# E-Chain System® E2 Tubes
# Series RX40
# Mounting Brackets

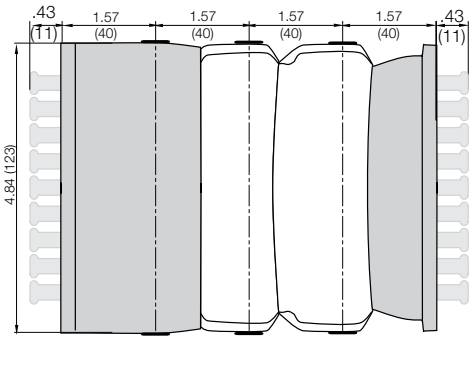
## Option: Flange mounting brackets

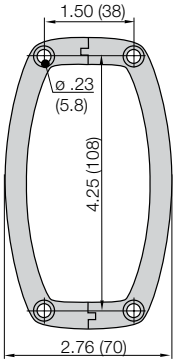
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

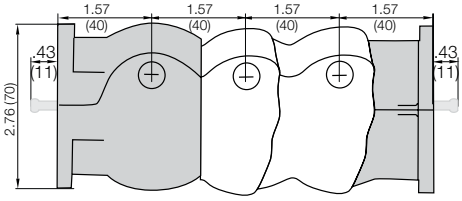
Moving end
RX401-100-1



Fixed end
RX401-100-2






Shown with strain relief

| Chain Type | Part No. full set with tiewrap plate | Part No. full set without tiewrap plate | Number of Teeth |
|---|---|---|---|
| RX40 | **RX401-100-12ZB** | **RX401-100-12** | 10 |

Full set, for both ends:
RX401-100-12

Single-part order:
RX401-100-1 Mounting bracket **moving end**
RX401-100-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series RX48

2.44

## Price Index

Series RX48

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

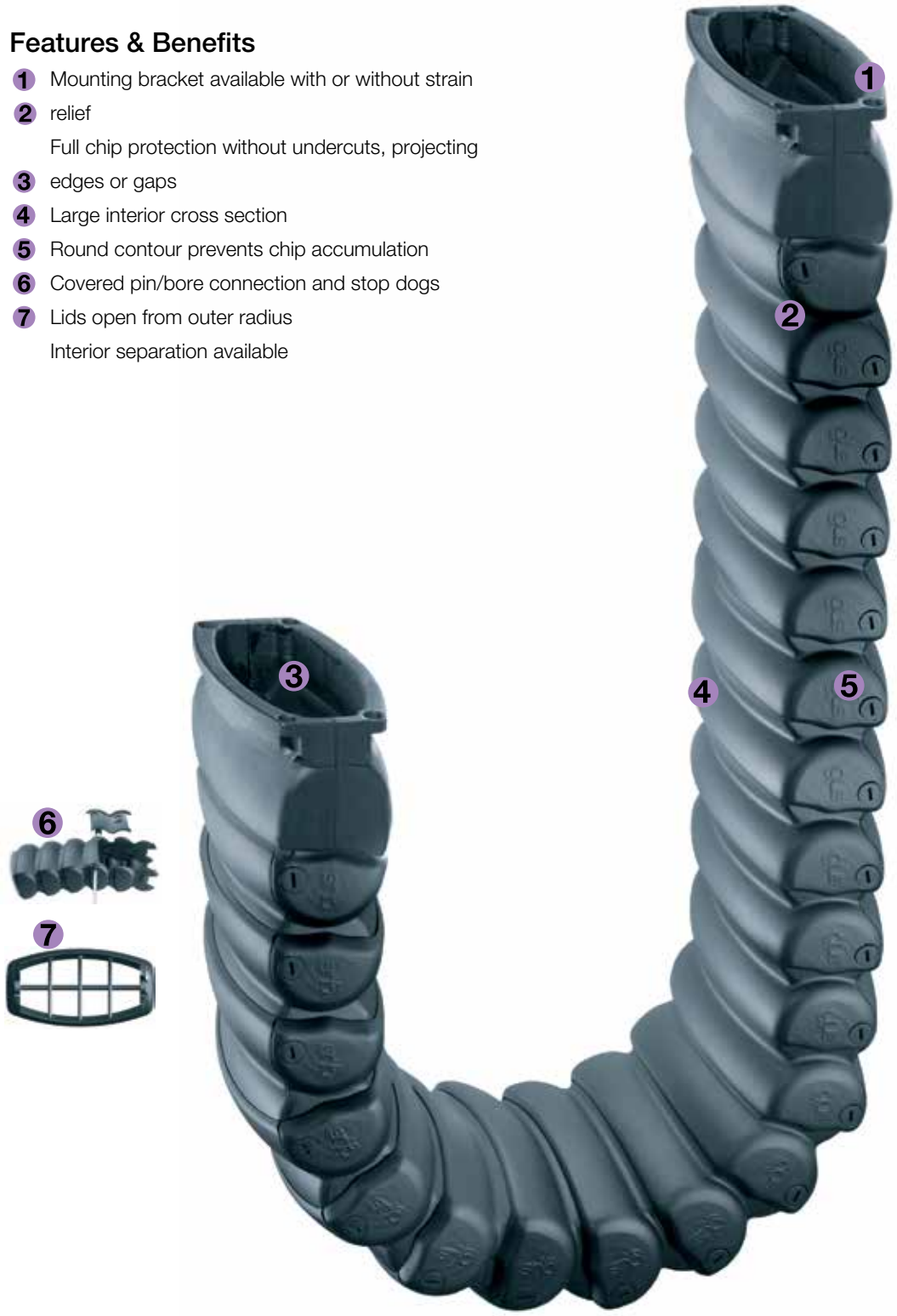
Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

## Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available




## Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R18840 E4 Light**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

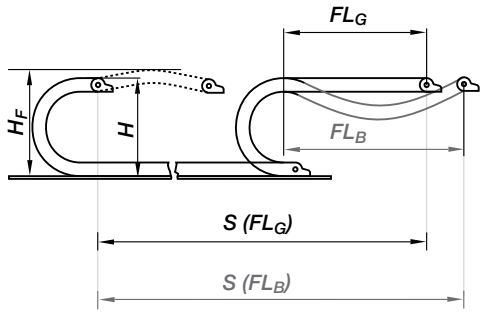
| | |
|---|---|
| 9.84 ft (3 m) **RX48-120-120-0** | **E-Chain®** |
| With 3 separators **RX48-1-1/RX48-1-2** assemb. every 2nd link | **Interior Separation** |
| 1 Set **RX48-120-12** | **Mounting Bracket** |

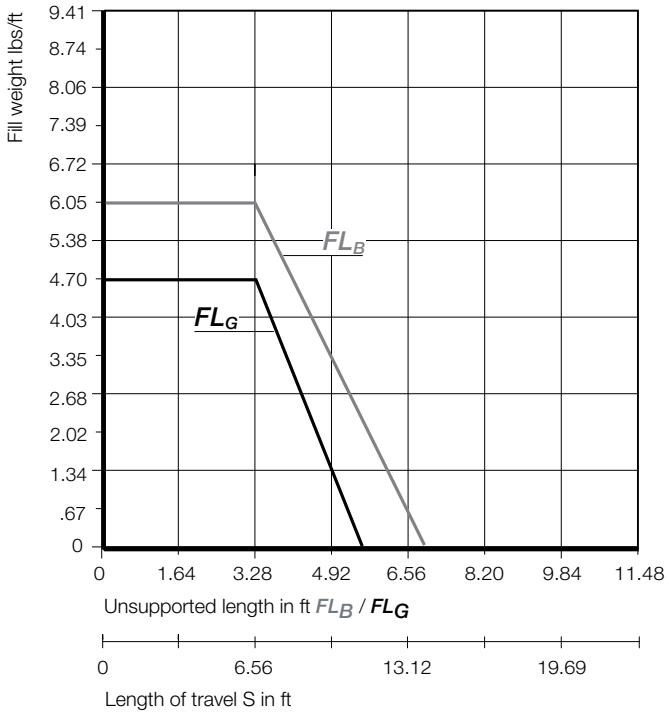
# E-Chain System® E2 Tubes
# Series RX48
# Installation Dimensions

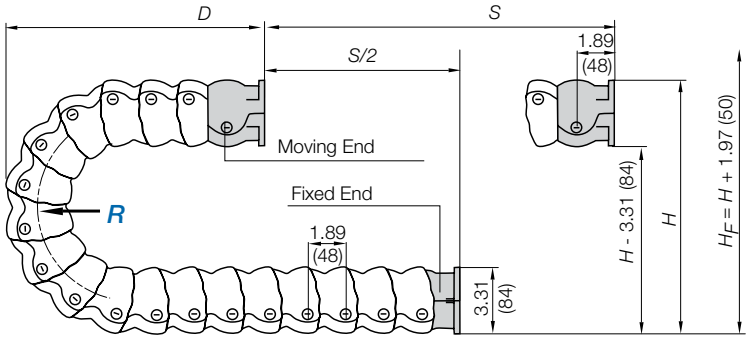
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.89" (48 mm)
**Links per ft (m): =** 6.35 (21)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 4.72 (120) | 5.91 (150) |
|---|---|---|
| H | 12.76 (324) | 15.12 (384) |
| D | 9.21 (234) | 10.39 (264) |
| K | 18.70 (475) | 22.44 (570) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

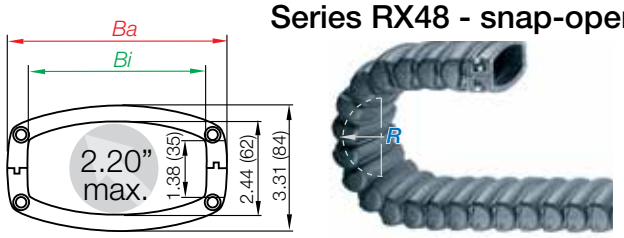
Details of material properties
➤ Chapter 1

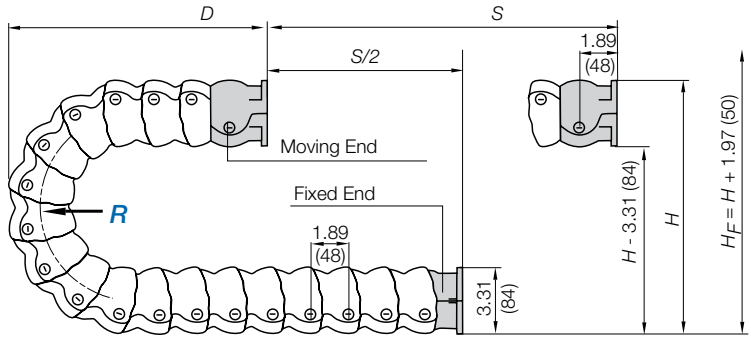
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series RX48
# Installation Dimensions, Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

## Series RX48 - snap-open along the outer radius






**Part Number Structure**

RX48- 120- 120- 0

- Color - Black
- Bending radius
- Width
- Series

**Supplement part number with required radius. Example: RX48-120-120-0**
**Pitch: 1.89 in. (48 mm) per link links/ft(m) = 6.35 (21)**

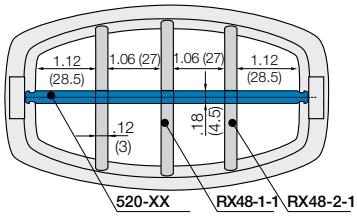
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| RX48-120-□-0 | 4.72 (120) | 5.81 (147.6) | ≈ 1.85 (2.76) |

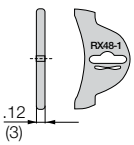
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: RX48-120-120-0

| | 120 | 150 |
|---|---|---|
| R | 4.72 (120) | 5.91 (150) |
| H | 12.76 (324) | 15.12 (384) |
| D | 9.21 (234) | 10.39 (264) |
| K | 18.70 (475) | 22.44 (570) |

## Separators and shelves

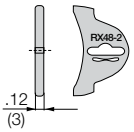
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




**Separator, central**

| | |
|---|---|
| Unassembled | **Part No. RX48-1** |
| Assembled | **Part No. RX48-1-1** |

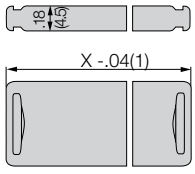



**Slotted Separator, lateral**

| | |
|---|---|
| Unassembled | **Part No. RX48-1** |
| Assembled | **Part No. RX48-2-1** |

**Shelves 520-XX**

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



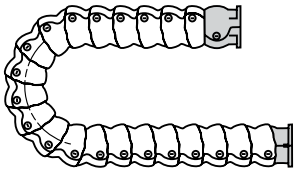

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.34 | (34) | 520-34 | 521-34 |
| 2.52 | (64) | 520-64 | 521-64 |
| 3.70 | (94) | 520-94 | 521-94 |
| 4.88 | (124) | 520-124 | 521-124 |

# E-Chain System® E2 Tubes
# Series RX48
# Mounting Brackets

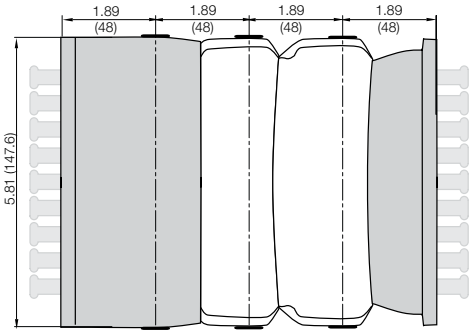
## Option: Flange mounting brackets

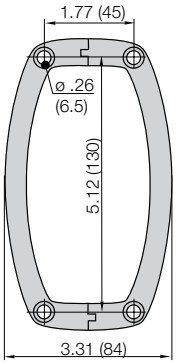
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

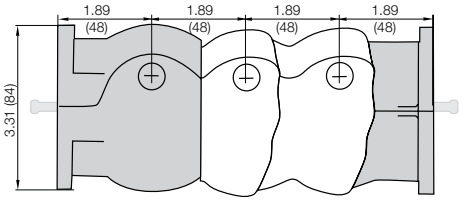
Moving end
RX481-120-1



Fixed end
RX481-120-2






Shown with strain relief

| Chain Type | Part No. full set with tiewrap plate | Part No. full set without tiewrap plate | Number of Teeth |
|---|---|---|---|
| RX48 | **upon request** | **RX481-120-12** | upon request |

**Full set, for both ends:**
RX481-120-12

**Single-part order:**
RX481-120-1 Mounting bracket **moving end**
RX481-120-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E2 Tubes
# Series RX56



## Price Index

Series RX56

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

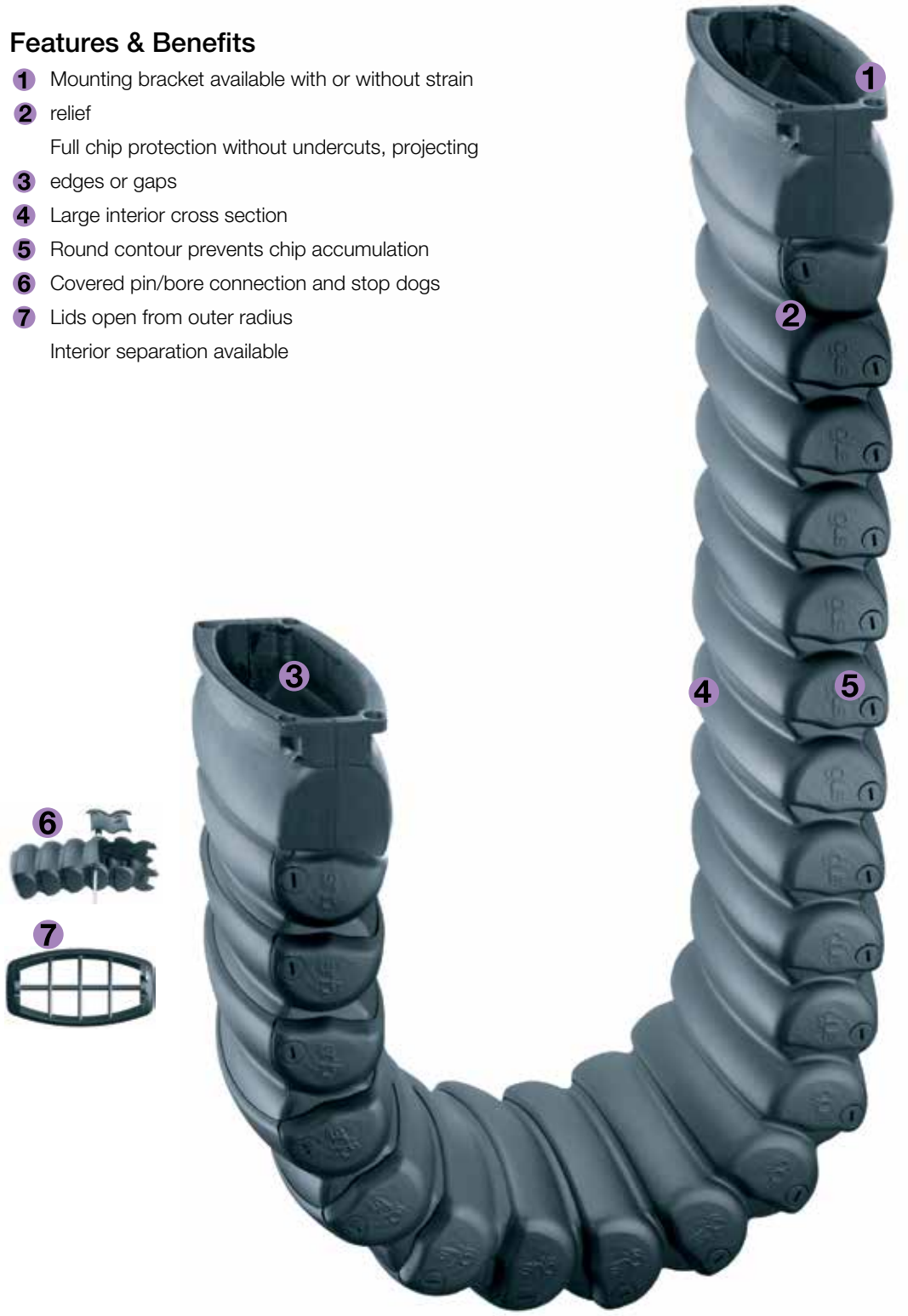
Flammability Class
VDE 0304 IIC UL94 HB

## Assembly Tips

Easy opening of lids on the outer radius with embedded excentric locking mechanism

## Features & Benefits

1. Mounting bracket available with or without strain
2. relief
   Full chip protection without undercuts, projecting
3. edges or gaps
4. Large interior cross section
5. Round contour prevents chip accumulation
6. Covered pin/bore connection and stop dogs
7. Lids open from outer radius
   Interior separation available




## Usage Guidelines

- If a fully protected E-Tube is desired
- If easy access from the outside is required

- For chip protection in gliding applications
  ➤ **Series R19850 E4 Light**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

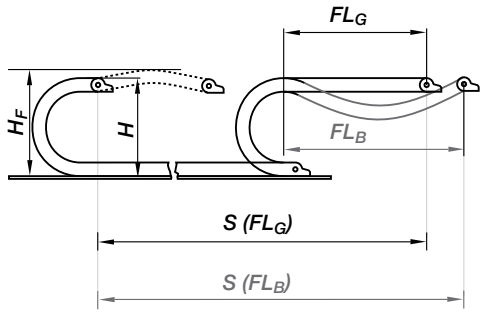
| | |
|---|---|
| 9.84 ft (3 m) **RX56-140-140-0** | E-Chain® |
| With 3 separators **RX56-1-1/RX56-1-2** assemb. every 2nd link | Interior Separation |
| 1 Set **RX561-140-12** | Mounting Bracket |

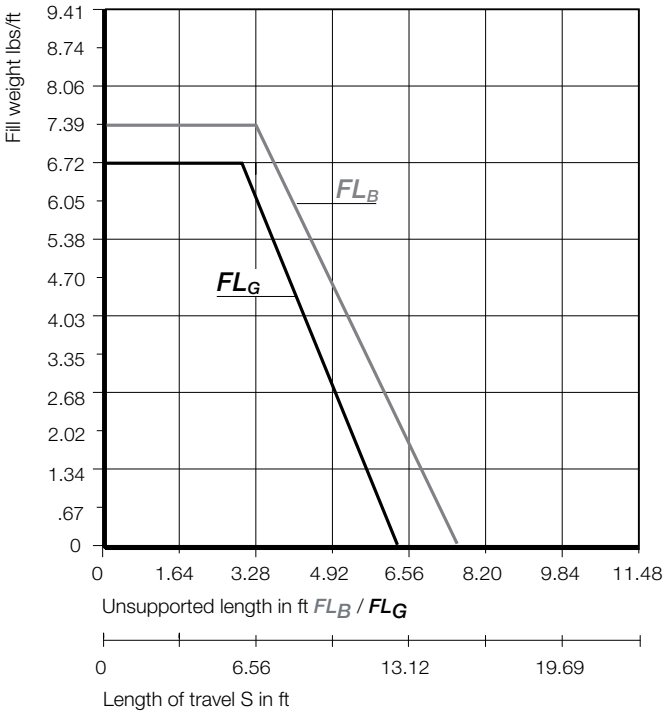
# E-Chain System® E2 Tubes
# Series RX56
# Installation Dimensions

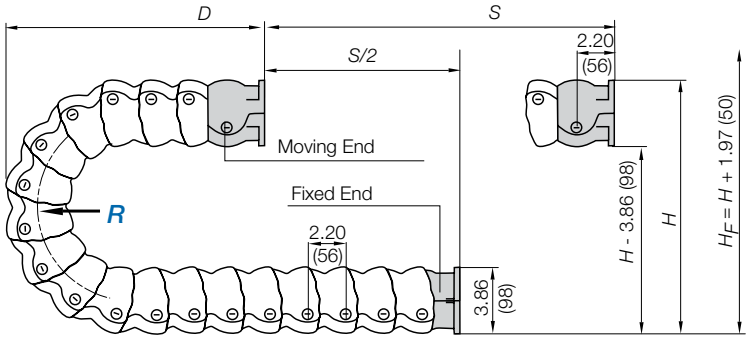
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.45 (18)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with .34 lbs/ft (0.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| | |
|---|---|
| **R** | **5.51 (140)** |
| **H** | 14.88 (378) |
| **D** | 10.75 (273) |
| **K** | 21.85 (555) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 32.8 ft/s (10 m/s) / max. 328 ft/s² (100 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

## Technical Data

Details of material properties
**➤ Chapter 1**

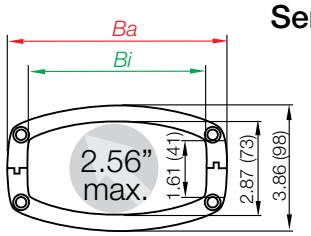


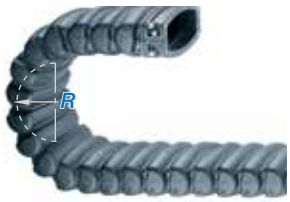
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

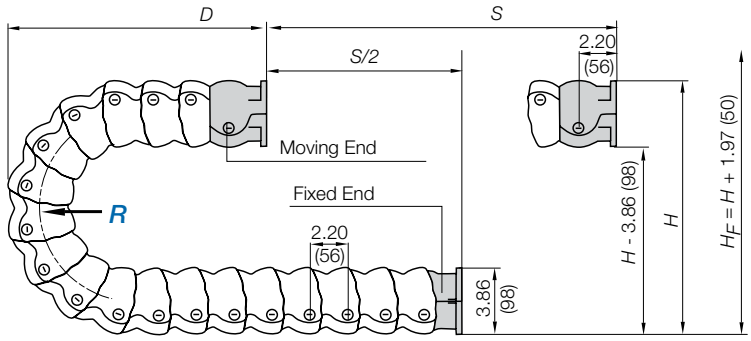
# E-Chain System® E2 Tubes
# Series RX56
# Installation Dimensions, Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/qs/echain.asp

## Series RX56 - snap-open along the outer radius






**Part Number Structure**

RX56-140-140-0

- 0 — Color - Black
- 140 — Bending radius
- 140 — Width
- RX56 — Series

Supplement part number with required radius. Example: RX56-140-140-0
Pitch: 2.20 in. (56 mm) per link links/ft(m) = 5.45 (18)

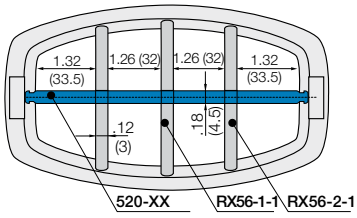
| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| RX56-140-□-0 | 5.51 (140) | 6.78 (172.2) | ≈ 2.57 (3.83) |
| | Choose from the radii below for all of the above sizes | | |
| | *Radius* (mm) | Example: RX56-140-140-0 | |

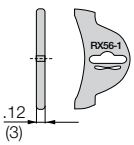
140

| | |
|---|---|
| R | 5.51 (140) |
| H | 14.88 (378) |
| D | 10.75 (273) |
| K | 21.85 (555) |

## Separators and shelves

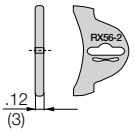
Vertical separators are used if a vertical subdivision of the E-Tube interior is required. By standard, vertical separators are assembled every other E-Tube link.




**Separator, central**

| | |
|---|---|
| Unassembled | **Part No. RX56-1** |
| Assembled | **Part No. RX56-1-1** |

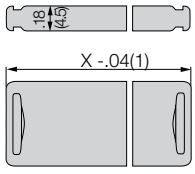



**Slotted Separator, lateral**

| | |
|---|---|
| Unassembled | **Part No. RX56-2** |
| Assembled | **Part No. RX56-2-1** |

### Shelves RX520-XX

Full width shelves lock into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally.



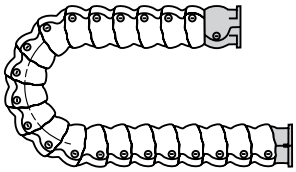

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.54 | (39) | **520-39** | **521-39** |
| 2.91 | (74) | **520-74** | **521-74** |
| 4.29 | (109) | **520-109** | **521-109** |
| 5.67 | (144) | **520-144** | **521-144** |

# E-Chain System® E2 Tubes
# Series RX56
# Mounting Brackets

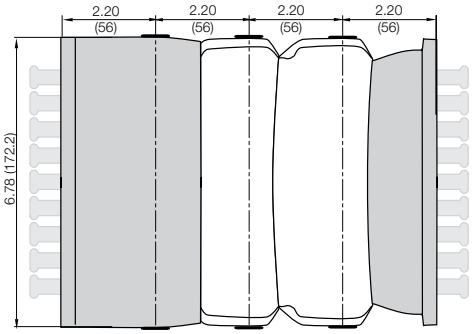
## Option: Flange mounting brackets

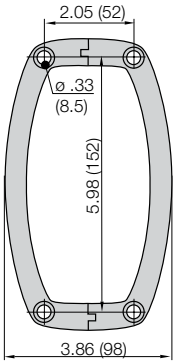
- Universally mountable with flange attachment capability
- Optional strain relief tiewrap plates
- Easy to open
- Optional M4 insert nuts

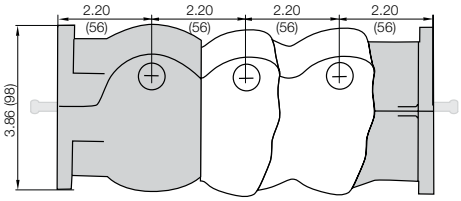
Moving end
RX561-140-1



Fixed end
RX561-140-2





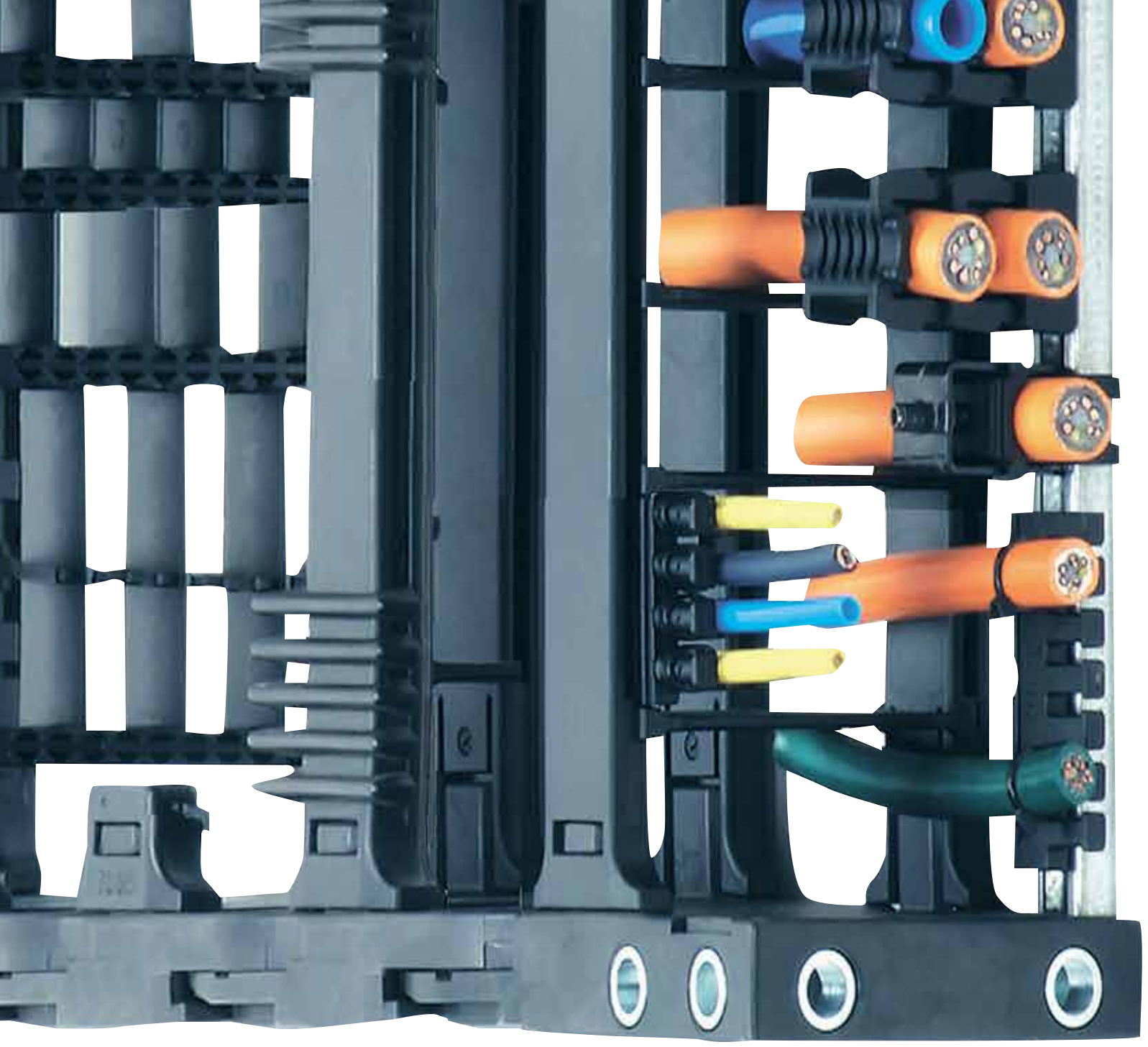

Shown with strain relief

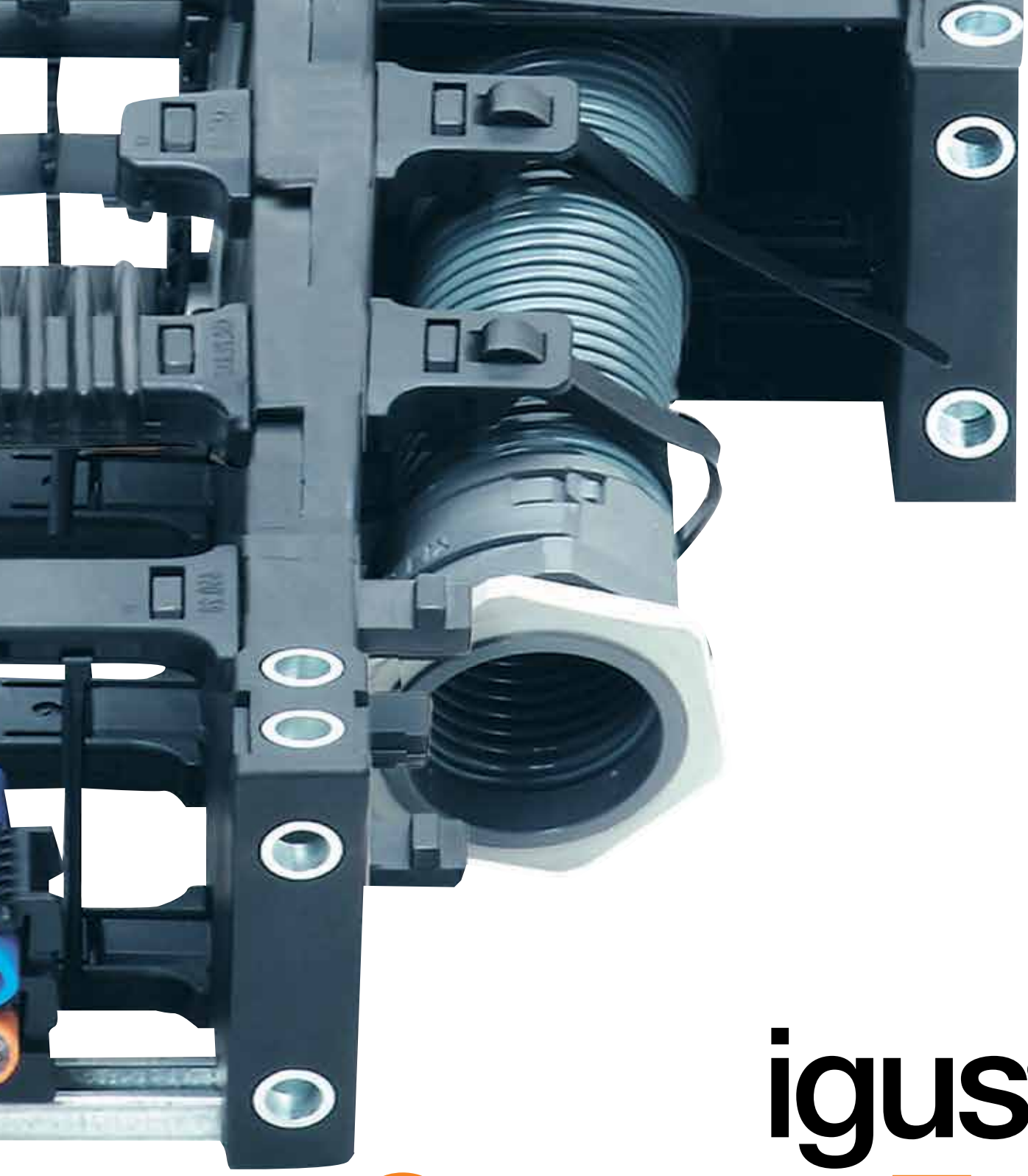
| Chain Type | Part No. full set with tiewrap plate | Part No. full set without tiewrap plate | Number of Teeth |
|---|---|---|---|
| RX56 | **upon request** | **RX561-120-12** | upon request |

**Full set, for both ends:**
RX561-140-12

**Single-part order:**
RX561-140-1 Mounting bracket **moving end**
RX561-140-2 Mounting bracket **fixed end**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS





igus®

# System E4

## E4-1, E4/Light, E4-1 Light

# E4-1
# E-Chain® series for almost all applications

The E4-1 system combines all the advantages of its three predecessors:

- Tongue and groove design provides greater lateral stability, high shear force on long travels and for longer unsupported lengths
- Ideal for side-mounted applications
- Noise dampening “brakes” and rubber dampers available
- Snap-open links for quick assembly, with or without pretension
- Dirt repellant and wear-resistant
- Side wear pads

Almost all accessories and mounting dimensions are identical. With the E4-1, the service life of your application can be still increased with lower costs.

Typical industries and applications

- Crane
- Indoor crane
- Composting plants
- Sewage plants
- Machine tools
- General mechanical engineering
- Material handling technology
- Refrigeration engineering
- Construction machinery
- Wood working
- Robotics and handling systems

Cleanroom test upon request

Reduced noise due to special rubber pads and special stop dog design

ESD classification: Electrically conductive ESD/ATEX version upon request

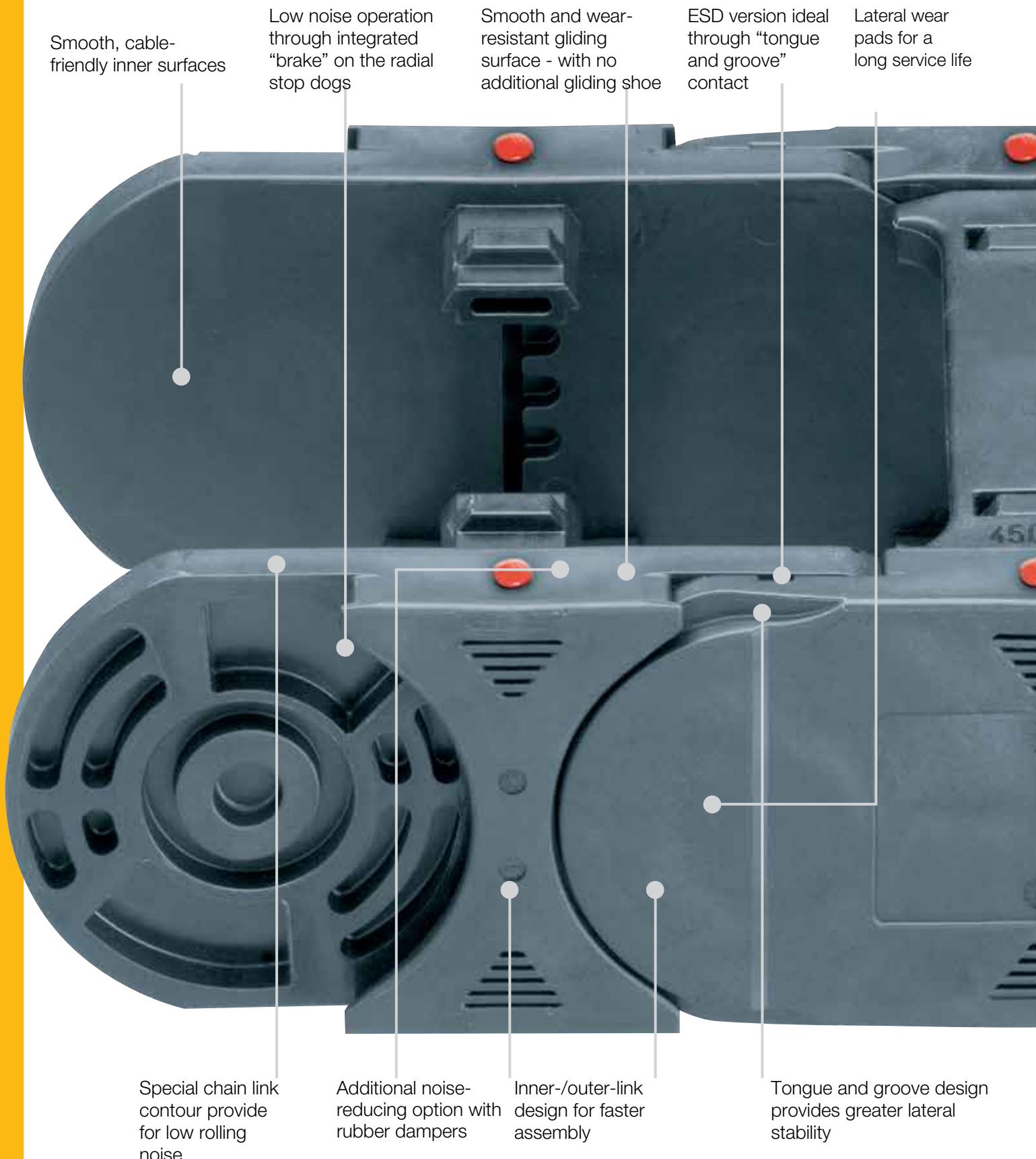
System E4-1 field proven in long travels

Fully enclosed E-Tubes available as special design with HT material for 1562°F hot chips

The E4-42 series in a machine tool, completely assembled with igus® Chainflex[a] cables

| Application | Design feature |
|---|---|
| **Long unsupported length** | Special stop dogs, tongue and groove link design |
| **Low-noise operation, unsupported gliding** | Integrated “brake”, smooth gliding surfaces - rubber dampers optional |
| **Hanging and standing installation** | Torsional stability through tongue and groove link design, “no camber” option by flipping the outer link |
| **Long travels** | High push/pull forces through tongue and groove link design and stop dogs, large and smooth gliding surfaces |
| **Side-mounted, unsupported** | Tongue and groove link design increases unsupported length by about 30% mounted on the side |
| **Fast assembly** | “Inner link/outer link” design |
| **Rotary motion** | Through simple flipping of links or easy modification, gliding surfaces on the side |
| **Increase service life of cable** | Smooth, wide solid polymer support for cables, many quick-mounting shelving options |
| **Increase service life of chains** | Large pins, optimized material, high stability |
| **ESD, ATEX** | Tongue and groove link design for secure contact surfaces in motion (special version in conductive material) |
| **Operation under dirt, chips, humidity** | Tongue and groove link design design prevents chain breakage, dirt-resistant design |

## The E4-1 Series combines the tongue and groove link design and the inner and outer link design of previous E4 constructions — all in one E-Chain®



# E4-1 Design Features

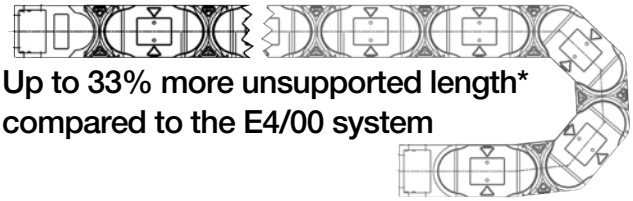
Stable crossbars with double locking

Types “with” or “without camber” by flipping outer links

Cable-friendly, rounded crossbar

Vertical stop dog system for larger unsupported lengths

## Cut costs by eliminating additional components with E4-1 E-Chains® - Proven durability and stability

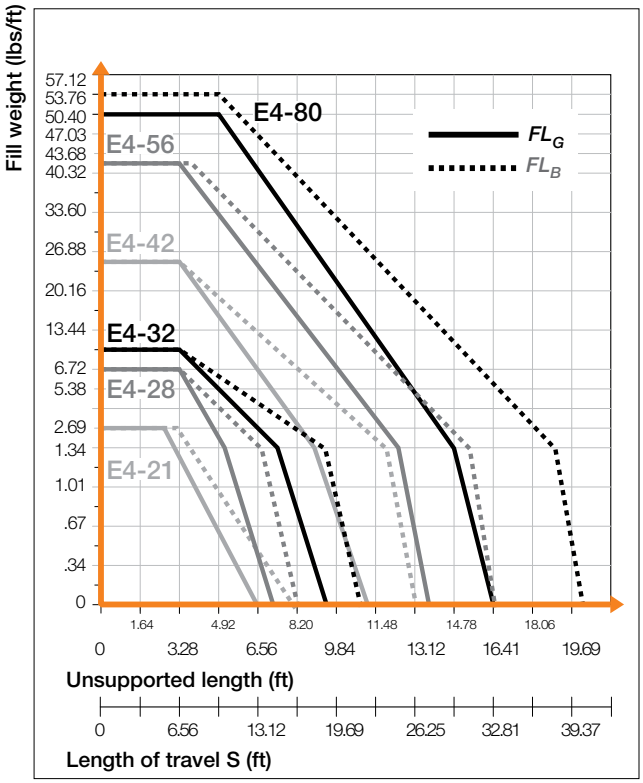


**Up to 33% more unsupported length* compared to the E4/00 system**

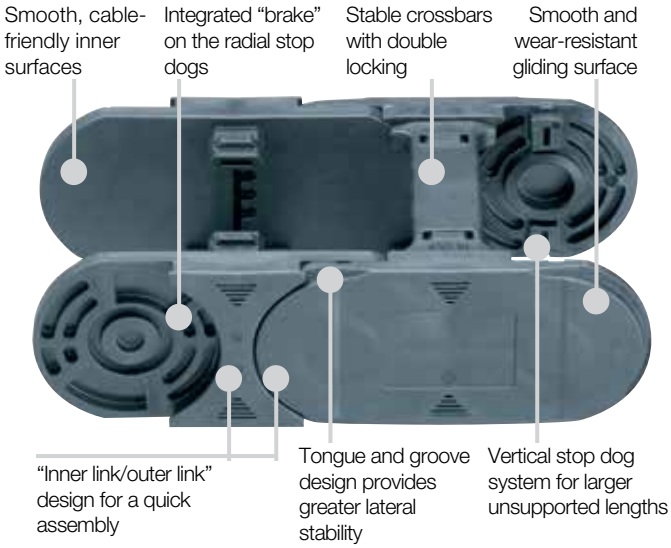
- Up to 133% higher tensile strength*
- Up to 33% more unsupported length*. Save in the purchase cost, as you can now use smaller E-Chains®
- Due to the large unsupported lengths or loads, oversized energy supply systems can be optimized with the igus® E4-1 system

* Compared to the igus® E4/00 system series
** Test at igus® laboratory: Sag tested with defined weight and length over 96h

**Selection table and assembly instructions ➤ page 6.7**



# E4-1 Design Features




- Available in 40 width sizes in both E-Chain® and E-Tube
- Interlocking side links for optimum lateral stability, for high push/pull force on long travels
- Long unsupported lengths
- "Brake" and rubber dampers as additional noise-reducing options
- Inner link/outer link design for quick assembly with various interior separation options
- Double locking stable crossbars that open from both sides
- Support Tray tool kit for the support of the lower run
  ➤ **Chapter 9**
- Find more technical data about the material, chemical resistance, temperatures ➤ **Chapter 1**

## Crossbars every link
### for particularly demanding applications

| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **E4-21** | .82 | (21) | 1.18-5.51 | (30-140) | 1.73-5.28 | (44-134) | 1.10 | (28) | 1.50-7.87 | (38-200) |
| **E4-28** | 1.10 | (28) | 1.57-11.81 | (40-300) | 2.36-12.60 | (60-320) | 1.65 | (42) | 2.16-9.84 | (55-250) |
| **E4-32** | 1.26 | (32) | 1.97-15.75 | (50-400) | 2.87-16.65 | (73-423) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **E4-42** | 1.65 | (42) | 1.97-15.75 | (50-400) | 2.99-16.77 | (76-426) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **E4-56** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.31-24.96 | (84-634) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **E4-80** | 3.15 | (80) | 1.97-23.62 | (50-600) | 3.94-25.59 | (100-650) | 4.25 | (108) | 5.91-39.37 | (150-1000) |
| **E4-112** | 4.41 | (112) | 1.97-23.62 | (50-600) | 4.02-25.67 | (102-652) | 5.51 | (140) | 7.87-39.37 | (200-1000) |
| **800** | 7.87 | (200) | 7.87-23.62 | (200-600) | 10.24-25.98 | (260-660) | 9.29 | (236) | 12.80-39.37 | (325-1000) |
| **840** | 8.03 | (204) | 3.94-22.16 | (100-563) | 6.30-24.53 | (160-623) | 9.29 | (236) | 12.80-39.37 | (325-1000) |
| **E4-350** | 13.78 | (350) | 15.75-31.50 | (400-800) | 21.26-37.01 | (540-940) | 17.72 | (450) | 19.69-39.37 | (500-1000) |

## Crossbars every 2nd link
### for almost all applications

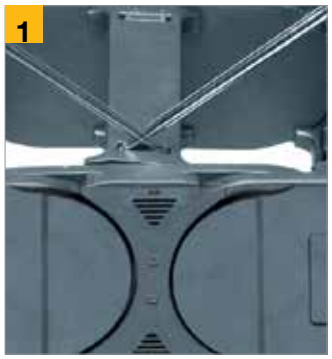
| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **H4-32** | 1.26 | (32) | 1.97-15.75 | (50-400) | 2.87-16.65 | (73-423) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **H4-42** | 1.65 | (42) | 1.97-15.75 | (50-400) | 2.99-16.77 | (76-426) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **H4-56** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.31-24.96 | (84-634) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **H4-80** | 3.15 | (80) | 1.97-23.62 | (50-600) | 3.94-25.59 | (100-650) | 4.25 | (108) | 5.91-39.37 | (150-1000) |
| **E4-112** | 4.41 | (112) | 1.97-23.62 | (50-600) | 4.02-25.67 | (102-652) | 5.51 | (140) | 7.87-39.37 | (200-1000) |

## E-Tubes
### fully enclosed, for complete cable protection

| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **R4-28** | 1.10 | (28) | 1.97-11.81 | (50-300) | 2.76-12.60 | (70-320) | 1.65 | (42) | 2.95-9.84 | (75-250) |
| **R4-32** | 1.26 | (32) | 1.97-11.81 | (50-300) | 2.87-12.72 | (73-323) | 2.13 | (54) | 4.92-11.81 | (125-300) |
| **R4-42** | 1.65 | (42) | 1.97-11.81 | (50-300) | 2.99-12.83 | (76-326) | 2.52 | (64) | 4.92-13.78 | (125-350) |
| **R4-56** | 2.20 | (56) | 2.95-18.19 | (75-462) | 4.29-19.57 | (109-497) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **R4-80** | 3.15 | (80) | 5.91-18.19 | (150-462) | 7.87-20.20 | (200-513) | 4.25 | (108) | 7.87-39.37 | (200-1000) |
| **R4-112** | 4.25 | (108) | 7.87-19.69 | (200-500) | 9.92-21.73 | (252-552) | 5.51 | (140) | 9.84-39.37 | (250-1000) |

# E-Chain System® E4-1
# Assembly instructions

## E-Chains® - Opening

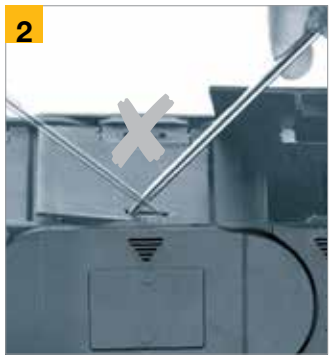



Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

## E-Tube - Opening

Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release

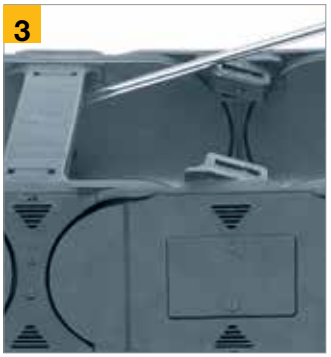



Release only **one side** to open the lid

## E-Chains® and E-Tubes - Assembling

Line up two inner side links side by side. Attach an outer side link between

Assemble crossbars - push down and snap in using a screwdriver




Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screw-driver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

## E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

Remove the outer links

Separate the E-Chain®

# E-Chain System® E4-1
# Series E4-21



## Price Index

Series E4-21

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 131 ft (40 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

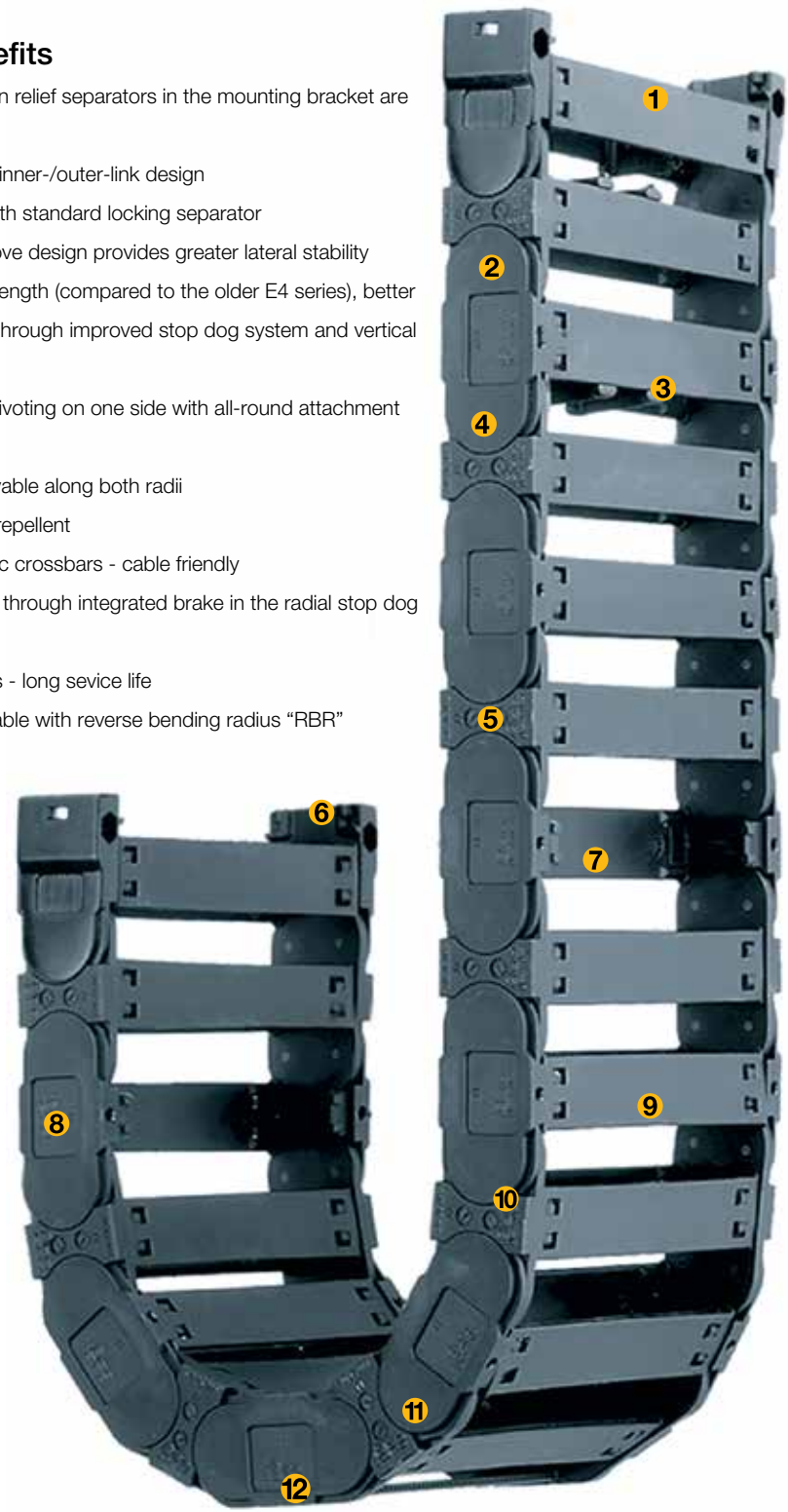
## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an economic one-sided snap-open E-Chain/tube is required
  ➤ **Series 1400/1450/1480/1500**
- When a one-sided snap-open E-Tube is required at a low price
  ➤ **Series R117/R118**

## Features & Benefits

1. Strain relief with strain relief separators in the mounting bracket are available
2. Straight run through inner-/outer-link design
3. Interior separation with standard locking separator
4. The tongue and groove design provides greater lateral stability
5. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
6. Mounting brackets pivoting on one side with all-round attachment option
7. Crossbars are removable along both radii
8. Smooth outline, dirt repellent
9. Wide, rounded plastic crossbars - cable friendly
10. Low-noise operation through integrated brake in the radial stop dog system
11. Optimized glide pads - long sevice life
12. E-Chains® also available with reverse bending radius “RBR”




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **E4-21-120-100-0** | **E-Chain®** |
| With 2 separators **T2112** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-210-120-12** | **Mounting Bracket** |

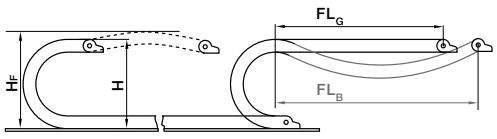
# E-Chain System® E4-1
# Series E4-21
# Installation Dimensions

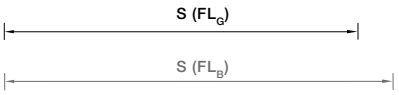
**Short travel, unsupported length**

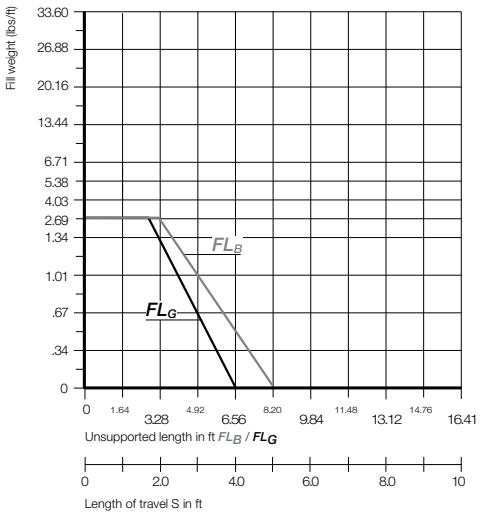
● $FL_B$ = unsupported with permitted sag

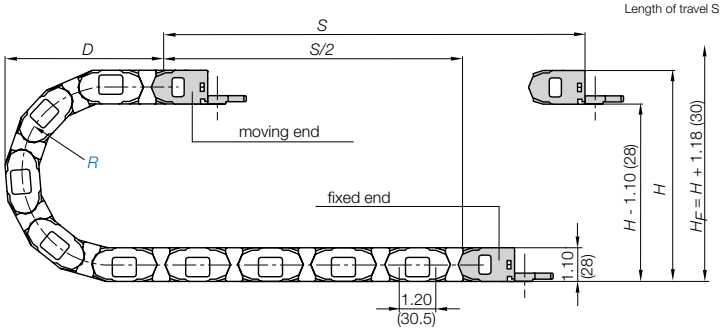
● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.20" (30.5 mm)
**Links per ft (m): =** 10.06 (33)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

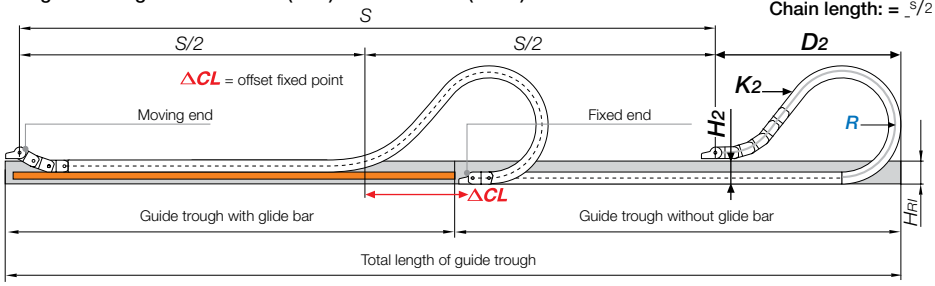
The required clearance height: $H_F = H$ **+ 1.18 in. (30 mm)** (with 1.01 lbs/ft (1.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 1.50 (038) | 1.89 (048) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|---|---|---|
| H | 4.09 (104) | 4.88 (124) | 6.06 (154) | 7.01 (178) | 8.98 (228) | 12.91 (328) | 16.85 (428) |
| D | 3.86 (98) | 4.25 (108) | 4.84 (123) | 5.31 (135) | 6.30 (160) | 8.27 (210) | 10.24 (260) |
| K | 7.28 (185) | 8.46 (215) | 10.24 (260) | 11.81 (300) | 14.96 (380) | 21.06 (535) | 27.17 (690) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10m) to max. 394 ft. (120m)**

**For center mount applications:**
**Chain length: =** $\frac{S}{2} + K_2$




| R | 1.50 (038) | 1.89 (048) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|---|---|---|
| H2 | - | - | - | - | 5.31 (135) | 5.31 (135) | 5.31 (135) |
| D2+25 | - | - | - | - | 19.29 (490) | 20.87 (530) | 26.18 (665) |
| K2 | - | - | - | - | 30.79 (782) | 36.22 (920) | 43.46 (1104) |
| ΔCL | - | - | - | - | 10.63 (270) | 14.57 (370) | 18.50 (470) |

**In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

### Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K$ = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1 main catalog**

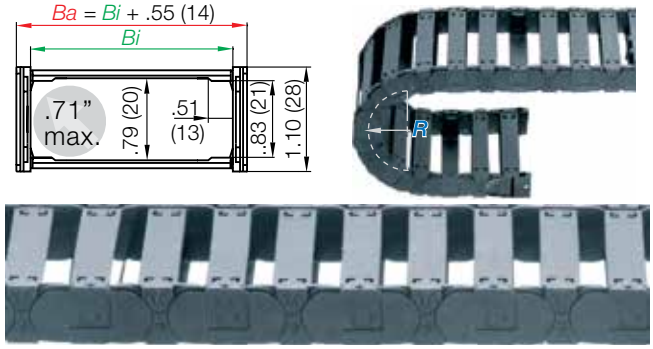
### Technical Data

Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

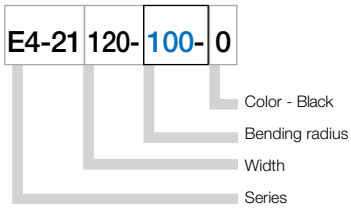
# E-Chain System® E4-1
# Series E4-21
# Product Range

## Series E4-21 - E-Chain® with crossbars every link

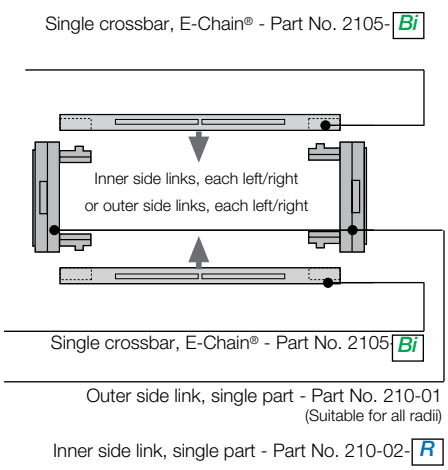


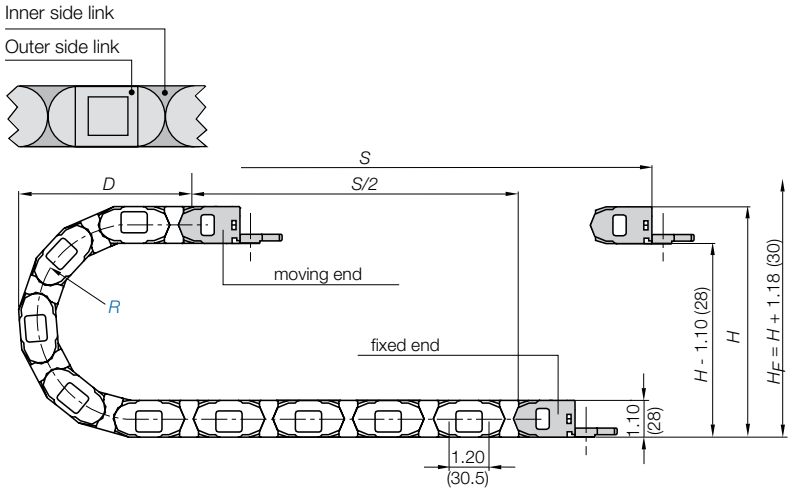

- Crossbars every link
- Removable crossbars
- Separator for locking crossbar (fixable) Standard
- Can be opened from both sides

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




**Supplement part number with required radius. Example: E4-21-120-100-0**
**Pitch: 1.20 in. (30.5 mm) per link links/ft(m) = 10.06 (33)**

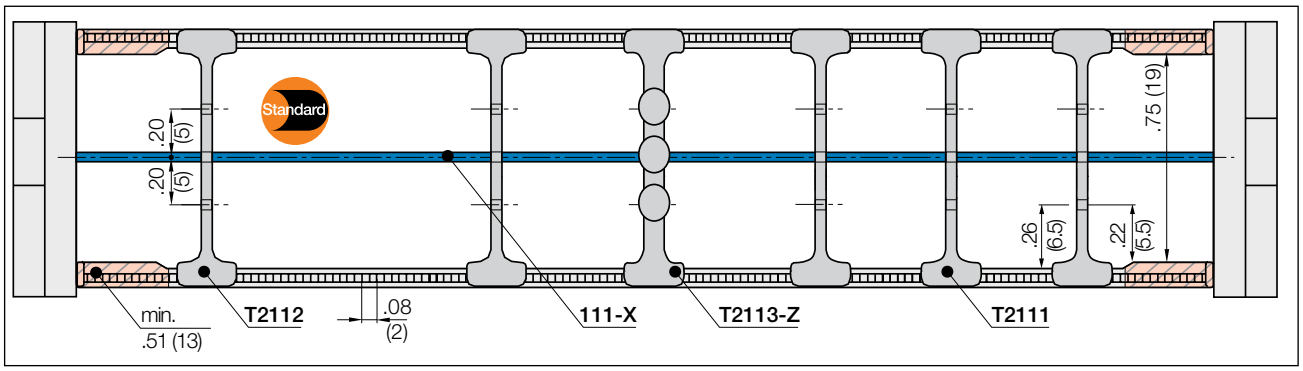
| Part Number. Snap-open inner radius | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E4-21-030-□-0 | 1.18 (30) | 1.73 (44) | ≈ 0.40 (0.60) |
| E4-21-040-□-0 | 1.57 (40) | 2.13 (54) | ≈ 0.43 (0.64) |
| E4-21-050-□-0 | 1.97 (50) | 2.52 (64) | ≈ 0.45 (0.67) |
| E4-21-060-□-0 | 2.36 (60) | 2.91 (74) | ≈ 0.48 (0.71) |
| E4-21-070-□-0 | 2.76 (70) | 3.31 (84) | ≈ 0.50 (0.74) |
| E4-21-080-□-0 | 3.15 (80) | 3.70 (94) | ≈ 0.52 (0.78) |
| E4-21-090-□-0 | 3.54 (90) | 4.09 (104) | ≈ 0.55 (0.82) |
| E4-21-100-□-0 | 3.94 (100) | 4.49 (114) | ≈ 0.57 (0.85) |
| E4-21-110-□-0 | 4.33 (110) | 4.88 (124) | ≈ 0.60 (0.89) |
| E4-21-120-□-0 | 4.72 (120) | 5.28 (134) | ≈ 0.62 (0.92) |
| E4-21-140-□-0 | 5.51 (140) | (154) | ≈ 0.67 (0.99) |

**Choose from the radii below for all of the above sizes**
**Radius (mm)** Example: E4-21-120-100-0

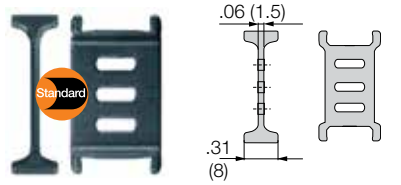
| | 038 | 048 | 063 | 075 | 100 | 150 | 200 |
|---|---|---|---|---|---|---|---|
| R | 1.50 (038) | 1.89 (048) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) |
| H | 4.09 (104) | 4.88 (124) | 6.06 (154) | 7.01 (178) | 8.98 (228) | 12.91 (328) | 16.85 (428) |
| D | 3.86 (98) | 4.25 (108) | 4.84 (123) | 5.31 (135) | 6.30 (160) | 8.27 (210) | 10.24 (260) |
| K | 7.28 (185) | 8.46 (215) | 10.24 (260) | 11.81 (300) | 14.96 (380) | 21.06 (535) | 27.17 (690) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-21
# Interior Separation - New Generation



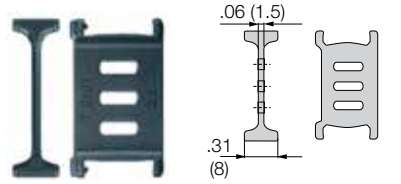

Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. T2102** |
| Assembled | **Part No. T2112** |

- **Standard separator T2102**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

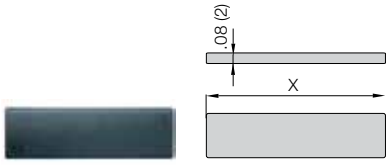



**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. T2101** |
| Assembled | **Part No. T2111** |

- **Notch separator T2101**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the E-Chain®. The separator cannot slide sideways during operation.

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 110-X** |
| Assembled | **Part No. 111-X** |

- **Full width shelf 110-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.18 (30) | **110-30** | **111-30** | 2.76 (70) | **110-70** | **111-70** | 4.33 (110) | **110-110** | **111-110** |
| 1.57 (40) | **110-40** | **111-40** | 3.15 (80) | **110-80** | **111-80** | 4.72 (120) | **110-120** | **111-120** |
| 1.97 (50) | **110-50** | **111-50** | 3.54 (90) | **110-90** | **111-90** | | | |
| 2.36 (60) | **110-60** | **111-60** | 3.94 (100) | **110-100** | **111-100** | | | |

## Separator with integrated strain relief

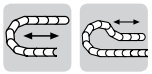
**Strain relief separator Part No. T2103-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-21
# Mounting Brackets - Polymer

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

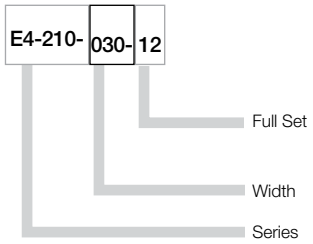


**Standard**

## Option: pivoting

- Recommended for unsupported and gliding applications
- KMA mounting bracket with attachment points on all sides
- Well suited for tight installation conditions
- Integrated strain relief possible

### Part Number Structure



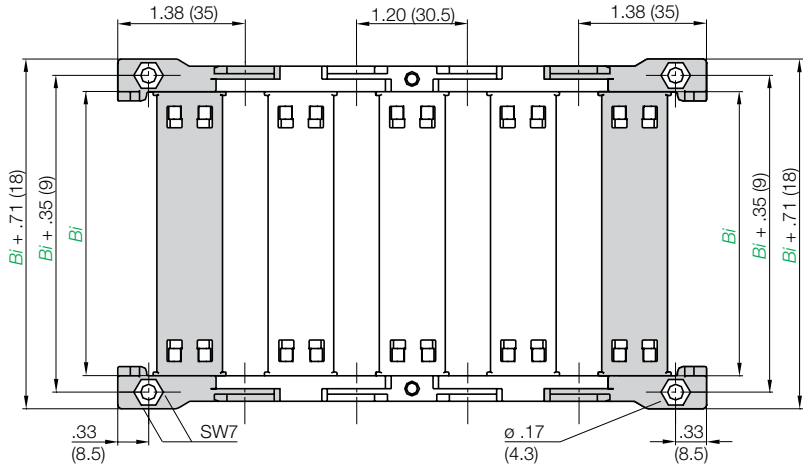

**Full set, for both ends:**

E4-210- 030- 12

**Single-part order:**

E4-210- 030- 1 Mounting bracket **moving end**

E4-210- 030- 2 Mounting bracket **fixed end**




| Width | Part No. Full Set | Bi in. | Bi (mm) | Width | Part No. Full Set | Bi in. | Bi (mm) |
|---|---|---|---|---|---|---|---|
| -030- | **E4-210-030-12** | 1.18 | (30) | -080- | **E4-210-080-12** | 3.15 | (80) |
| -040- | **E4-210-040-12** | 1.57 | (40) | -090- | **E4-210-090-12** | 3.54 | (90) |
| -050- | **E4-210-050-12** | 1.97 | (50) | -100- | **E4-210-100-12** | 3.94 | (100) |
| -060- | **E4-210-060-12** | 2.36 | (60) | -110- | **E4-210-110-12** | 4.33 | (110) |
| -070- | **E4-210-070-12** | 2.75 | (70) | -120- | **E4-210-120-12** | 4.72 | (120) |

## Special feature mounting brackets KMA: Series E4-21

- Mounting brackets with attachment points on all sides
- Mounting hole is countersunk for socket head screw (M4) and hexagon nut (M4)
- **Attention:** Mounting brackets always need to end with an inner link (odd number of links)

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-28/R4-28

1.10 1.10

## Price Index

Series E4-28 Series R4-28

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 16.4 ft (5 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

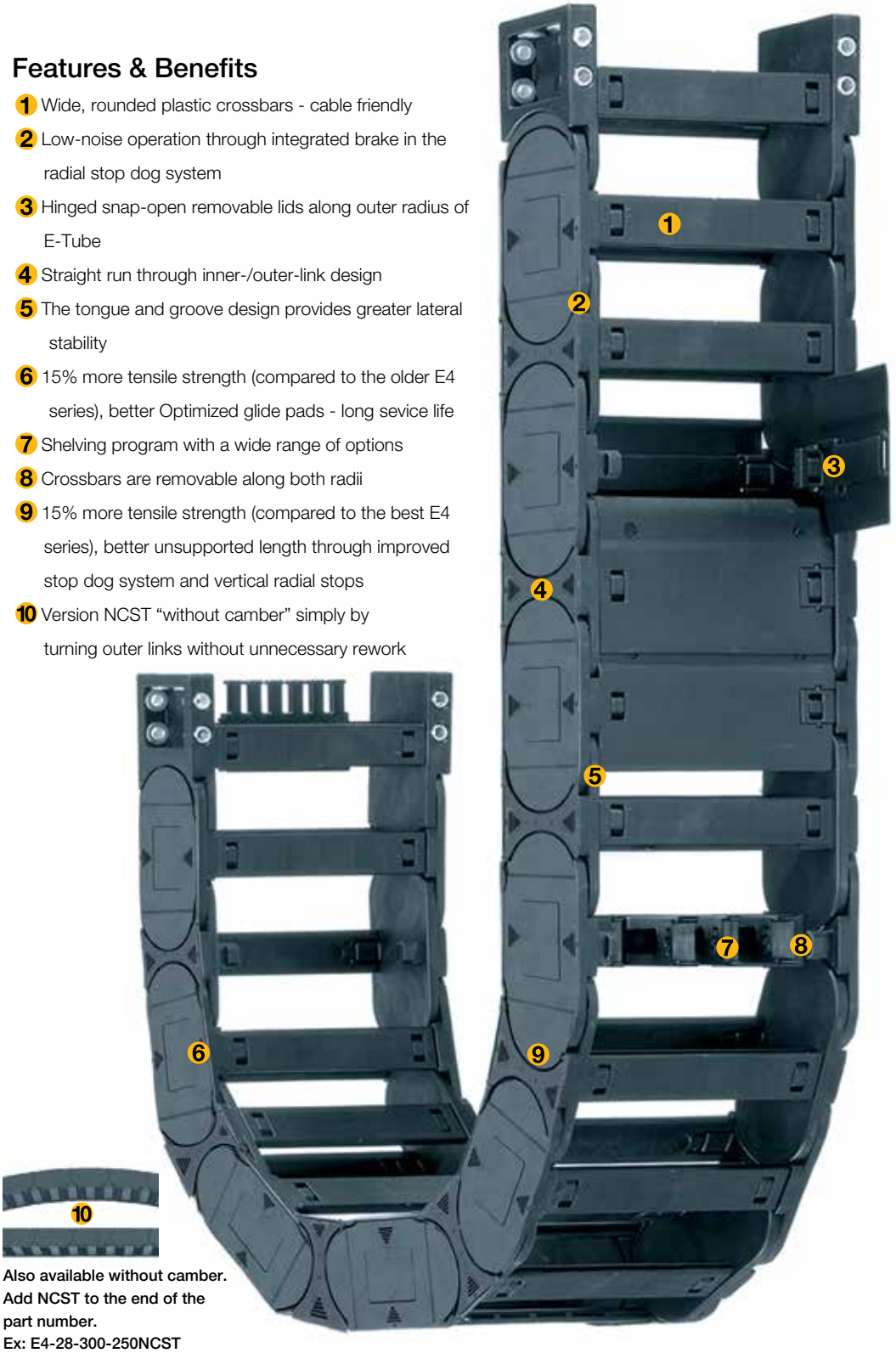
## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-29**
  ➤ **Series R6-29**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 2400/2450/2480/2500**

## Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. 15% more tensile strength (compared to the older E4 series), better Optimized glide pads - long sevice life
7. Shelving program with a wide range of options
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the best E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework




**Also available without camber. Add NCST to the end of the part number. Ex: E4-28-300-250NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **E4-28-300-250-0** | **E-Chain®** |
| With 2 separators **2211** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-280-300-12** | **Mounting Bracket** |

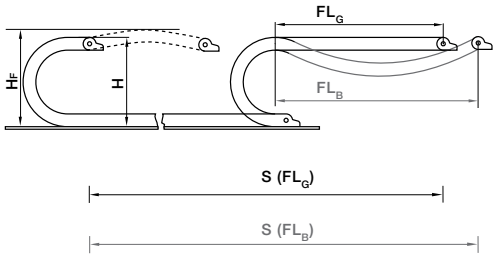
# E-Chain System® E4-1
# Series E4-28/R4-28
# Installation Dimensions

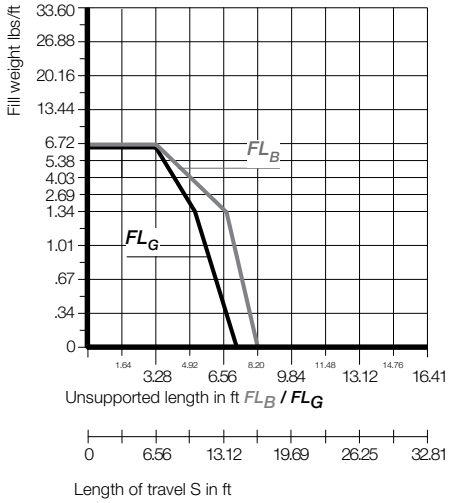


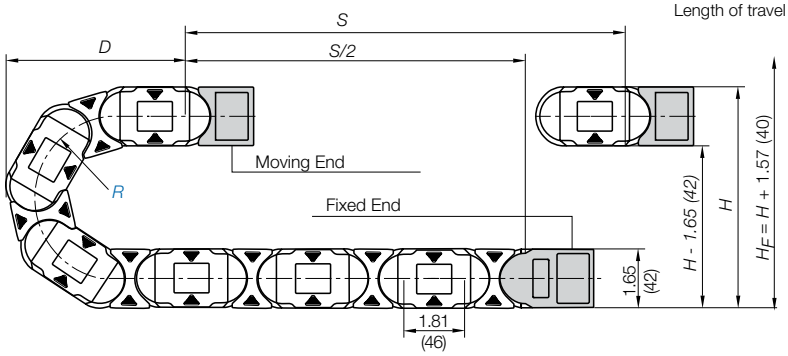
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H +$ (with .67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H | 5.98 (152) | 6.61 (168) | 7.56 (192) | 9.53 (242) | 11.50 (292) | 13.46 (342) | 15.43 (392) | 17.40 (442) | 21.34 (542) |
| D | 5.71 (145) | 6.02 (153) | 6.50 (165) | 7.48 (190) | 8.46 (215) | 9.45 (240) | 10.43 (265) | 11.42 (290) | 13.39 (340) |
| K | 10.43 (265) | 11.42 (290) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

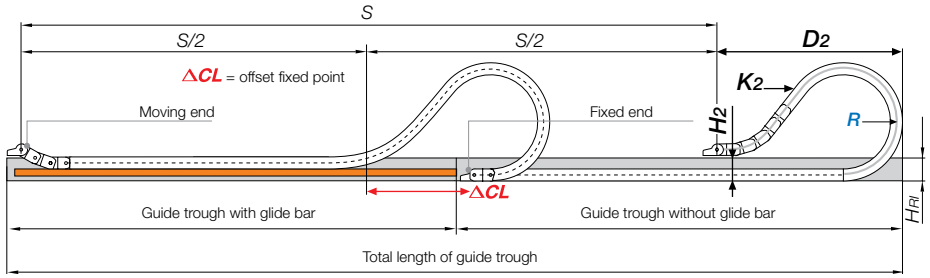
## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R +$ *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)**




$S/2 + K_2$

| R | 2.17 (055) | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H2 | - | - | - | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) |
| D2 | - | - | - | 13.78 (350) | 19.29 (490) | 20.87 (530) | 26.18 (665) | 28.74 (730) | 36.81 (935) |
| K2 | - | - | - | 23.54 (598) | 30.79 (782) | 36.22 (920) | 43.46 (1104) | 48.89 (1242) | 63.39 (1610) |
| ΔCL | - | - | - | 5.91 (150) | 10.63 (270) | 11.81 (300) | 15.75 (400) | 17.72 (450) | 23.62 (600) |

**In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.**

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

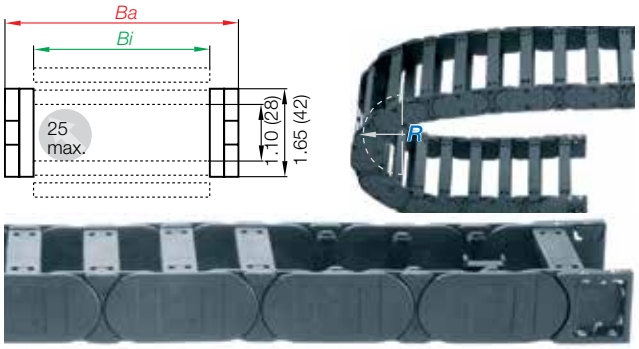
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-28/R4-28
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-28 - E-Chain® with crossbars every link



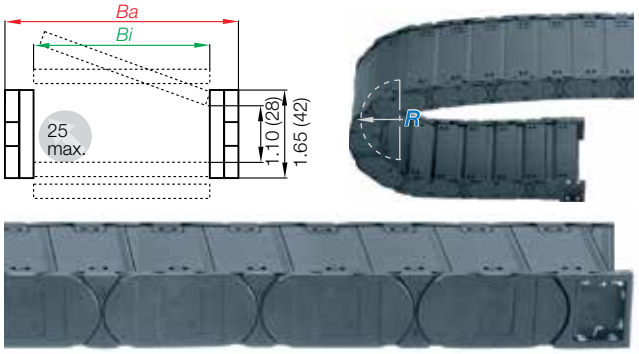

- Robust solution with rossbars every link
- Can be opened from two sides
- Removable crossbars

**Part Number Structure**

E4-28- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

## Series R4-28 - fully enclosed E-Tube



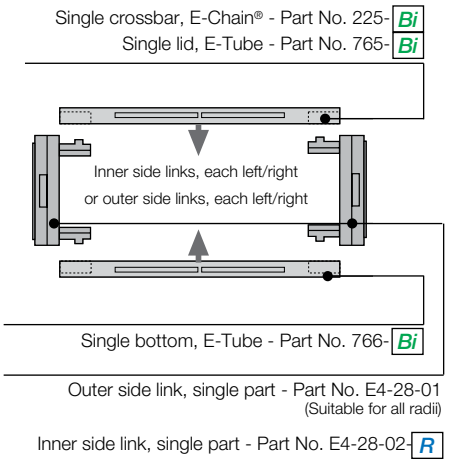

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

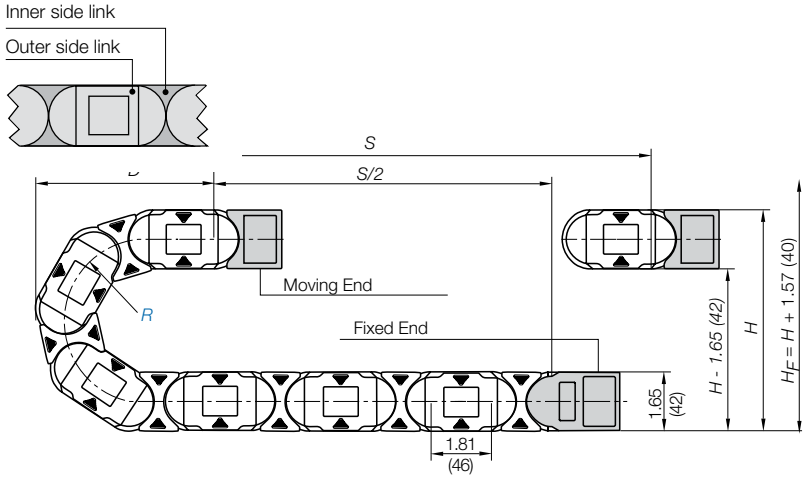
**Part Number Structure**

R4-28- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-28/R4-28
# Product Range



Supplement part number with required radius. Example: E4-28-300-250 -0
Pitch: 1.81 in. (46mm) per link links/ft (m) = 6.71 (22)

| Part Number. Crossbars Every link | Tube Version | | | *Bi* in. (mm) | *Ba* in. (mm) | E4-28 lbs/ft (kg/m) | R4-28 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|
| E4-28-040- | | ☐ | -0 | 1.57 (40) | 2.36 (60) | ≈ 0.71 (1.06) | – |
| E4-28-050- | R4-28-050- | ☐ | -0 | 1.97 (50) | 2.76 (70) | ≈ 0.75 (1.11) | ≈ 1.48 (2.20) |
| E4-28-052 | | ☐ | -0 | 2.05 (52) | 2.83 (72) | ≈ 0.76 (1.13) | – |
| E4-28-062- | | ☐ | -0 | 2.44 (62) | 3.23 (82) | ≈ 0.79 (1.17) | – |
| E4-28-070- | | ☐ | -0 | 2.76 (70) | 3.54 (90) | ≈ 0.81 (1.20) | – |
| E4-28-075- | R4-28-075 | ☐ | -0 | 2.95 (75) | 3.74 (95) | ≈ 0.83 (1.23) | ≈ 1.56 (2.32) |
| E4-28-087- | | ☐ | -0 | 3.43 (87) | 4.21 (107) | ≈ 0.86 (1.28) | – |
| E4-28-100- | R4-28-100- | ☐ | -0 | 3.94 (100) | 4.72 (120) | ≈ 0.92 (1.37) | ≈ 1.71 (2.54) |
| E4-28-125- | R4-28-125- | ☐ | -0 | 4.92 (125) | 5.71 (145) | ≈ 1.01 (1.51) | ≈ 1.87 (2.78) |
| E4-28-150- | R4-28-150- | ☐ | -0 | 5.91 (150) | 6.69 (170) | ≈ 1.08 (1.61) | ≈ 2.03 (3.02) |
| E4-28-175- | R4-28-175- | ☐ | -0 | 6.89 (175) | 7.68 (195) | ≈ 1.15 (1.71) | ≈ 2.19 (3.26) |
| E4-28-200- | R4-28-200- | ☐ | -0 | 7.87 (200) | 8.66 (220) | ≈ 1.24 (1.84) | ≈ 2.35 (3.50) |
| E4-28-225- | R4-28-225- | ☐ | -0 | 8.86 (225) | 9.65 (245) | ≈ 1.34 (1.99) | ≈ 2.57 (3.82) |
| E4-28-250- | R4-28-250- | ☐ | -0 | 9.84 (250) | 10.63 (270) | ≈ 1.44 (2.14) | ≈ 2.67 (3.98) |
| E4-28-275- | | ☐ | -0 | 10.83 (275) | 11.61 (295) | ≈ 1.53 (2.27) | – |
| E4-28-300- | R4-28-300- | ☐ | -0 | 11.81 (300) | 12.60 (320) | ≈ 1.61 (2.39) | ≈ 3.00 (4.46) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-28-300-250 -0

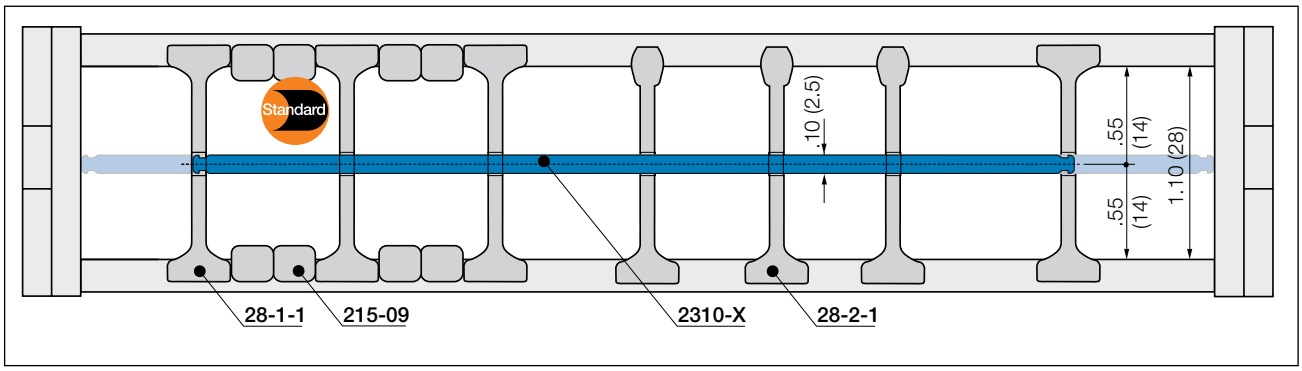
| | 055* | 063* | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.17 (055*) | 2.48 (063*) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| *H* | 5.98 (152) | 6.61 (168) | 7.56 (192) | 9.53 (242) | 11.50 (292) | 13.46 (342) | 15.43 (392) | 17.40 (442) | 21.34 (542) |
| *D* | 5.71 (145) | 6.02 (153) | 6.50 (165) | 7.48 (190) | 8.46 (215) | 9.45 (240) | 10.43 (265) | 11.42 (290) | 13.39 (340) |
| *K* | 10.43 (265) | 11.42 (290) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

* This radius is not available for the R4-28 Series
0 = Standard color black.
For other colors see Chapter 1

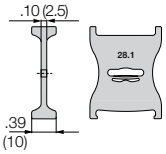
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
## Series E4-28
## Interior Separation - Only for E-Chains® - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



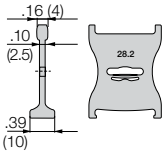

In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 28-1** |
| Assembled | **Part No. 28-1-1** |

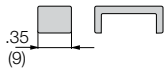
- **Standard separator 28-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 28-2** |
| Assembled | **Part No. 28-2-1** |

- **Separator 28-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

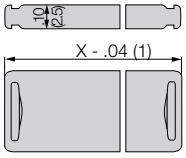



**Spacer for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

- **Spacer 205-09**
  Separators can be fixed in position by spacers. The available interior height is reduced by .08 (2 mm) per spacer (.16 (4 mm) when spacers are fitted on both sides. To avoid this, the parts can also be installed from the outside on the opening crossbar. (Not for long travel applications.)

## Lockable full-width shelves - for the standard interior separation

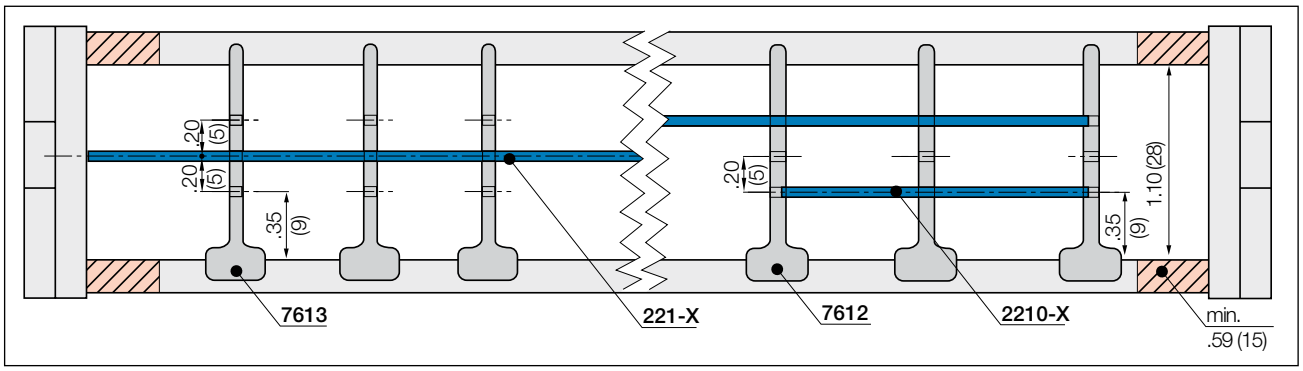



**Full width shelf, lockable**

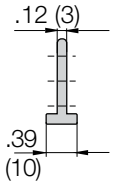
| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 015 | **2300-15** | **2310-15** | 060 | **2300-60** | **2310-60** | 087 | **2300-87** | **2310-87** |
| 025 | **2300-25** | **2310-25** | 062 | **2300-62** | **2310-62** | 090 | **2300-90** | **2310-90** |
| 030 | **2300-30** | **2310-30** | 065 | **2300-65** | **2310-65** | 100 | **2300-100** | **2310-100** |
| 038 | **2300-38** | **2310-38** | 070 | **2300-70** | **2310-70** | 103 | **2300-103** | **2310-103** |
| 040 | **2300-40** | **2310-40** | 075 | **2300-75** | **2310-75** | 110 | **2300-110** | **2310-110** |
| 050 | **2300-50** | **2310-50** | 077 | **2300-77** | **2310-77** | 120 | **2300-120** | **2310-120** |
| 057 | **2300-57** | **2310-57** | 080 | **2300-80** | **2310-80** | 125 | **2300-125** | **2310-125** |




Note E-Tube: Please maintain a lateral spacing of .59" (15 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link

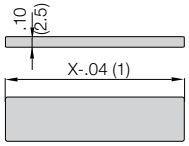



**Separator, E-Tubes only**

| | |
|---|---|
| Unassembled | **Part No. 7603** |
| Assembled | **Part No. 7613** |

- **Separator 7603 (E-Tubes only)**
  is used when vertical separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

## Full-width shelves - for the standard interior separation

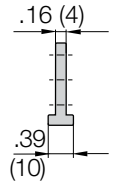



**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 220-X** |
| Assembled | **Part No. 221-X** |

- **Full width shelf 220-X**
  is used in applications with many thin cables with similar diameters. Full width shelves can be arranged at 3 different heights in .20" (5 mm) increments.

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.57 | (40) | **220-40** | **221-40** |
| 1.97 | (50) | **220-50** | **221-50** |
| 2.44 | (62) | **220-62** | **221-62** |
| 2.76 | (70) | **220-70** | **221-70** |
| 2.95 | (75) | **220-75** | **221-75** |
| 3.43 | (87) | **220-87** | **221-87** |
| 3.94 | (100) | **220-100** | **221-100** |
| 1.92 | (125) | **220-125** | **221-125** |
| 5.91 | (150) | **220-150** | **221-150** |
| 6.89 | (175) | **220-175** | **221-175** |
| 7.87 | (200) | **220-200** | **221-200** |




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 7602** |
| Assembled | **Part No. 7612** |

- **Notch separator 7602**
  Can be locked in .08 (2mm) increments due to notches on the crossbars of the E-Chain®. The separator cannot slide sideways during operation.

## Separator with integrated strain relief

**Strain relief separator Part No. T2103-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

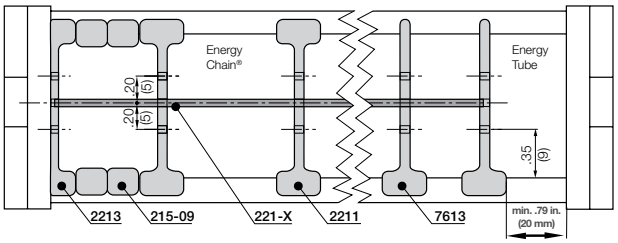
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-28
# Interior Separation - Previous Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

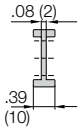
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least .79 in. (20mm) for E-Tubes and




**STANDARD**

**Vertical separator 2201**

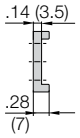



**Vertical separator (Chain only)**

| | |
|---|---|
| Unassembled | **Part No. 2201** |
| Assembled | **Part No. 2211** |

- **Vertical separator 2201 for E-Chains®**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

**Side plate 2203**




**Side plate (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 2203** |
| Assembled | **Part No. 2213** |

- **Side plate 2203 for E-Chains®**
  Used in conjunction with full-width shelf 220-X, this option is used for applications involving many thin cables with similar diameters.

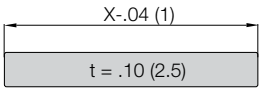
**Spacers 205-09**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

### Full-width shelf 220-XX



| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.57 | (040) | **220-40** | **221-40** |
| 1.97 | (050) | **220-50** | **221-50** |
| 2.44 | (062) | **220-62** | **221-62** |
| 2.76 | (070) | **220-70** | **221-70** |
| 2.95 | (075) | **220-75** | **221-75** |
| 3.43 | (087) | **220-87** | **221-87** |

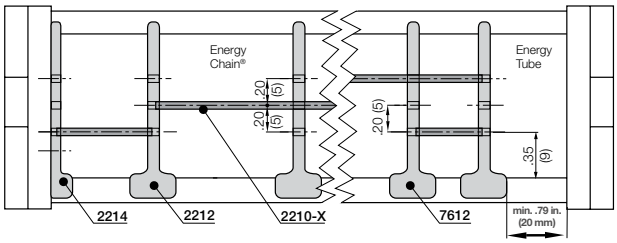
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.94 | (100) | **220-100** | **221-100** |
| 4.92 | (125) | **220-125** | **221-125** |
| 5.91 | (150) | **220-150** | **221-150** |
| 6.89 | (175) | **220-175** | **221-175** |
| 7.87 | (200) | **220-200** | **221-200** |

# E-Chain System® E4-1
# Series R4-28
# Interior Separation - Previous Generation

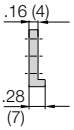
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1,** for layout recommendations.



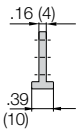

- **Side plates 2204**
  This component is used to form the basic pattern of a shelf system.




| Side plate | |
|---|---|
| Unassembled | **Part No. 2204** |
| Assembled | **Part No. 2214** |

**Side plate 2204**

- **Vertical separator 2202 for E-Chain®**
  This component is used to form the basic pattern of a shelf system.




| Vertical separator (chain only) | |
|---|---|
| Unassembled | **Part No. 2202** |
| Assembled | **Part No. 2212** |

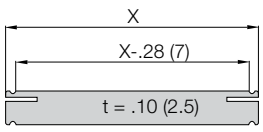
**Vertical separator 2202**

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .20" (5mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |
| 1.69 | (43) | **2200-43** | **2210-43** |
| 1.89 | (48) | **2200-48** | **2210-48** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |
| 4.88 | (124) | **2200-124** | **2210-124** |
| 5.87 | (149) | **2200-149** | **2210-149** |



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

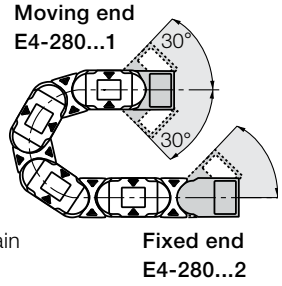
# E-Chain System® E4-1
# Series E4-28/R4-28
# Mounting Bracket - KMA

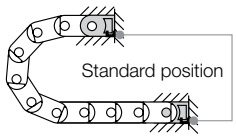
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

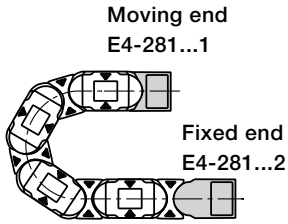
- Unsupported and gliding applications
- mounting capabilites on all sides
- Bolted connection outside of chain cross-section
- Space-restricted conditions
- corrosion-resistant

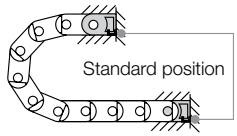




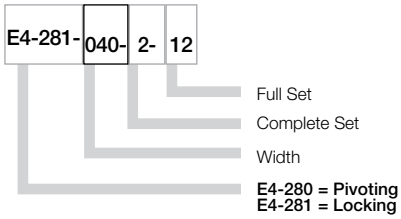

## Option 2: locking

- Vertical hanging/standing applications
- For high accelerations
- Universally mountable
- Various mounting positions
- Corrosion-resistant





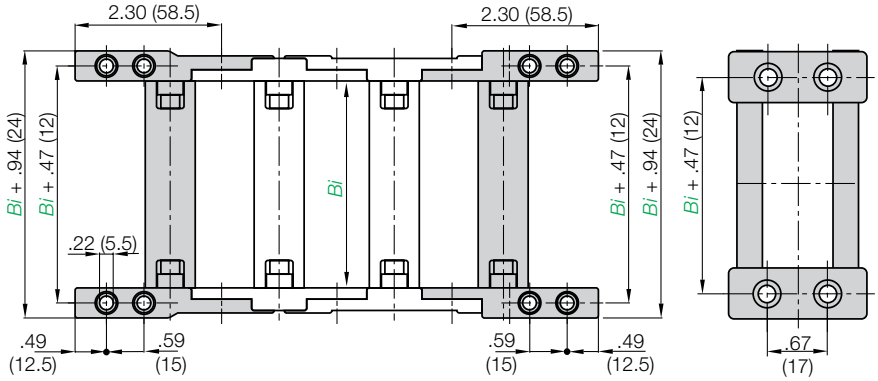

### Part Number Structure




**Full set, for both ends:**
E4-280- 040- 12

**Single-part order:**
E4-280- 040- 1
Mounting bracket **moving end**

E4-280- 040- 2
Mounting bracket **fixed end**




**Part number example is shown for pivoting brackets.**
**For locking brackets change part number to E4-281**

**Part No. Full Set** (pivoting)
**Series E4-28**
**E4-28-Width-12**

| Width | Part No. Full Set | | | | | *Bi* |
|---|---|---|---|---|---|---|
| | Pivoting | | Locking | | | in. (mm) |
| -040 | E4-280 | | E4-281 | | -040-12 | 1.57 (40) |
| -050 | E4-280 | R4-280 | E4-281 | R4-281 | -050-12 | 1.97 (50) |
| -052 | E4-280 | | E4-281 | | -052-12 | 2.05 (52) |
| -062 | E4-280 | | E4-281 | | -062-12 | 2.44 (62) |
| -070 | E4-280 | | E4-281 | | -070-12 | 2.76 (70) |
| -075 | E4-280 | R4-280 | E4-281 | R4-281 | -075-12 | 2.95 (75) |
| -087 | E4-280 | | E4-281 | | -087-12 | 3.43 (87) |
| -100 | E4-280 | R4-280 | E4-281 | R4-281 | -100-12 | 3.94 (100) |
| -125 | E4-280 | R4-280 | E4-281 | R4-281 | -125-12 | 4.92 (125) |
| -150 | E4-280 | R4-280 | E4-281 | R4-281 | -150-12 | 5.91 (150) |
| -175 | E4-280 | R4-280 | E4-281 | R4-281 | -175-12 | 6.89 (175) |
| -200 | E4-280 | R4-280 | E4-281 | R4-281 | -200-12 | 7.87 (200) |
| -225 | E4-280 | R4-280 | E4-281 | R4-281 | -225-12 | 8.86 (225) |
| -250 | E4-280 | R4-280 | E4-281 | R4-281 | -250-12 | 9.84 (250) |
| -275 | E4-280 | | E4-281 | | -275-12 | 10.83 (275) |
| -300 | E4-280 | R4-280 | E4-281 | R4-281 | -300-12 | 11.81 (300) |

**Due to the design of the E4-28 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-1**

Strain relief tiewrap plate
Part No. 2050-Z can be fixed on the last crossbar.
**Details ➤ chapter 10 main catalog**

| Part. No. | Width [mm] | Number of teeth |
|---|---|---|
| 2050.Z | 60 | 6 |

# E-Chain System® E4-1
# Series E4-28/R4-28
# Guide Trough



Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 96-30**
- 1/2 travel length of glide bars
  **Part No. 92-01**
- Installation sets as end connectors
  **Part No. 95-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft. (50 m)
Center mounted

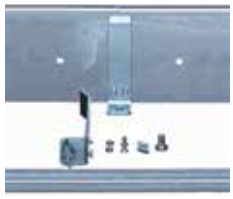
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 96-30**

= 13 sections of 6.56 ft. (2 m) glide bar
**Part No. 92-01**

**Required number of installation sets**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**95-50-XXX**
**Example:** 95-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars
Right: Guide troughs without glide bars**

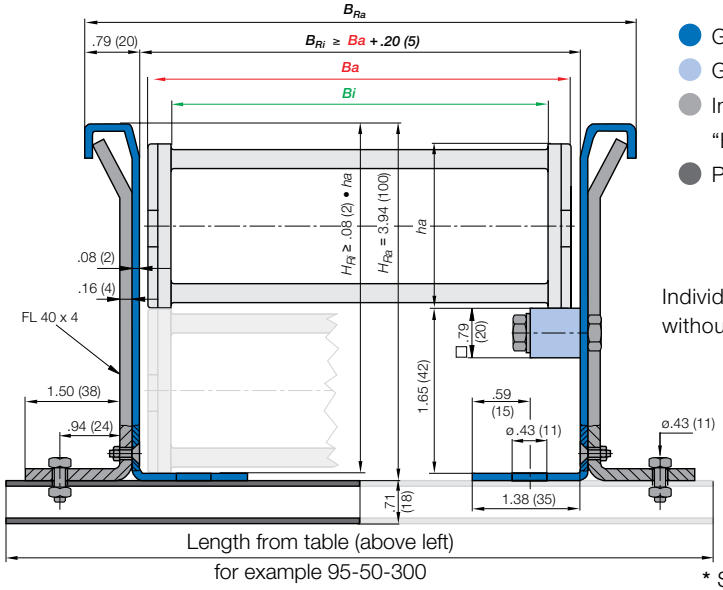


**Installation sets as section connectors**

Width of Crossbar
E4-28-**040**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-040** | 2.56 (65) | * |
| **-050** | 2.95 (75) | **95-50-200** |
| **-052** | 2.99 (76) | **95.50-200** |
| **-062** | 3.43 (87) | **95-50-200** |
| **-070** | 3.74 (95) | **95-50-200** |
| **-075** | 3.94 (100) | **95-50-225** |
| **-100** | 4.92 (125) | **95-50-250** |
| **-125** | 5.91 (150) | **95-50-275** |
| **-150** | 6.89 (175) | **95-50-300** |
| **-175** | 7.87 (200) | **95-50-325** |
| **-200** | 8.86 (225) | **95-50-350** |
| **-225** | 9.84 (250) | **95-50-375** |
| **-250** | 10.83 (275) | **95-50-400** |
| **-275** | 11.81 (300) | **95-50-425** |
| **-300** | 12.80 (325) | **95-50-450** |

Standard length profile rail




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32

1.26 1.26

## Price Index

Series E4-32 Series H4-32

Series R4-32

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 16.4 ft (5 m) |
| Side-mounted, unsupp. ≤ 4.92 ft (1.5 m) |
| Rotary requires further calculation |

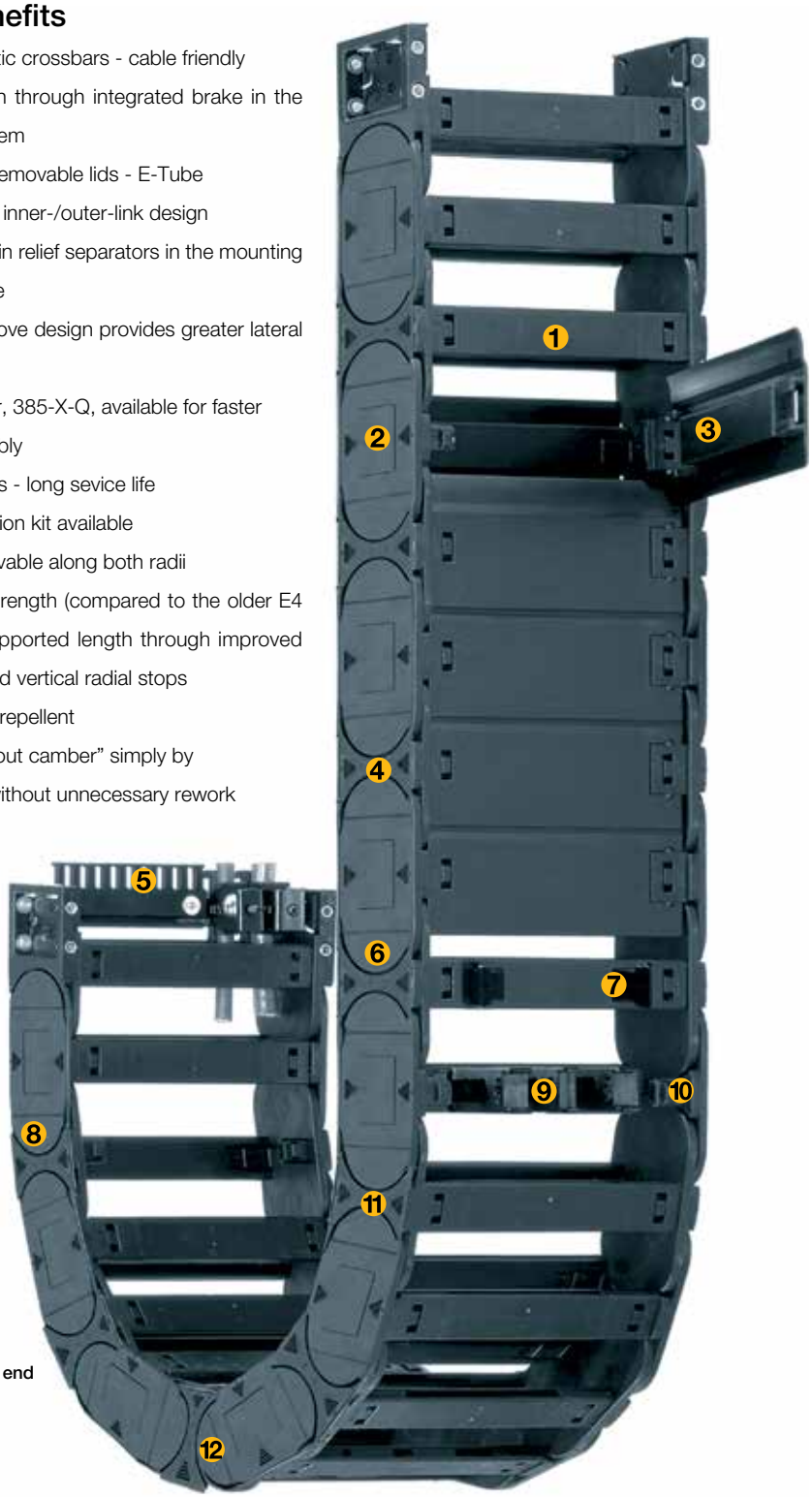
## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain® is required
  ➤ **Series E6-35**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 2600/2650/2680/2700**

## Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids - E-Tube
4. Straight run through inner-/outer-link design
5. Strain relief with strain relief separators in the mounting bracket are available
6. The tongue and groove design provides greater lateral stability
7. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
8. Optimized glide pads - long sevice life
9. New Interior separation kit available
10. Crossbars are removable along both radii
11. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
12. Smooth outline, dirt repellent
13. Version NCST “without camber” simply by turning outer links without unnecessary rework



**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-32-30-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 13.12 ft (4 m) **E4-32-30-300-0** | **E-Chain®** |
| With 2 separators **282** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-320-30-12P** | **Mounting Bracket** |

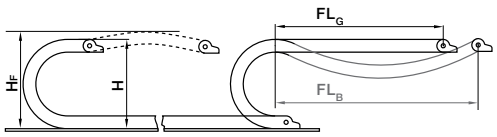
# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32
# Installation Dimensions

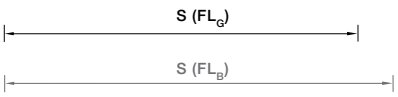


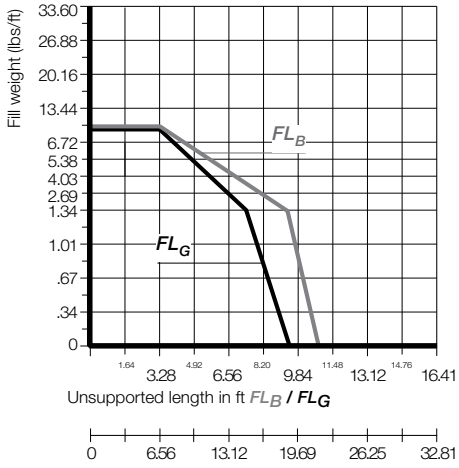
## Short travel, unsupported length

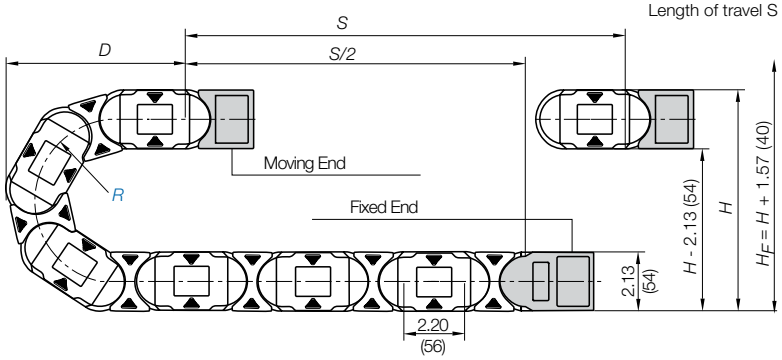
● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

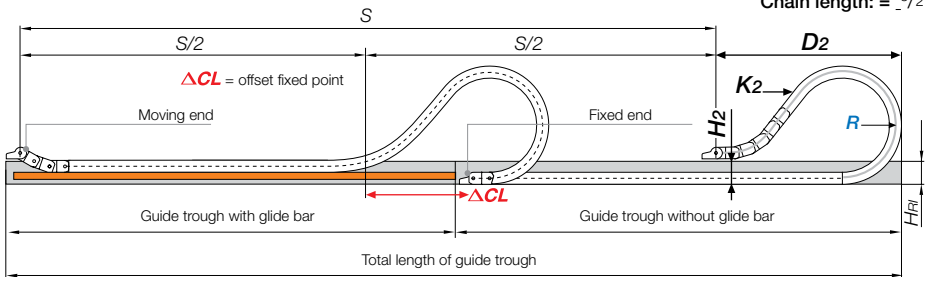
*If the mounting bracket location is set lower

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 7.09 (180) | 8.03 (204) | 10.00 (254) | 11.97 (304) | 13.94 (354) | 15.91 (404) | 17.87 (454) | 19.45 (494) | 21.81 (554) | 25.75 (654) |
| D | 6.85 (174) | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 13.03 (331) | 14.21 (361) | 16.18 (411) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 31.69 (805) | 35.43 (900) | 41.54 (1055) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| H2 | - | - | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| D2 | - | - | 14.57 (370) | 18.50 (470) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 35.43 (900) | 36.61 (930) | 43.31 (1100) |
| K2 | - | - | 24.25 (616) | 30.87 (784) | 35.27 (896) | 44.10 (1120) | 50.71 (1288) | 57.32 (1456) | 61.73 (1568) | 75.00 (1904) |
| ΔCL | - | - | 6.30 (160) | 8.27 (210) | 9.45 (240) | 14.57 (370) | 18.11 (460) | 21.26 (540) | 22.44 (570) | 27.17 (690) |

**In case of travels between 22.9 and 32.8 ft (7 and 10 m) we recommend a longer unsupported length.**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

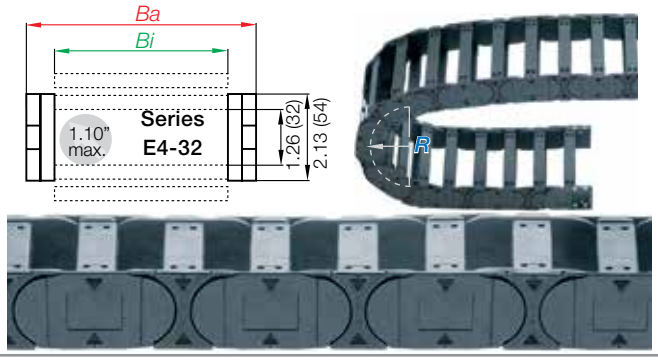
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-32 - E-Chain® with crossbars every link



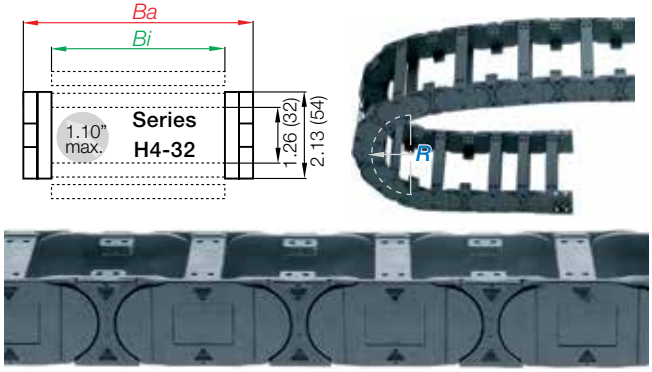

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-32 | 30- | 300- | 0

- 300- : Color - Black
- 30- : Bending radius
- E4-32 : Width
- E4-32 : Series

## Series H4-32 - E-Chain® with crossbars every other link



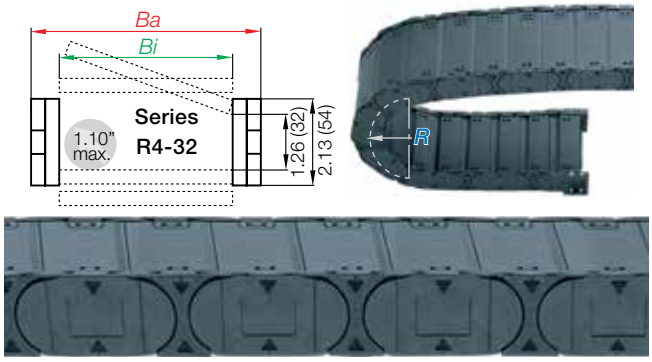

- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

H4-32- | 20- | 300- | 0

- 300- : Color - Black
- 20- : Bending radius
- H4-32- : Width
- H4-32- : Series

## Series R4-32 - fully enclosed E-Tube



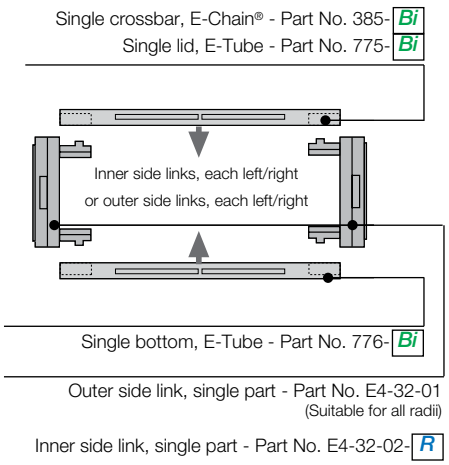

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

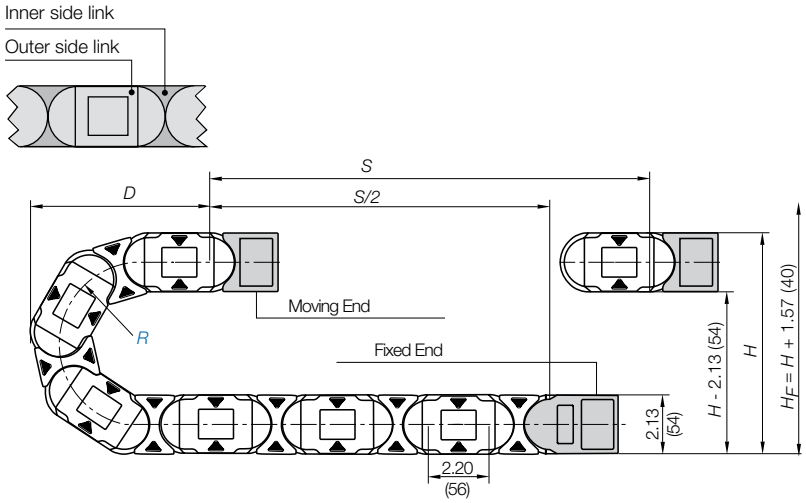
**Part Number Structure**

R4-32- | 30- | 300- | 0

- 300- : Color - Black
- 30- : Bending radius
- R4-32- : Width
- R4-32- : Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32
# Product Range



Supplement part number with required radius. Example: E4-32-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

| Part Number | | | | | Bi | Ba | Weight | | |
|---|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | | in. (mm) | in. (mm) | E4-32 lbs/ft (kg/m) | H4-32 lbs/ft (kg/m) | R4-32 lbs/ft (kg/m) |
| E4-32-05- | H4-32-05 | *R4-32-05- | | -0 | 1.97 (50) | 2.87 (73) | ≈ 1.05 (1.57) | ≈ 0.96 (1.43) | ≈ 1.65 (2.45) |
| E4-32-06- | H4-32-06- | | | -0 | 2.68 (68) | 3.58 (91) | ≈ 1.14 (1.70) | ≈ 1.00 (1.49) | – |
| E4-32-07- | H4-32-07 | R4-32-07- | | -0 | 2.95 (75) | 3.86 (98) | ≈ 1.16 (1.73) | ≈ 1.01(1.51) | ≈ 1.73 (2.57) |
| E4-32-087- | H4-32-087- | | | -0 | 3.43 (87) | 4.33 (110) | ≈ 1.21 (1.80) | ≈ 1.03 (1.54) | – |
| E4-32-097- | H4-32-097- | | | -0 | 3.82 (97) | 4.72 (120) | ≈ 1.25 (1.86) | ≈ 1.05 (1.57) | – |
| E4-32-10- | H4-32-10- | R4-32-10- | | -0 | 3.94 (100) | 4.84 (123) | ≈ 1.27 (1.89) | ≈ 1.06 (1.58) | ≈ 1.78 (2.65) |
| E4-32-11- | H4-32-11- | R4-32-11- | | -0 | 4.25 (108) | 5.16 (131) | ≈ 1.30 (1.94) | ≈ 1.08 (1.61) | ≈ 1.85 (2.76) |
| E4-32-112- | H4-32-112- | | | -0 | 4.41(112) | 5.35 (136) | ≈ 1.32 (1.96) | ≈ 1.09 (1.62) | – |
| E4-32-12- | H4-32-12- | R4-32-12- | | -0 | 4.92 (125) | 5.83 (148) | ≈ 1.39 (2.07) | ≈ 1.13 (1.68) | ≈ 1.92 (2.85) |
| E4-32-137- | H4-32-137- | | | -0 | 5.39 (137) | 6.34 (161) | ≈ 1.42 (2.12) | ≈ 1.14 (1.70) | – |
| E4-32-15- | H4-32-15- | R4-32-15- | | -0 | 5.91 (150) | 6.81 (173) | ≈ 1.49 (2.21) | ≈ 1.18 (1.75) | ≈ 2.02 (3.01) |
| E4-32-162- | H4-32-162- | | | -0 | 6.38 (162) | 7.32 (186) | ≈ 1.50 (2.24) | ≈ 1.18 (1.76) | – |
| E4-32-17- | H4-32-17- | R4-32-17- | | -0 | 6.61 (168) | 7.52 (191) | ≈ 1.56 (2.32) | ≈ 1.21 (1.80) | ≈ 2.16 (3.21) |
| E4-32-18- | H4-32-18- | | | -0 | 6.89 (175) | 7.80 (198) | ≈ 1.58 (2.35) | ≈ 1.22 (1.81) | – |
| E4-32-187- | H4-32-187- | | | -0 | 7.36 (187) | 8.31 (211) | ≈ 1.61 (2.39) | ≈ 1.24 (1.84) | – |
| E4-32-20- | H4-32-20- | R4-32-20- | | -0 | 7.87 (200) | 8.78 (223) | ≈ 1.69 (2.52) | ≈ 1.28 (1.90) | ≈ 2.29 (3.41) |
| E4-32-212- | H4-32-212- | | | -0 | 8.35 (212) | 9.29 (236) | ≈ 1.73 (2.57) | ≈ 1.30 (1.93) | – |
| E4-32-23- | H4-32-23- | | | -0 | 8.86 (225) | 9.76 (248) | ≈ 1.79 (2.67) | ≈ 1.33 (1.98) | – |
| E4-32-237- | H4-32-237- | | | -0 | 9.33 (237) | 10.28 (261) | ≈ 1.81 (2.70) | ≈ 1.34 (1.99) | – |
| E4-32-25- | H4-32-25- | R4-32-25- | | -0 | 9.84 (250) | 10.75 (273) | ≈ 1.90 (2.83) | ≈ 1.38 (2.06) | ≈ 2.59 (3.86) |
| E4-32-262- | H4-32-262- | | | -0 | 10.31 (262) | 11.26 (286) | ≈ 1.96 (2.92) | ≈ 1.41 (2.10) | – |
| E4-32-28 | H4-32-28- | | | -0 | 10.83 (275) | 11.73 (298) | ≈ 2.01 (2.99) | ≈ 1.44 (2.14) | – |
| E4-32-29- | H4-32-29- | | | -0 | 11.30 (287) | 12.24 (311) | ≈ 2.02 (3.02) | ≈ 1.44 (2.15) | – |
| E4-32-30- | H4-32-30- | R4-32-30- | | -0 | 11.81 (300) | 12.72 (323) | ≈ 2.12 (3.15) | ≈ 1.49 (2.22) | ≈ 2.85 (4.25) |
| E4-32-312- | H4-32-312- | | | -0 | 12.28 (312) | 13.23 (336) | ≈ 2.14 (3.18) | ≈ 1.50 (2.23) | – |
| E4-32-325- | H4-32-325- | | | -0 | 12.79 (325) | 13.70 (348) | ≈ 2.20 (3.28) | ≈ 1.53 (2.28) | – |
| E4-32-337- | H4-32-337- | | | -0 | 13.27 (337) | 14.21 (361) | ≈ 2.24 (3.34) | ≈ 1.55 (2.31) | – |
| E4-32-350- | H4-32-350- | | | -0 | 13.78 (350) | 14.69 (373) | ≈ 2.40 (3.57) | ≈ 1.63 (2.42) | – |
| E4-32-362- | H4-32-362- | | | -0 | 14.25 (362) | 15.20 (386) | ≈ 2.46 (3.66) | ≈ 1.66 (2.47) | – |
| E4-32-375- | H4-32-375- | | | -0 | 14.76 (375) | 15.67 (398) | ≈ 2.51 (3.74) | ≈ 1.69 (2.51) | – |
| E4-32-387- | H4-32-387- | | | -0 | 15.24 (387) | 16.18 (411) | ≈ 2.55 (3.80) | ≈ 1.71 (2.54) | – |
| E4-32-400 | H4-32-400- | | | -0 | 15.75 (400) | 16.65 (423) | ≈ 2.60 (3.87) | ≈ 1.73 (2.58) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-32-30-300-0

| | 063** | 075** | 100** | 125 | 150 | 175 | 200 | 220 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.48 (063**) | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
| *H* -0 +20 | 7.09 (180) | 8.03 (204) | 10.00 (254) | 11.97 (304) | 13.94 (354) | 15.91 (404) | 17.87 (454) | 19.45 (494) | 21.81 (554) | 25.75 (654) |
| *D* | 6.85 (174) | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 13.03 (331) | 14.21 (361) | 16.18 (411) |
| *K* | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 31.69 (805) | 35.43 (900) | 41.54 (1055) |

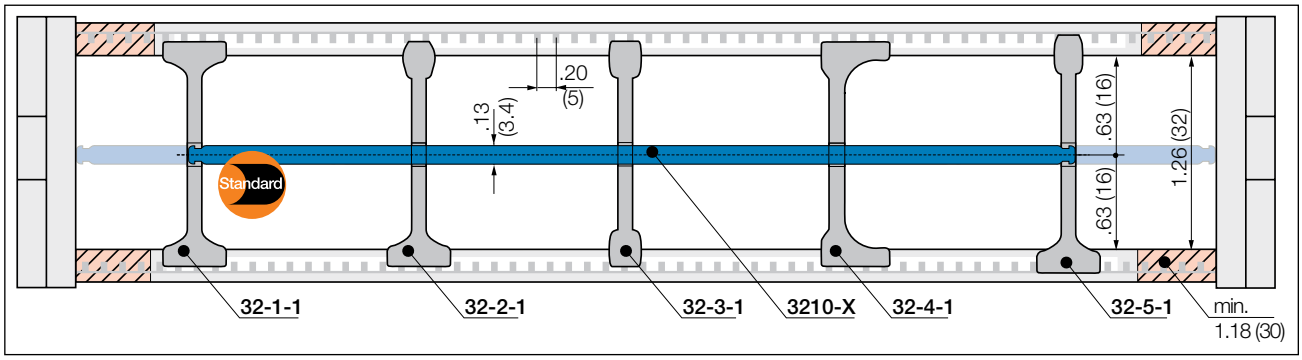
** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For wider chains see page 6.32.
For large diameter hoses see page 6.32

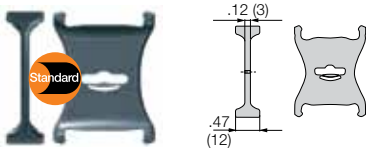
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series Series E4-32/H4-32/R4-32
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



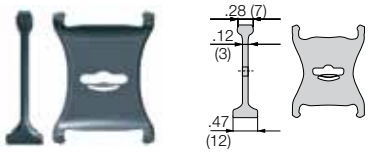

Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 32-1** |
| Assembled | **Part No. 32-1-1** |

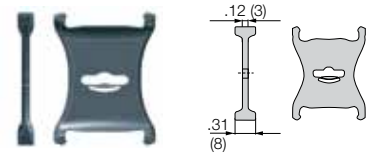
- **Standard separator 32-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 32-2** |
| Assembled | **Part No. 32-2-1** |

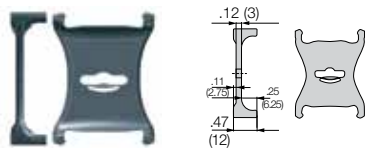
- **Separator 32-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 32-3** |
| Assembled | **Part No. 32-3-1** |

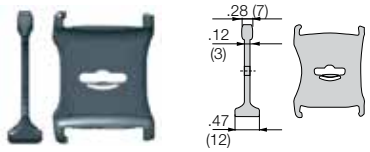
- **Separator 32-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 32-4** |
| Assembled | **Part No. 32-4-1** |

- **Separator 32-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

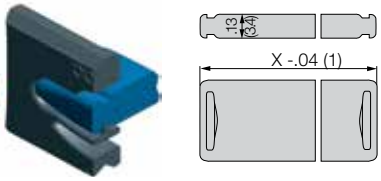



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 32-5** |
| Assembled | **Part No. 32-5-1** |

- **Separator 32-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

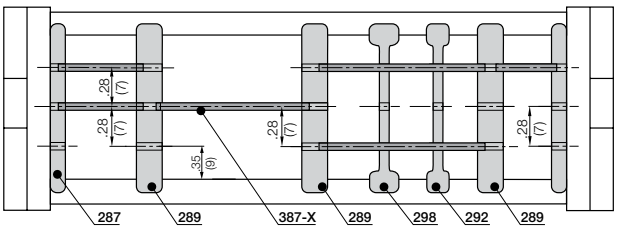
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

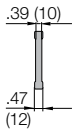
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-75** | **3210-75** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

# E-Chain System® E4-1
# Series Series E4-32/H4-32/R4-32
# Interior Separation - Previous Generation

## Shelves and Separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.

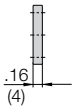





**Split Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. T323** |
| Assembled | **Part No. T323M** |

- **Split separator T323 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility




**Side Plate**

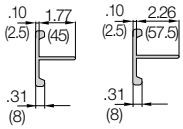
| | |
|---|---|
| Unassembled | **Part No. 286** |
| Assembled | **Part No. 287** |

- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.

**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 288** |
| Assembled | **Part No. 289** |

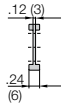
- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.




**Separators w/Integrated Shelf**

| | |
|---|---|
| Unassembled | **Part No. 281-S-45** |
| Assembled | **Part No. 282-S-45** |
| Unassembled | **Part No. 281-S-57** |
| Assembled | **Part No. 282-S-57** |

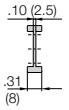
- **Locking vertical separator 281-S**
  This separator is slotted and able to be combined with shelves




**Slotted Separators**

| | |
|---|---|
| Unassembled | **Part No. 291** |
| Assembled | **Part No. 292** |

- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.




**Slotted Separators, Open**

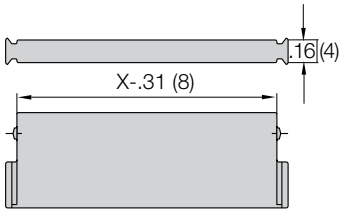
| | |
|---|---|
| Unassembled | **Part No. 297** |
| Assembled | **Part No. 298** |

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.

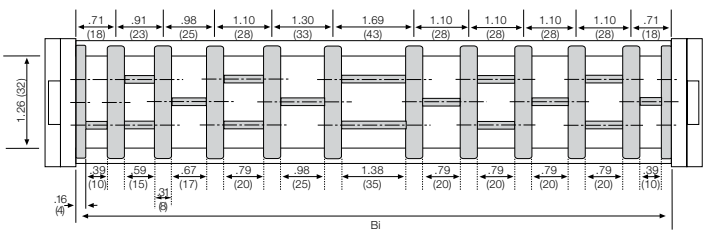
| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |
| **8.86** | **(225)** | **8.54** | **(217)** | **386-225** | **387-225** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments




The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator***.



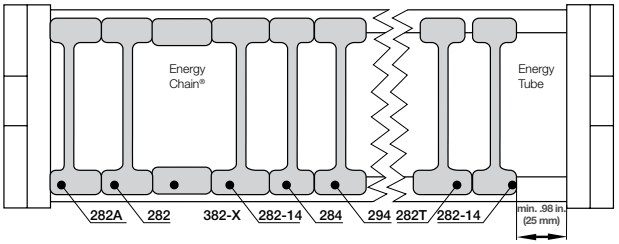

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series Series E4-32/H4-32/R4-32
# Interior Separation - Previous Generation

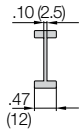
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



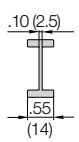

**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes




**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 280** |
| Assembled | **Part No. 281** |

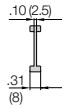
- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.




**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 280-14** |
| Assembled | **Part No. 281-14** |

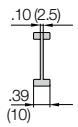
- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.




**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 283** |
| Assembled | **Part No. 284** |

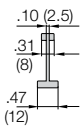
- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.




**Locking Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 293** |
| Assembled | **Part No. 294** |

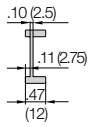
- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.




**Locking Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 281T** |
| Assembled | **Part No. 282T** |

- **Locking separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 280A** |
| Assembled | **Part No. 281A** |

- **Asymmetrical separator 281A for E-Chains®**
  This separator features an (12mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | 79” | (20) |

Part number example for E-Chain®

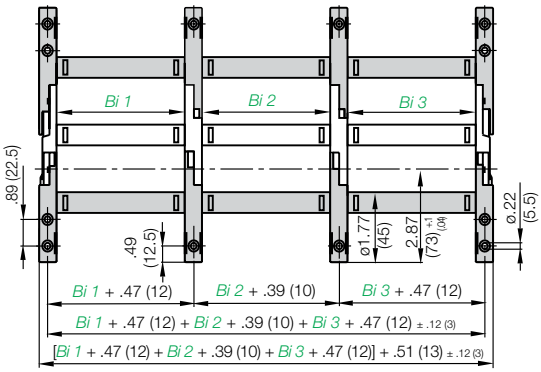
**E4-32-10/20/10-[200]-0**

**E4-32-*Bi1*/*Bi2*/*Bi3*-[*R*]-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

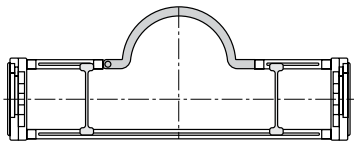
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



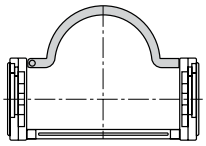
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



**Round extender crossbar combined with standard snap-open crossbars.**

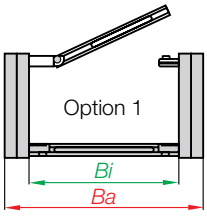


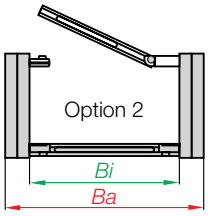
**Attached directly to the side link.**

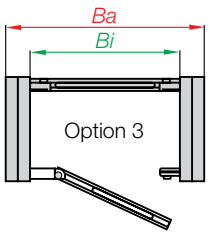
| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.13 (105) | Round | No | Yes |
| **385-18-RD115** | 4.13 (105) | Round | Yes | No |

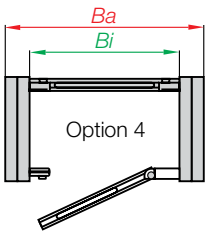
## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi-1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi = 3.44" (87.5 mm)



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32
# Mounting Brackets - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

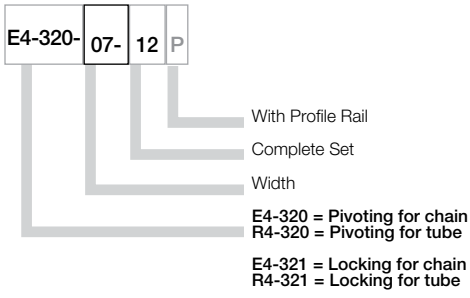
## Option 1: pivoting

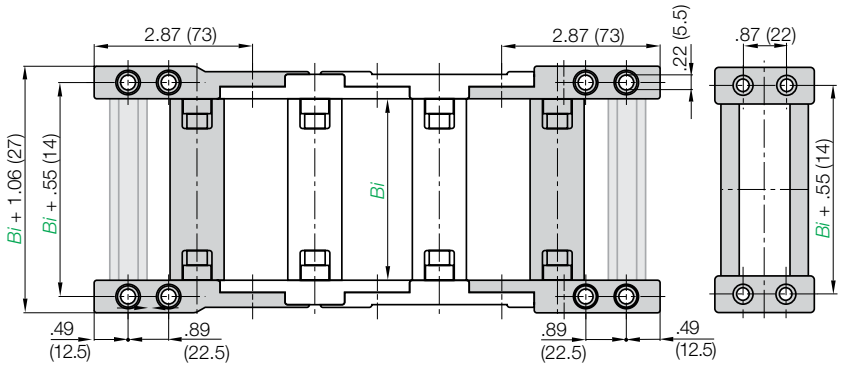
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

## Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

### Part Number Structure




**Due to the design of the E4-32 series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain.**
**For locking brackets change part number to 321**

**Part No. Full Set** (pivoting)
Series E4-32 or H4-32
E4-320-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-32 or H4-32
E4-320-Width-12P

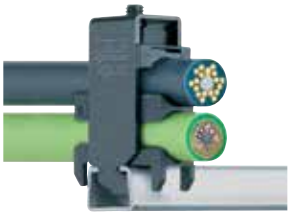
**Part No. Full Set** (pivoting)
Tube Series R4-32
R4-320-Width-12

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-32
R4-320-Width-12P

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -05* | E4-320/R4-320 | E4-321/R4-321 | -05-12 | P | 1.97 (50) |
| -06 | E4-320 | E4-321 | -06-12 | P | 2.68 (68) |
| -07 | E4-320/R4-320 | E4-321/R4-321 | -07-12 | P | 2.95 (75) |
| -087 | E4-320 | E4-321 | -087-12 | P | 3.43 (87) |
| -097 | E4-320 | E4-321 | -097-12 | P | 3.82 (97) |
| -10 | E4-320/R4-320 | E4-321/R4-321 | -10-12 | P | 3.94 (100) |
| -11 | E4-320/R4-320 | E4-321/R4-321 | -11-12 | P | 4.25 (108) |
| -112 | E4-320 | E4-321 | -112-12 | P | 4.41 (112) |
| -12 | E4-320/R4-320 | E4-321/R4-321 | -12-12 | P | 4.92 (125) |
| -137 | E4-320 | E4-321 | -137-12 | P | 5.39 (137) |
| -15 | E4-320/R4-320 | E4-321/R4-321 | -15-12 | P | 5.91 (150) |
| -162 | E4-320 | E4-321 | -162-12 | P | 6.38 (162) |
| -17 | E4-320/R4-320 | E4-321/R4-321 | -17-12 | P | 6.61 (168) |
| -18 | E4-320 | E4-321 | -18-12 | P | 6.89 (175) |
| -187 | E4-320 | E4-321 | -187-12 | P | 7.36 (187) |
| -20 | E4-320/R4-320 | E4-321/R4-321 | -20-12 | P | 7.87 (200) |

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -212 | E4-320 | E4-321 | -212-12 | P | 8.35 (212) |
| -23 | E4-320 | E4-321 | -23-12 | P | 8.86 (225) |
| -237 | E4-320 | E4-321 | -237-12 | P | 9.33 (237) |
| -25 | E4-320/R4-320 | E4-321/R4-321 | -25-12 | P | 9.84 (250) |
| -262 | E4-320 | E4-321 | -262-12 | P | 10.31 (262) |
| -28 | E4-320 | E4-321 | -28-12 | P | 10.83 (275) |
| -29 | E4-320 | E4-321 | -29-12 | P | 11.30 (287) |
| -30 | E4-320/R4-320 | E4-321/R4-321 | -30-12 | P | 11.81 (300) |
| -312 | E4-320 | E4-321 | -312-12 | P | 12.28 (312) |
| -325 | E4-320 | E4-321 | -325-12 | P | 12.79 (325) |
| -337 | E4-320 | E4-321 | -337-12 | P | 13.27 (337) |
| -350 | E4-320 | E4-321 | -350-12 | P | 13.78 (350) |
| -362 | E4-320 | E4-321 | -362-12 | P | 14.25 (362) |
| -375 | E4-320 | E4-321 | -375-12 | P | 14.76 (375) |
| -387 | E4-320 | E4-321 | -387-12 | P | 15.24 (387) |
| -400 | E4-320 | E4-321 | -400-12 | P | 15.75 (400) |

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1M | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1M | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1M | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1M | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1M | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1M | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1M | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1M | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1M | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1M | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1M | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

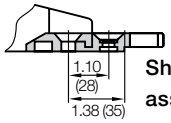
## Chainfix Clip

### Modular snap-on strain relief device

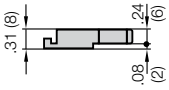
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

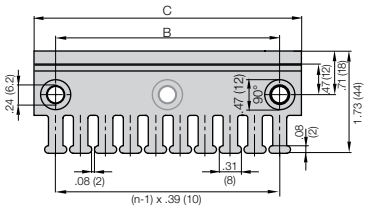



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-32/H4-32/R4-32
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 98-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 98-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**93-50-XXX**
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

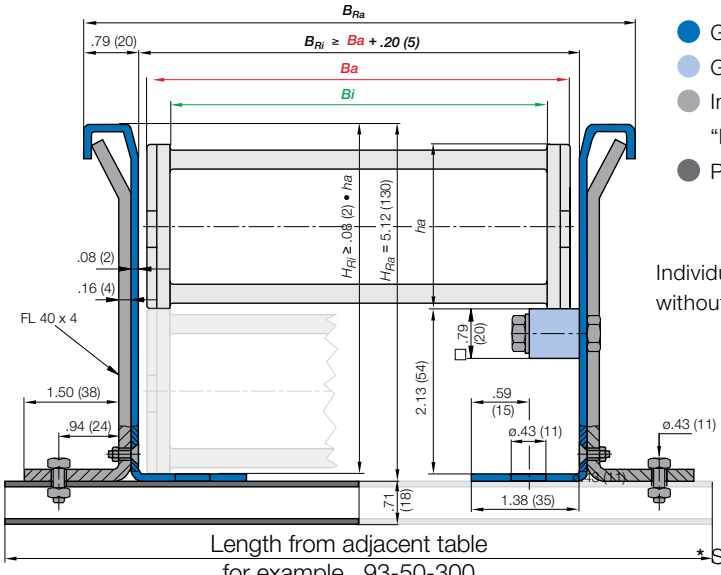
**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
E4-32-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.15 (78) | **93-50-200** |
| **-06** | 3.86 (96) | **93-50-225** |
| **-07** | 4.13 (103) | **93-50-225** |
| **-087** | 4.61 (115) | **93-50-225** |
| **-097** | 4.92 (125) | **93-50-250** |
| **-10** | 5.12 (128) | **93-50-250** |
| **-11** | 5.43 (136) | **93-50-250** |
| **-112** | 5.59 (141) | **93-50-250** |
| **-12** | 6.10 (153) | **93-50-275** |
| **-137** | 6.57 (166) | **93-50-275** |
| **-15** | 7.09 (178) | **93-50-300** |
| **-162** | 7.56 (191) | **93-50-300** |
| **-17** | 7.80 (196) | **93-50-325** |
| **-18** | 8.07 (203) | **93-50-325** |
| **-187** | 8.54 (216) | **93-50-325** |
| **-20** | 9.06 (228) | **93-50-350** |
| **-212** | 9.53 (241) | **93-50-350** |
| **-23** | 10.04 (253) | **93-50-375** |
| **-237** | 10.51 (266) | **93-50-375** |
| **-25** | 11.02 (278) | **93-50-400** |
| **-262** | 11.50 (291) | **93-50-400** |
| **-28** | 12.01 (303) | **93-50-425** |
| **-29** | 12.48 (316) | **93-50-425** |
| **-30** | 12.99 (328) | **93-50-450** |
| **-312** | 13.46 (341) | **93-50-450** |
| **-325** | 13.98 (353) | **93-50-475** |
| **-337** | 14.45 (366) | **93-50-475** |
| **-350** | 14.96 (378) | **93-50-500** |
| **-362** | 15.43 (391) | **93-50-500** |
| **-375** | 15.94 (403) | **93-50-525** |
| **-387** | 16.42 (416) | **93-50-525** |
| **-400** | 16.93 (428) | **93-50-550** |

Standard length profile rail




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

*Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42

## Price Index

Series E4-42

Series H4-42

Series R4-42

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-40/R6-40**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 3400/3450/3480/3500**

## Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. QuickLock Crossbar, 385-X-Q, available for faster assembly/disassembly
6. The tongue and groove design provides greater lateral stability
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework

**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-42-20-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E4-42-20-300-0** | **E-Chain®** |
| With 2 separators **382** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-420-20-12P** | **Mounting Bracket** |

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Installation Dimensions

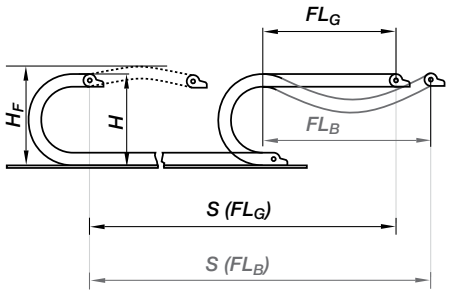


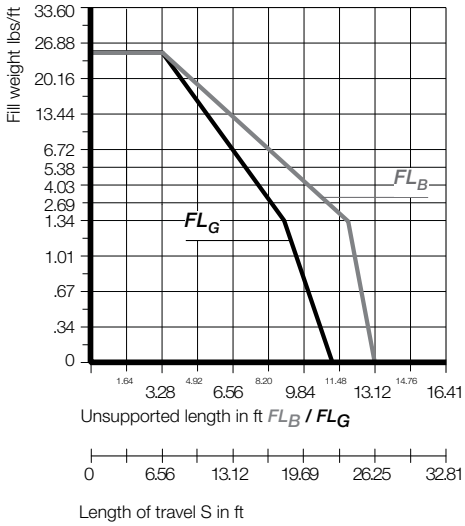


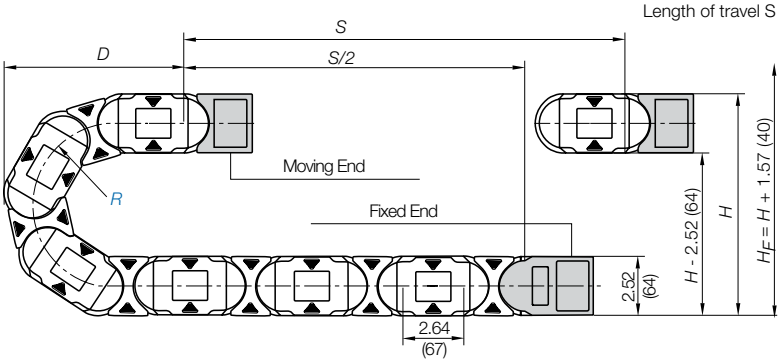
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $_{S}/_{2}$ + K

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

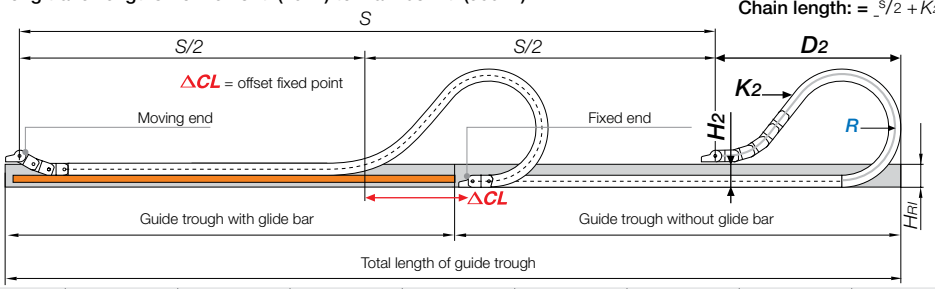
| R | 2.95 (075*) | 3.94 (100*) | 4.53 (115*) | 4.92 (125) | 5.91 (150) | 6.30 (160) | 6.69 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H $^{-0}_{+25}$ | 8.43 (214) | 10.39 (264) | 11.57 (294) | 12.36 (314) | 14.33 (364) | 15.12 (384) | 16.30 (414) | 18.27 (464) | 22.20 (564) | 26.14 (664) | 30.08 (764) |
| D | 8.19 (208) | 9.17 (233) | 9.76 (248) | 10.15 (258) | 11.14 (283) | 11.54 (293) | 12.13 (308) | 13.11 (333) | 15.08 (383) | 17.05 (433) | 19.02 (483) |
| K | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 25.20 (640) | 26.97 (685) | 30.12 (765) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

*Radius not available for E-Tubes

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 984 ft. (300 m)**

**For center mount applications:**
**Chain length: =** $_{S}/_{2} + K_2$




| R | 2.95 (075*) | 3.94 (100*) | 4.53 (115*) | 4.92 (125) | 5.91 (150) | 6.30 (160) | 6.69 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H2 | - | - | 9.06 (230) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| D2 +25 | - | - | 17.13 (435) | 18.70 (475) | 22.44 (570) | 24.53 (623) | 26.38 (670) | 30.71 (780) | 40.55 (1030) | 45.28 (1150) | 59.06 (1500) |
| K2 | - | - | 29.02 (737) | 31.65 (804) | 36.93 (938) | 42.20 (1072) | 44.84 (1139) | 52.76 (1340) | 65.94 (1675) | 76.50 (1943) | 94.96 (2412) |
| ΔCL | - | - | 7.87 (200) | 9.06 (230) | 11.81 (300) | 14.96 (380) | 14.96 (380) | 18.11 (460) | 25.98 (660) | 28.74 (730) | 40.55 (1030) |

**In case of travels between 26.3 and 29.4 ft (8 and 12 m) we recommend a longer unsupported length.**

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

*Radius not available for E-Tubes

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

### Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

### Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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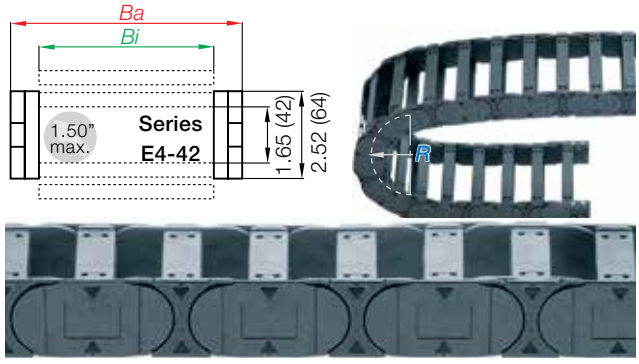
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Product Range

## Series E4-42 - E-Chain® with crossbars every link



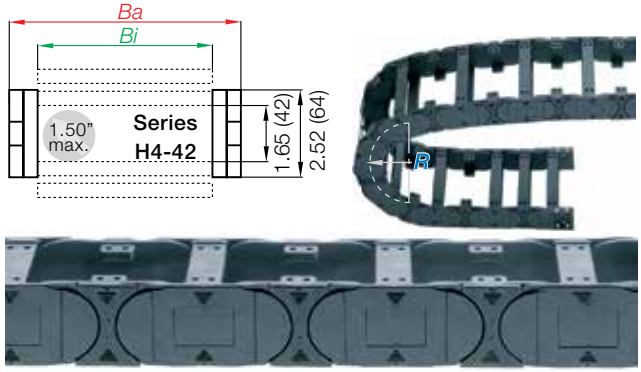

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-42- 400- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 400 – Width
- E4-42 – Series

## Series H4-42 - E-Chain® with crossbars every other link



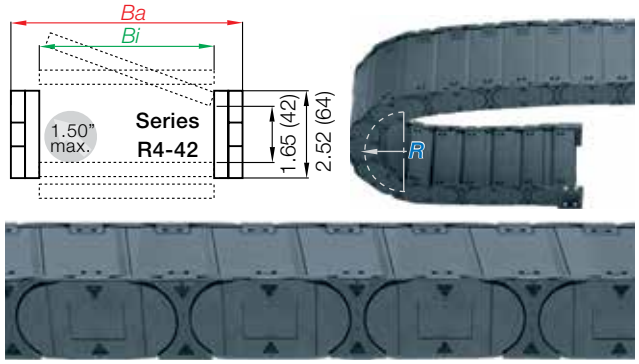

- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

H4-42- 400- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 400 – Width
- H4-42 – Series

## Series R4-42 - fully enclosed E-Tube



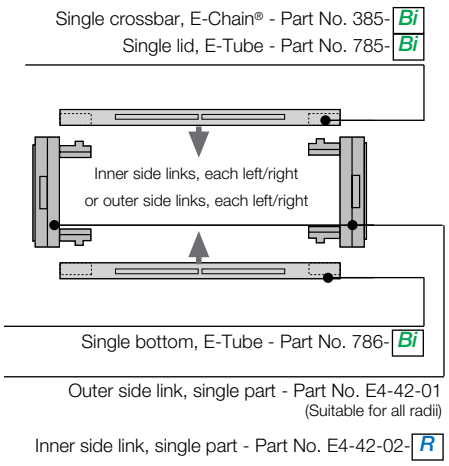

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

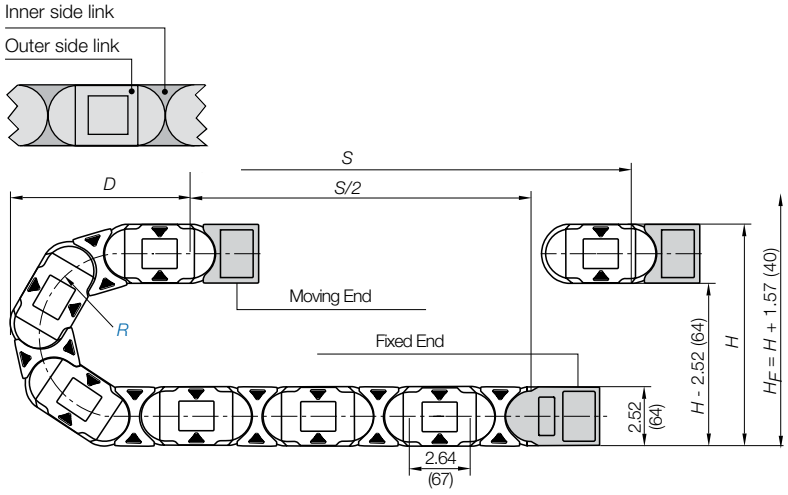
**Part Number Structure**

R4-42- 25- 300- 0

- 0 – Color - Black
- 300 – Bending radius
- 25 – Width
- R4-42 – Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Product Range



Supplement part number with required radius. Example: E4-42-400-300-0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

| Part Number | | | | | | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | E4-42 lbs/ft (kg/m) | H4-42 lbs/ft (kg/m) | R4-42 lbs/ft (kg/m) |
| E4-42-05- | H4-42-05 | *R4-42-05- | -0 | 1.97 (50) | 2.99 (76) | ≈ 1.29 (1.92) | ≈ 1.21 (1.80) | ≈ 1.44 (2.15) |
| E4-42-06- | H4-42-06- | | -0 | 2.68 (68) | 3.70 (94) | ≈1.36 (2.03) | ≈ 1.25 (1.86) | – |
| E4-42-07- | H4-42-07 | R4-42-07- | -0 | 2.95 (75) | 3.98 (101) | ≈ 1.38 (2.06) | ≈ 1.26 (1.87) | ≈ 1.53 (2.28) |
| E4-42-087- | H4-42-087- | | -0 | 3.43 (87) | 4.49 (114) | ≈ 1.42 (2.12) | ≈ 1.28 (1.90) | ≈ 1.62 (2.41) |
| E4-42-097 | H4-42-097 | | -0 | 3.82 (97) | 4.72 (120) | ≈ 1.43 (2.14) | ≈ 1.29 (1.92) | – |
| E4-42-10- | H4-42-10- | R4-42-10- | -0 | 3.94 (100) | 4.96 (126) | ≈ 1.47 (2.19) | ≈ 1.32 (1.96) | ≈ 1.69 (2.52) |
| E4-42-11- | H4-42-11- | R4-42-11- | -0 | 4.25 (108) | 5.28 (134) | ≈ 1.50 (2.24) | ≈ 1.32 (1.97) | ≈ 1.73 (2.57) |
| E4-42-112- | H4-42-112- | | -0 | 4.41(112) | 5.47 (139) | ≈ 1.51 (2.25) | ≈ 1.32 (1.97) | – |
| E4-42-12- | H4-42-12- | R4-42-12- | -0 | 4.92 (125) | 5.94 (151) | ≈ 1.57 (2.34) | ≈ 1.35 (2.01) | ≈ 1.83 (2.73) |
| E4-42-137- | H4-42-137- | | -0 | 5.39 (137) | 6.46 (164) | ≈ 1.61 (2.39) | ≈ 1.37 (2.04) | – |
| E4-42-15- | H4-42-15- | R4-42-15- | -0 | 5.91 (150) | 6.93 (176) | ≈ 1.65 (2.46) | ≈ 1.39 (2.07) | ≈ 2.00 (2.98) |
| E4-42-162- | H4-42-162- | | -0 | 6.38 (162) | 7.44 (189) | ≈ 1.67 (2.48) | ≈ 1.40 (2.09) | – |
| E4-42-17- | H4-42-17- | R4-42-17- | -0 | 6.61 (168) | 7.64 (194) | ≈ 1.71 (2.55) | ≈ 1.42 (2.12) | ≈ 2.12 (3.15) |
| E4-42-18- | H4-42-18- | | -0 | 6.89 (175) | 7.91 (201) | ≈ 1.73 (2.57) | ≈ 1.43 (2.13) | – |
| E4-42-187- | H4-42-187- | | -0 | 7.36 (187) | 8.43 (214) | ≈ 1.75 (2.61) | ≈ 1.44 (2.15) | – |
| E4-42-20- | H4-42-20- | R4-42-20- | -0 | 7.87 (200) | 8.90 (226) | ≈ 1.83 (2.72) | ≈ 1.48 (2.20) | ≈ 2.32 (3.45) |
| E4-42-212- | H4-42-212- | | -0 | 8.35 (212) | 9.41 (239) | ≈ 1.85 (2.76) | ≈ 1.49 (2.22) | – |
| E4-42-23- | H4-42-23- | | -0 | 8.86 (225) | 9.88 (251) | ≈ 1.90 (2.84) | ≈ 1.52 (2.26) | – |
| E4-42-237- | H4-42-237- | | -0 | 9.33 (237) | 10.39 (264) | ≈ 1.93 (2.87) | ≈ 1.53 (2.28) | – |
| E4-42-25- | H4-42-25- | R4-42-25- | -0 | 9.84 (250) | 10.87 (276) | ≈ 2.00 (2.98) | ≈ 1.57 (2.33) | ≈ 2.86 (4.25) |
| E4-42-262- | H4-42-262- | | -0 | 10.31 (262) | 11.38 (289) | ≈ 2.05 (3.05) | ≈ 1.59 (2.37) | – |
| E4-42-28 | H4-42-28- | | -0 | 10.83 (275) | 11.85 (301) | ≈ 2.09 (3.11) | ≈ 1.61 (2.40) | – |
| E4-42-29- | H4-42-29- | | -0 | 11.30 (287) | 12.36 (314) | ≈ 2.11 (3.14) | ≈ 1.62 (2.41) | – |
| E4-42-30- | H4-42-30- | R4-42-30- | -0 | 11.81 (300) | 12.83 (326) | ≈ 2.18 (3.24) | ≈ 1.65 (2.46) | ≈ 3.29 (4.89) |
| E4-42-312- | H4-42-312- | | -0 | 12.28 (312) | 13.35 (339) | ≈ 2.19 (3.26) | ≈ 1.66 (2.47) | – |
| E4-42-325- | H4-42-325- | | -0 | 12.79 (325) | 13.82 (351) | ≈ 2.24 (3.34) | ≈ 1.69 (2.52) | – |
| E4-42-337- | H4-42-337- | | -0 | 13.27 (337) | 14.33 (364) | ≈ 2.28 (3.40) | ≈ 1.71 (2.54) | – |
| E4-42-350- | H4-42-350- | | -0 | 13.78 (350) | 14.80 (376) | ≈ 2.41 (3.59) | ≈ 1.77 (2.64) | – |
| E4-42-362- | H4-42-362- | | -0 | 14.25 (362) | 15.31 (389) | ≈ 2.47 (3.67) | ≈ 1.80 (2.68) | – |
| E4-42-375- | H4-42-375- | | -0 | 14.76 (375) | 15.83 (402) | ≈ 2.51 (3.73) | ≈ 1.82 (2.71) | – |
| E4-42-387- | H4-42-387- | | -0 | 15.24 (387) | 16.30 (414) | ≈ 2.55 (3.79) | ≈ 1.84 (2.74) | – |
| E4-42-400 | H4-42-400- | | -0 | 15.75 (400) | 16.77 (426) | ≈ 2.58 (3.84) | ≈ 1.85 (2.76) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: E4-42-400-300-0

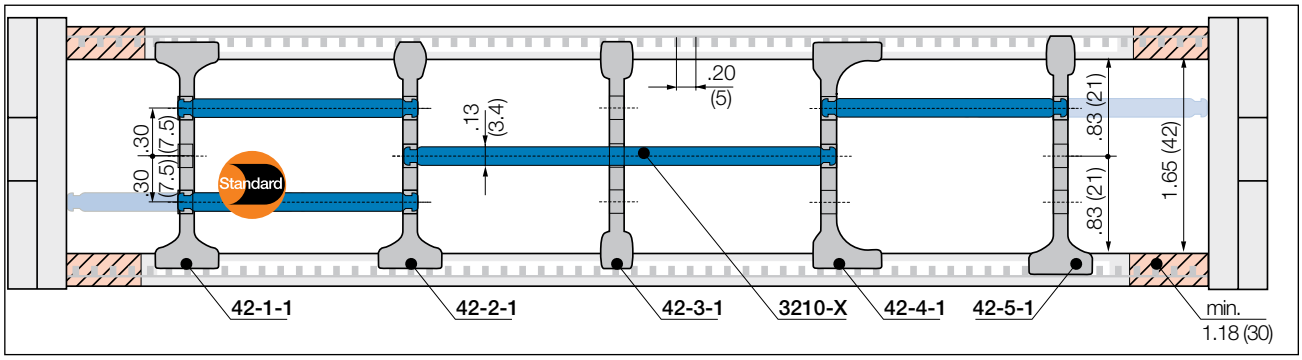
| | 075** | 100** | 115** | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.95 (075*) | 3.94 (100*) | 4.53 (115*) | 4.92 (125) | 5.91 (150) | 6.30 (160) | 6.69 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| *H* $^{-0}_{+20}$ | 8.43 (214) | 10.39 (264) | 11.57 (294) | 12.36 (314) | 14.33 (364) | 15.12 (384) | 16.30 (414) | 18.27 (464) | 22.20 (564) | 26.14 (664) | 30.08 (764) |
| *D* | 8.19 (208) | 9.17 (233) | 9.76 (248) | 10.15 (258) | 11.14 (283) | 11.54 (293) | 12.13 (308) | 13.11 (333) | 15.08 (383) | 17.05 (433) | 19.02 (483) |
| *K* | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 25.20 (640) | 26.97 (685) | 30.12 (765) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

** This radius is not available for the R4-42 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

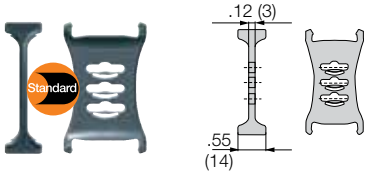
For wider chains see page 6.44.
For large diameter hoses see page 6.44.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Interior Separation - New Generation



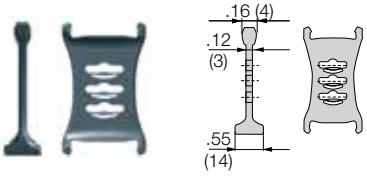

Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 42-1** |
| Assembled | **Part No. 42-1-1** |

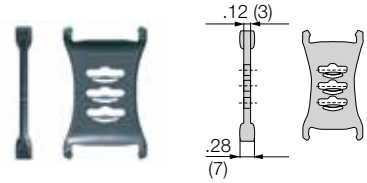
- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 42-2** |
| Assembled | **Part No. 42-2-1** |

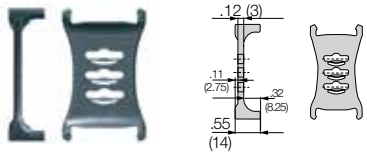
- **Separator 42-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 42-3** |
| Assembled | **Part No. 42-3-1** |

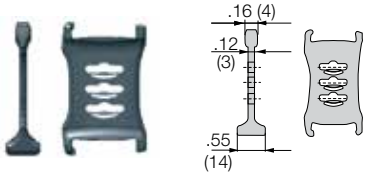
- **Separator 42-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 42-4** |
| Assembled | **Part No. 42-4-1** |

- **Separator 42-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

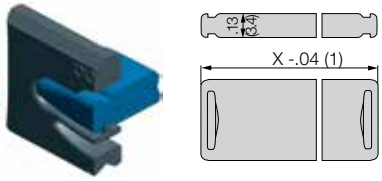



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 42-5** |
| Assembled | **Part No. 42-5-1** |

- **Separator 42-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-75** | **3210-75** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

igus® E-Chain System®
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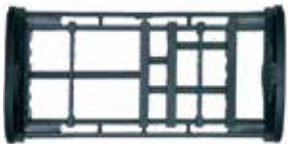
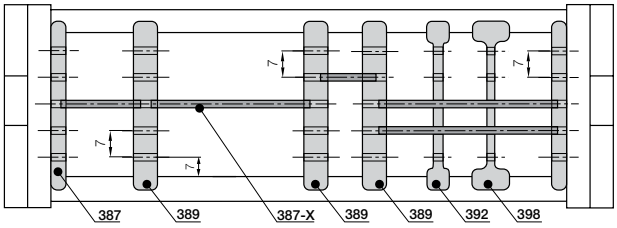
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

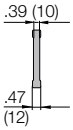
# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Interior Separation - Previous Generation



## Shelves and Separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.

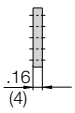





**Split separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. T423** |
| Assembled | **Part No. T423M** |

- **Split separator T423 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility




**Side Plate**

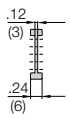
| | |
|---|---|
| Unassembled | **Part No. 386** |
| Assembled | **Part No. 387** |

- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.

**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 388** |
| Assembled | **Part No. 389** |

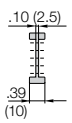
- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.




**Slotted Separators**

| | |
|---|---|
| Unassembled | **Part No. 391** |
| Assembled | **Part No. 392** |

- **Closed Slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.




**Slotted Separators, Open**

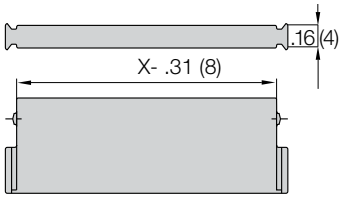
| | |
|---|---|
| Unassembled | **Part No. 397** |
| Assembled | **Part No. 398** |

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle 3 slots only.

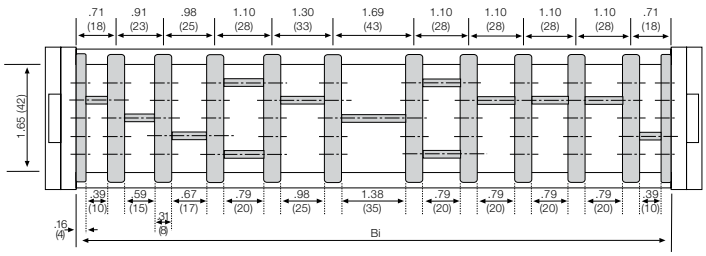
| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments

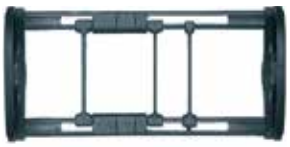



The diagram below is for reference purposes only. Multiple configurations are possible. To create your e-chain shelving cross section please see our online e-chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***e-chain Configurator***.



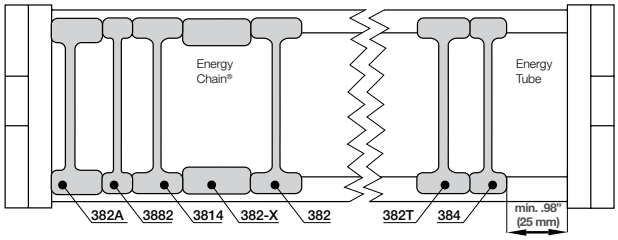

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

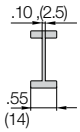
# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Interior Separation - Previous Generation



## Vertical separators and spacers

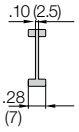
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes





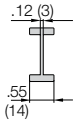

**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 380** |
| Assembled | **Part No. 381** |



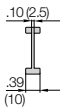

**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 3881** |
| Assembled | **Part No. 3882** |



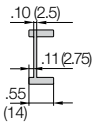

**Vertical Separator (tubes only)**

**Part No. 380TPart No. 381T**




**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 383** |
| Assembled | **Part No. 384** |




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381A** |
| Assembled | **Part No. 382A** |

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | 79” | (20) |

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.
- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.
- **Locking separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.
- **Vertical separator 383 for E-Chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force.
- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

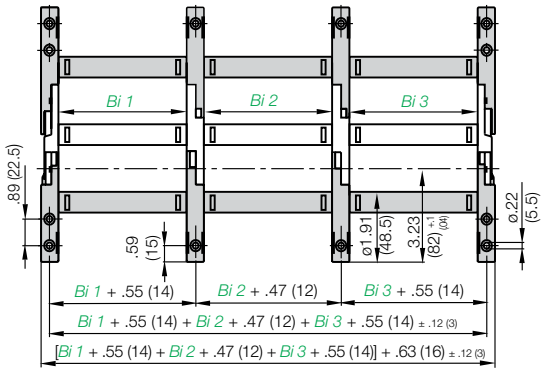
**E4-42-10/20/10-** 200 **-0**

**E4-42-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

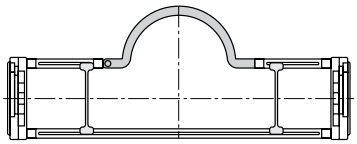
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



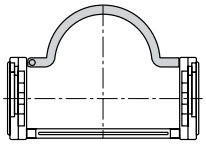
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



**Round extender crossbar combined with standard snap-open crossbars.**

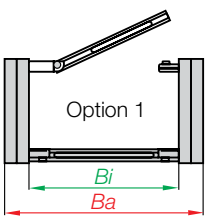


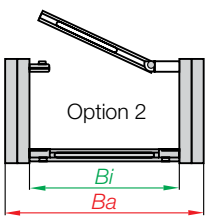
**Attached directly to the side link.**

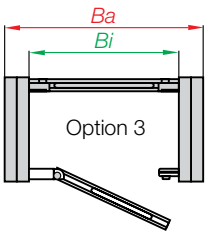
| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.13 (105) | Round | No | Yes |
| **385-18-RD115** | 4.13 (105) | Round | Yes | No |

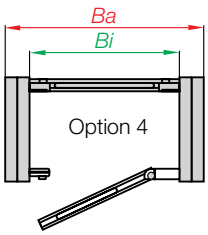
## Hinged crossbars

- Please consult igus® for design assistance
- Hinged crossbar: Part No. 385-02
- Snap-open crossbar (shortened): Bi - 1.48" (37.5 mm) Part No. 385-03 (smallest inner width Bi - 3.44" (87.5 mm)




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

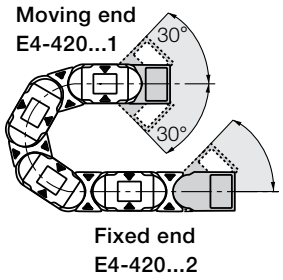
# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Mounting Brackets

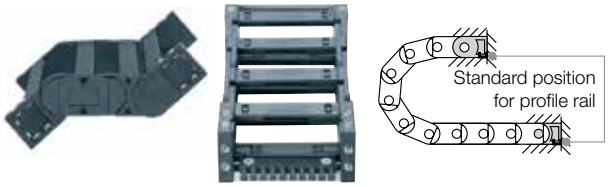
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

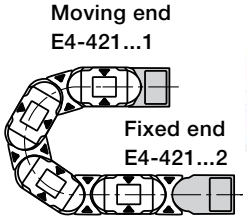
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant




## Option 2: locking

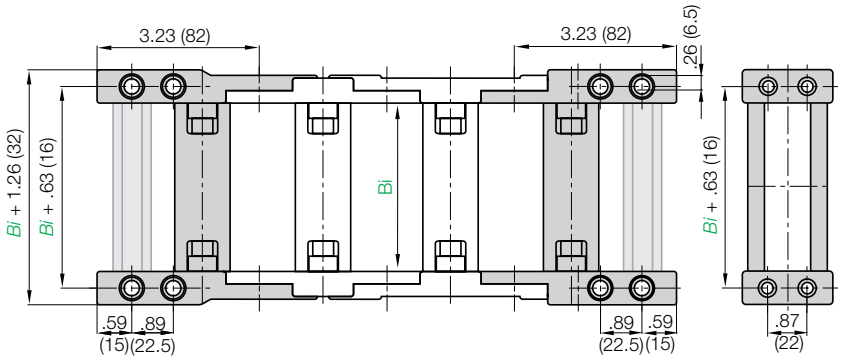
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



### Part Number Structure

E4-420- | 07- | 12 | P

- P: With Profile Rail
- 12: Complete Set
- 07-: Width
- E4-420- : E4-420 = Pivoting for chain, R4-420 = Pivoting for tube; E4-421 = Locking for chain, R4-421 = Locking for tube




**Due to the design of the E4-42 series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain.**
**For locking brackets change part number to 421**

**Part No. Full Set** (pivoting)
Series E4-42 or H4-42
E4-420-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-42 or H4-42
E4-420-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R4-42
R4-420-Width-12

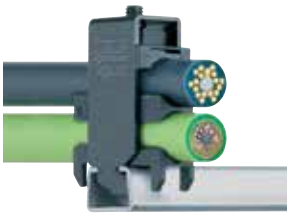
**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-42
R4-420-Width-12P

| Width | Part No. Full Set chain/tube Pivoting | Locking | With Profile Rail | | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -05* | E4-420/R4-420 | E4-421/R4-421 | -05-12 | P | 1.97 (50) |
| -06 | E4-420 | E4-421 | -06-12 | P | 2.68 (68) |
| -07 | E4-420/R4-420 | E4-421/R4-421 | -07-12 | P | 2.95 (75) |
| -087 | E4-420 | E4-421/R4-421 | -087-12 | P | 3.43 (87) |
| -097 | E4-420 | E4-421 | -097-12 | P | 3.82 (97) |
| -10 | E4-420/R4-420 | E4-421/R4-421 | -10-12 | P | 3.94 (100) |
| -11 | E4-420/R4-420 | E4-421/R4-421 | -11-12 | P | 4.25 (108) |
| -112 | E4-420 | E4-421 | -112-12 | P | 4.41 (112) |
| -12 | E4-420/R4-420 | E4-421/R4-421 | -12-12 | P | 4.92 (125) |
| -137 | E4-420 | E4-421 | -137-12 | P | 5.39 (137) |
| -15 | E4-420/R4-420 | E4-421/R4-421 | -15-12 | P | 5.91 (150) |
| -162 | E4-420 | E4-421 | -162-12 | P | 6.38 (162) |
| -17 | E4-420/R4-420 | E4-421/R4-421 | -17-12 | P | 6.61 (168) |
| -18 | E4-420 | E4-421 | -18-12 | P | 6.89 (175) |
| -187 | E4-420 | E4-421 | -187-12 | P | 7.36 (187) |
| -20 | E4-420/R4-420 | E4-421/R4-421 | -20-12 | P | 7.87 (200) |

| Width | Part No. Full Set chain/tube Pivoting | Locking | With Profile Rail | | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -212 | E4-420 | E4-421 | -212-12 | P | 8.35 (212) |
| -23 | E4-420 | E4-421 | -23-12 | P | 8.86 (225) |
| -237 | E4-420 | E4-421 | -237-12 | P | 9.33 (237) |
| -25 | E4-420/R4-420 | E4-421/R4-421 | -25-12 | P | 9.84 (250) |
| -262 | E4-420 | E4-421 | -262-12 | P | 10.31 (262) |
| -28 | E4-420 | E4-421 | -28-12 | P | 10.83 (275) |
| -29 | E4-420 | E4-421 | -29-12 | P | 11.30 (287) |
| -30 | E4-420/R4-420 | E4-421/R4-421 | -30-12 | P | 11.81 (300) |
| -312 | E4-420 | E4-421 | -312-12 | P | 12.28 (312) |
| -325 | E4-420 | E4-421 | -325-12 | P | 12.79 (325) |
| -337 | E4-420 | E4-421 | -337-12 | P | 13.27 (337) |
| -350 | E4-420 | E4-421 | -350-12 | P | 13.78 (350) |
| -362 | E4-420 | E4-421 | -362-12 | P | 14.25 (362) |
| -375 | E4-420 | E4-421 | -375-12 | P | 14.76 (375) |
| -387 | E4-420 | E4-421 | -387-12 | P | 15.24 (387) |
| -400 | E4-420 | E4-421 | -400-12 | P | 15.75 (400) |

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

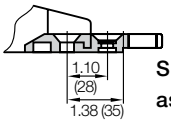
## Chainfix Clip

### Modular snap-on strain relief device

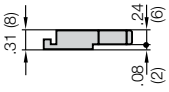
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for cross-bars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

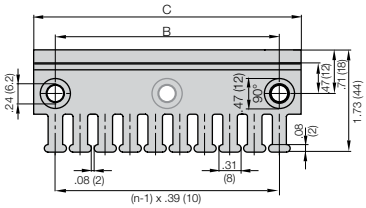



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

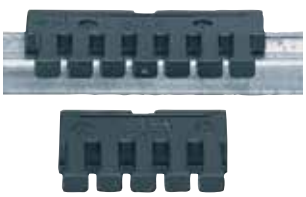
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10 in main catalog.**



### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-42/H4-42/R4-42
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
E4-42-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.19 (81) | **93-50-200** |
| **-06** | 3.90 (99) | **93-50-225** |
| **-07** | 4.17 (106) | **93-50-225** |
| **-087** | 4.69 (119) | **93-50-250** |
| **-097** | 4.92 (125) | **93-50-250** |
| **-10** | 5.16 (131) | **93-50-250** |
| **-11** | 5.47 (139) | **93-50-250** |
| **-112** | 5.67 (144) | **93-50-275** |
| **-12** | 6.14 (156) | **93-50-275** |
| **-137** | 6.65 (169) | **93-50-300** |
| **-15** | 7.12 (181) | **93-50-300** |
| **-162** | 7.64 (194) | **93-50-325** |
| **-17** | 7.83 (199) | **93-50-325** |
| **-18** | 8.11 (206) | **93-50-325** |
| **-187** | 8.62 (219) | **93-50-350** |
| **-20** | 9.09 (231) | **93-50-350** |
| **-212** | 9.61 (244) | **93-50-375** |
| **-23** | 10.08 (256) | **93-50-375** |
| **-237** | 10.59 (269) | **93-50-400** |
| **-25** | 11.06 (281) | **93-50-400** |
| **-262** | 11.57 (294) | **93-50-425** |
| **-28** | 12.05 (306) | **93-50-425** |
| **-29** | 12.56 (319) | **93-50-450** |
| **-30** | 13.03 (331) | **93-50-450** |
| **-312** | 13.54 (344) | **93-50-475** |
| **-325** | 14.01 (356) | **93-50-475** |
| **-337** | 14.52 (369) | **93-50-500** |
| **-350** | 15.00 (381) | **93-50-500** |
| **-362** | 15.51 (394) | **93-50-525** |
| **-375** | 16.02 (407) | **93-50-525** |
| **-387** | 16.50 (419) | **93-50-550** |
| **-400** | 16.97 (431) | **93-50-550** |

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 93-30**
- 1/2 travel length of glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 93-50-XX**

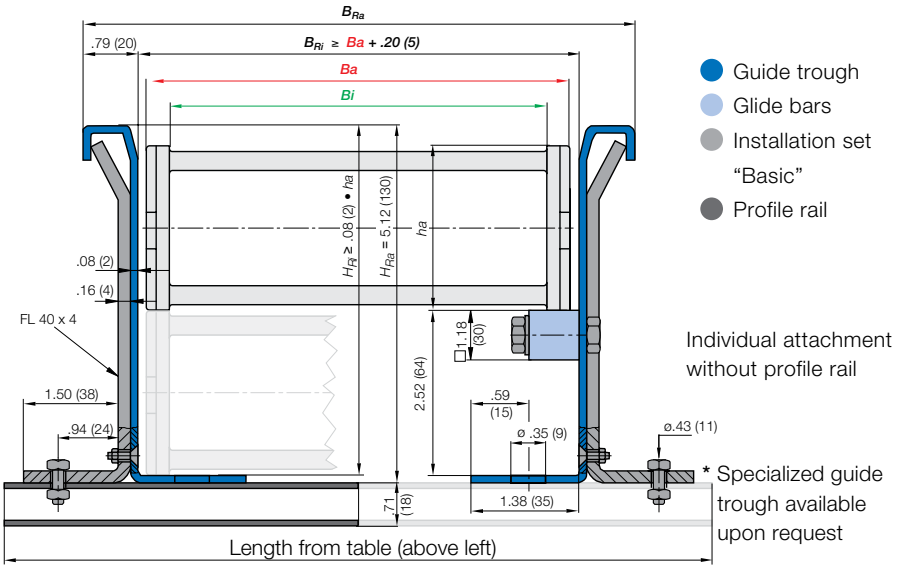
**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

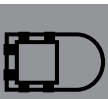
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56

## Price Index

Series E4-56 | Series H4-56 | Series R4-56

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 8.20 ft (2.5 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-52**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 14040/14140/R18840**

## Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework

**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-56-30-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **E4-56-30-300-0** | **E-Chain®** |
| With 2 separators **411** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-560-30-12P** | **Mounting Bracket** |

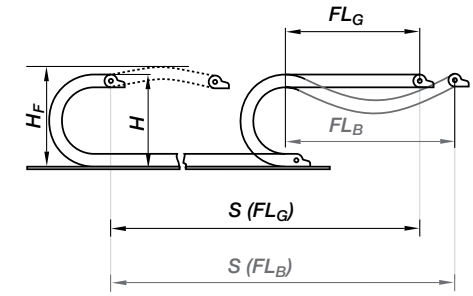
# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Installation Dimensions

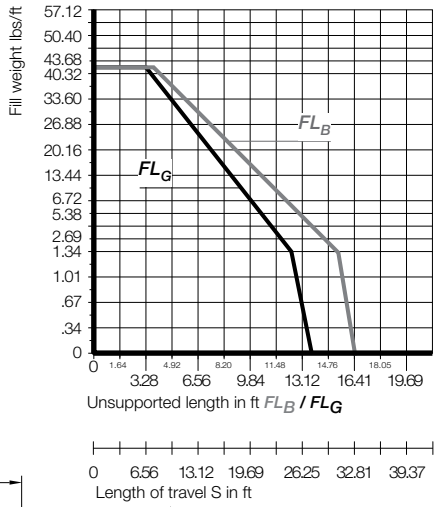


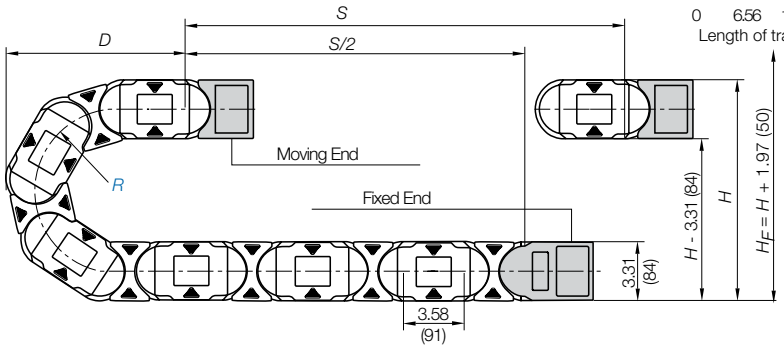
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.96$ **in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K = \pi \bullet R + safety\ buffer$
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

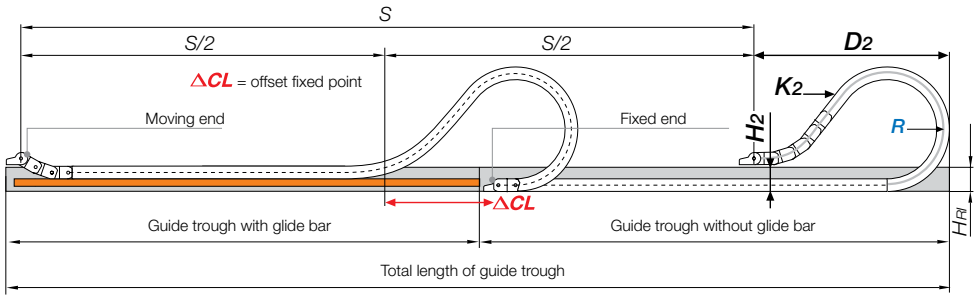
*If the mounting bracket location is set lower

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H^{*0}_{+25}$ | 10.63 (270) | 15.12 (384) | 17.09 (434) | 19.06 (484) | 22.20 (564) | 22.99 (584) | 26.93 (684) | 30.87 (784) | 34.80 (884) | 38.74 (984) | 42.68 (1084) |
| D | 12.36 (314) | 12.95 (329) | 13.94 (354) | 14.92 (379) | 16.50 (419) | 16.89 (429) | 18.86 (479) | 20.83 (529) | 22.79 (579) | 24.76 (629) | 26.73 (679) |
| K | 24.02 (610) | 25.79 (655) | 28.94 (735) | 32.09 (815) | 37.01 (940) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 62.99 (1600) | 69.09 (1755) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 13.94 (354) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2$ | 10.55 (268) | 17.72 (450) | 22.83 (580) | 27.95 (710) | 35.43 (900) | 38.58 (980) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 66.93 (1700) | 72.83 (1850) |
| $K_2$ | 24.02 (610) | 32.24 (819) | 42.99 (1092) | 50.16 (1274) | 60.91 (1547) | 64.49 (1638) | 78.82 (2002) | 89.57 (2275) | 100.31 (2548) | 114.64 (2912) | 128.98 (3276) |
| ΔCL | - | 6.26 (159) | 10.20 (259) | 14.54 (359) | 20.04 (509) | 22.01 (559) | 27.91 (709) | 35.79 (909) | 37.76 (959) | 41.69 (1059) | 45.63 (1159) |

**In case of travels between 32.8 and 39.4 ft (10 and 12 m) we recommend a longer unsupported length.**

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

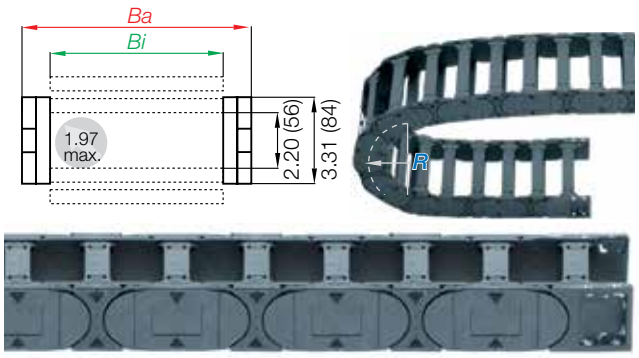
Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-56 - E-Chain® with crossbars every link

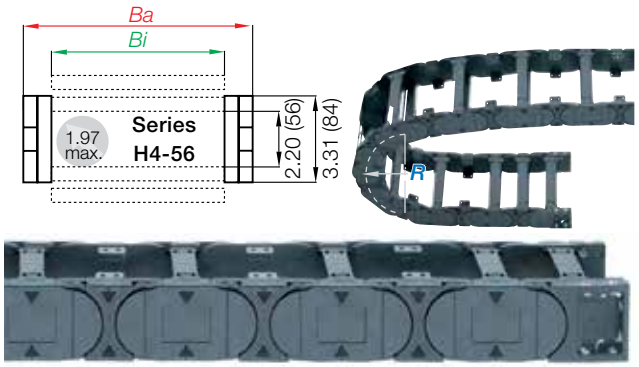



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-56- 13- 250- 0
- Color - Black
- Bending radius
- Width
- Series

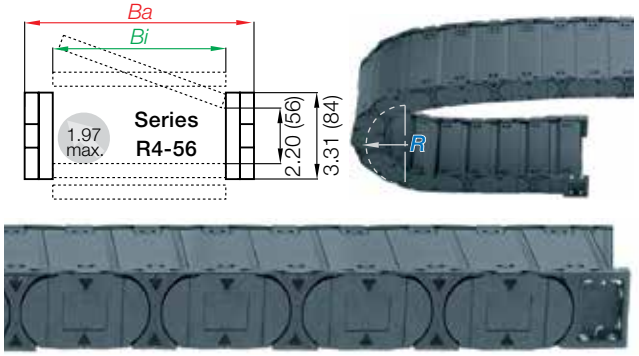
## Series H4-56 - E-Chain® with crossbars every other link




- Crossbars every other link
- Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

H4-56- 13- 250- 0
- Color - Black
- Bending radius
- Width
- Series

## Series R4-56 - fully enclosed E-Tube

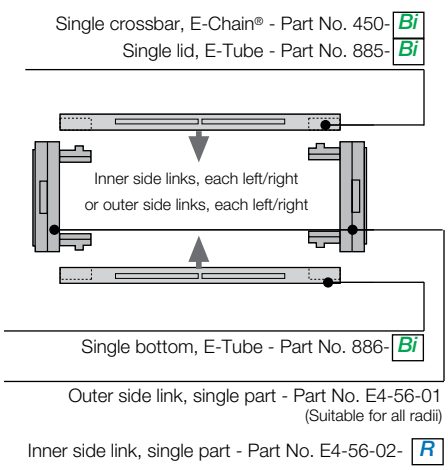


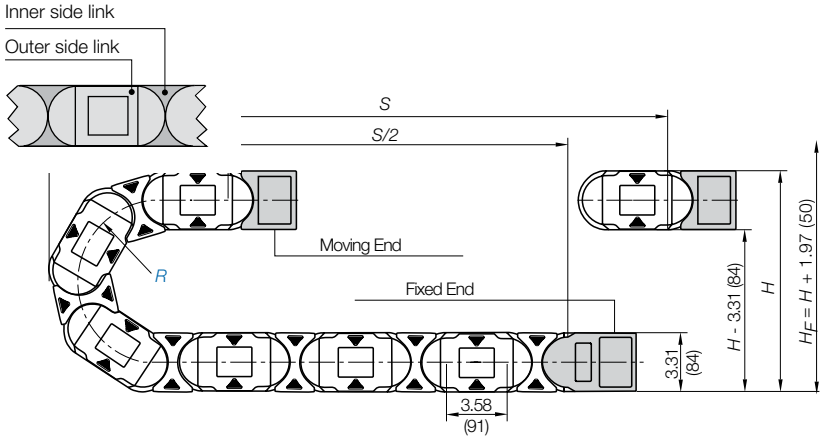

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

R4-56- 25- 250- 0
- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Product Range



| Part Number | | | | Bi | Ba | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | in. (mm) | in. (mm) | E4-56 lbs/ft (kg/m) | H4-56 lbs/ft (kg/m) | R4-56 lbs/ft (kg/m) |
| E4-56-05- | H4-56-05- | | [ ]-0 | 1.97 (50) | 3.31 (84) | ≈ 2.22 (3.30) | ≈ 2.12 (3.16) | – |
| E4-56-06- | H4-56-06- | | [ ]-0 | 2.56 (65) | 3.90 (99) | ≈ 2.28 (3.39) | ≈ 2.15 (3.20) | – |
| E4-56-07- | H4-56-07- | *R4-56-07- | [ ]-0 | 2.95 (75) | 4.29 (109) | ≈ 2.33 (3.46) | ≈ 2.18 (3.24) | ≈ 2.63 (3.91) |
| E4-56-08- | H4-56-08- | | [ ]-0 | 3.43 (87) | 4.76 (121) | ≈ 2.38 (3.54) | ≈ 2.20 (3.28) | |
| E4-56-10- | H4-56-10- | R4-56-10- | [ ]-0 | 3.94 (100) | 5.28 (134) | ≈ 2.44 (3.63) | ≈ 2.23 (3.32) | ≈ 2.82 (4.20) |
| E4-56-11- | H4-56-11 | - | [ ]-0 | 4.41 (112) | 5.79 (147) | ≈ 2.52 (3.75) | ≈ 2.27 (3.38) | – |
| E4-56-12- | H4-56-12- | R4-56-12- | [ ]-0 | 4.92 (125) | 6.26 (159) | ≈ 2.57 (3.83) | ≈ 2.30 (3.42) | ≈ 3.06 (4.56) |
| E4-56-13- | H4-56-13- | | [ ]-0 | 5.39 (137) | 6.77 (172) | ≈ 2.66 (3.96) | ≈ 2.35 (3.49) | – |
| E4-56-15- | H4-56-15- | R4-56-15- | [ ]-0 | 5.91 (150) | 7.24 (184) | ≈ 2.69 (4.00) | ≈ 2.36 (3.51) | ≈ 3.32 (4.94) |
| E4-56-16- | H4-56-16- | | [ ]-0 | 6.38 (162) | 7.76 (197) | ≈ 2.76 (4.11) | ≈ 2.39 (3.56) | – |
| E4-56-17- | H4-56-17- | R4-56-17 | [ ]-0 | 6.89 (175) | 8.23 (209) | ≈ 2.86 (4.25) | ≈ 2.44 (3.63) | ≈ 3.53 (5.25) |
| E4-56-18- | H4-56-18- | | [ ]-0 | 7.36 (187) | 8.74 (222) | ≈ 2.93 (4.36) | ≈ 2.48 (3.69) | – |
| E4-56-20- | H4-56-20- | R4-56-20- | [ ]-0 | 7.87 (200) | 9.21 (234) | ≈ 2.96 (4.41) | ≈ 2.49 (3.71) | ≈ 3.74 (5.56) |
| E4-56-21- | H4-56-21- | | [ ]-0 | 8.35 (212) | 9.72 (247) | ≈ 3.01 (4.48) | ≈ 2.52 (3.75) | – |
| E4-56-22- | H4-56-22- | | [ ]-0 | 8.86 (225) | 10.20 (259) | ≈ 3.06 (4.55) | ≈ 2.54 (3.78) | – |
| E4-56-23- | H4-56-23- | | [ ]-0 | 9.33 (237) | 10.71 (272) | ≈ 3.13 (4.66) | ≈ 2.58 (3.84) | – |
| E4-56-25- | H4-56-25- | R4-56-25- | [ ]-0 | 9.84 (250) | 11.18 (284) | ≈ 3.21 (4.77) | ≈ 2.61 (3.89) | ≈ 4.23 (6.29) |
| E4-56-26- | H4-56-26- | | [ ]-0 | 10.31 (262) | 11.69 (297) | ≈ 3.27 (4.87) | ≈ 2.65 (3.94) | – |
| E4-56-27- | H4-56-27- | R4-56-27- | [ ]-0 | 10.83 (275) | 12.17 (309) | ≈ 3.34 (4.97) | ≈ 2.68 (3.99) | ≈ 4.47 (6.65) |
| E4-56-28- | H4-56-28- | | [ ]-0 | 11.30 (287) | 12.68 (322) | ≈ 3.38 (5.03) | ≈ 2.70 (4.02) | – |
| E4-56-30- | H4-56-30- | R4-56-30- | [ ]-0 | 11.81 (300) | 13.15 (334) | ≈ 3.48 (5.18) | ≈ 2.76 (4.10) | ≈ 4.67 (6.95) |
| E4-56-31- | H4-56-31- | | [ ]-0 | 12.28 (312) | 13.66 (347) | ≈ 3.50 (5.21) | ≈ 2.76 (4.11) | – |
| E4-56-32- | H4-56-32- | | [ ]-0 | 12.79 (325) | 14.13 (359) | ≈ 3.57 (5.32) | ≈ 2.80 (4.17) | – |
| E4-56-33- | H4-56-33- | | [ ]-0 | 13.27 (337) | 14.65 (372) | ≈ 3.66 (5.44) | ≈ 2.84 (4.23) | – |
| E4-56-35- | H4-56-35- | R4-56-35- | [ ]-0 | 13.78 (350) | 15.12 (384) | ≈ 3.79 (5.64) | ≈ 2.91 (4.33) | ≈ 5.14 (7.65) |
| E4-56-36- | H4-56-36- | | [ ]-0 | 14.25 (362) | 15.63 (397) | ≈ 3.73 (5.55) | ≈ 2.88 (4.28) | – |
| E4-56-37- | H4-56-37- | | [ ]-0 | 14.76 (375) | 16.10 (409) | ≈ 3.80 (5.65) | ≈ 2.91 (4.33) | – |
| E4-56-38- | H4-56-38- | | [ ]-0 | 15.24 (387) | 16.61 (422) | ≈ 3.87 (5.76) | ≈ 2.95 (4.39) | – |
| E4-56-40- | H4-56-40- | R4-56-40- | [ ]-0 | 15.75 (400) | 17.09 (434) | ≈ 4.05 (6.03) | ≈ 3.04 (4.52) | ≈ 5.81 (8.65) |
| E4-56-41- | H4-56-41- | | [ ]-0 | 16.22 (412) | 17.60 (447) | ≈ 4.00 (5.96) | ≈ 3.01 (4.48) | – |
| E4-56-42- | H4-56-42- | | [ ]-0 | 16.73 (425) | 18.07 (459) | ≈ 4.19 (6.23) | ≈ 3.11 (4.63) | – |
| E4-56-43- | H4-56-43- | | [ ]-0 | 17.20 (437) | 18.58 (472) | ≈ 4.09 (6.09) | ≈ 3.06 (4.55) | – |
| E4-56-45- | H4-56-45- | | [ ]-0 | 17.72 (450) | 19.06 (484) | ≈ 4.31 (6.42) | ≈ 3.17 (4.72) | – |
| E4-56-46- | H4-56-46- | R4-56-46- | [ ]-0 | 18.19 (462) | 19.57 (497) | ≈ 4.28 (6.37) | ≈ 3.15 (4.69) | ≈ 6.13 (9.12) |
| E4-56-47- | H4-56-47- | | [ ]-0 | 18.70 (475) | 20.04 (509) | ≈ 4.31 (6.41) | ≈ 3.16 (4.71) | – |
| E4-56-48- | H4-56-48- | | [ ]-0 | 19.17 (487) | 20.55 (522) | ≈ 4.48 (6.66) | ≈ 3.25 (4.84) | – |
| E4-56-50- | H4-56-50- | | [ ]-0 | 19.69 (500) | 21.02 (534) | ≈ 4.54 (6.76) | ≈ 3.29 (4.89) | – |
| E4-56-51- | H4-56-51- | | [ ]-0 | 20.16 (512) | 21.54 (547) | ≈ 4.48 (6.67) | ≈ 3.25 (4.84) | – |
| E4-56-52- | H4-56-52- | | [ ]-0 | 20.67 (525) | 22.01 (559) | ≈ 4.60 (6.84) | ≈ 3.31 (4.93) | – |
| E4-56-53- | H4-56-53- | | [ ]-0 | 21.14 (537) | 22.52 (572) | ≈ 4.66 (6.93) | ≈ 3.34(4.97) | – |
| E4-56-55- | H4-56-55- | | [ ]-0 | 21.65 (550) | 22.99 (584) | ≈ 4.95 (7.36) | ≈ 3.48 (5.18) | – |
| E4-56-60- | H4-56-60- | | -0 | 23.62 (600) | 24.96 (634) | ≈ 5.09 (7.58) | ≈ 3.56 (5.30) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: E4-56-30-[300]-0

| | 135** | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) |
| $H^{**}_{+25}$ | 13.94 (354) | 15.12 (384) | 17.09 (434) | 19.06 (484) | 22.20 (564) | 22.99 (584) | 26.93 (684) | 30.87 (784) | 34.80 (884) | 38.74 (984) | 42.68 (1084) |
| *D* | 12.36 (314) | 12.95 (329) | 13.94 (354) | 14.92 (379) | 16.50 (419) | 16.89 (429) | 18.86 (479) | 20.83 (529) | 22.79 (579) | 24.76 (629) | 26.73 (679) |
| *K* | 24.02 (610) | 25.79 (655) | 28.94 (735) | 32.09 (815) | 37.01 (940) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 62.99 (1600) | 69.09 (1755) |

** This radius is not available for the R4-56 Series
*Removable lid only, no hinged option

0 = Standard color black. For other colors see Chapter 1
For wider chains see page 6.56. For large diameter hoses see page 6.56

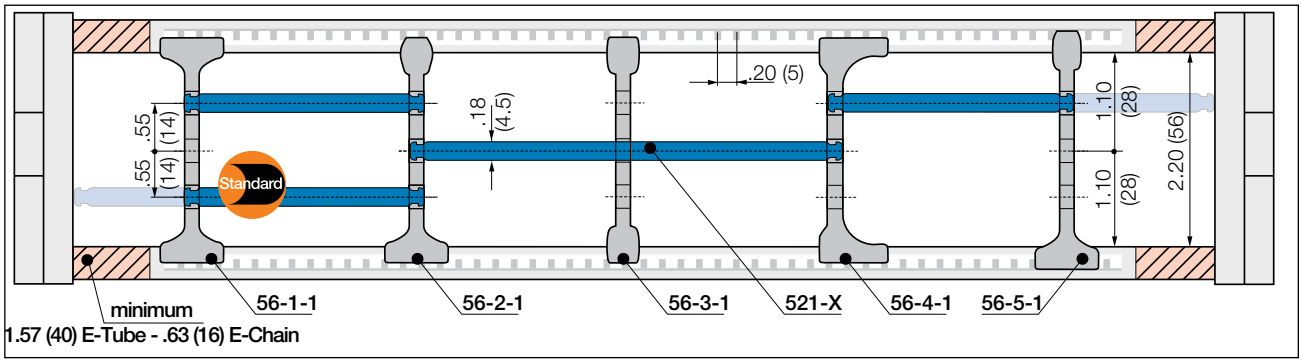
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Interior Separation - New Generation

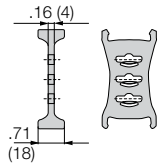


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



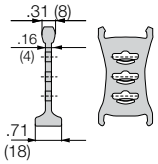

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 56-1** |
| Assembled | **Part No. 56-1-1** |

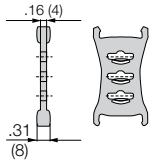
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 56-2** |
| Assembled | **Part No. 56-2-1** |

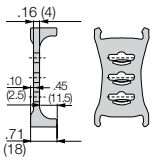
- **Separator 56-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 56-3** |
| Assembled | **Part No. 56-3-1** |

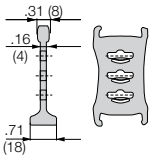
- **Separator 56-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-4** |
| Assembled | **Part No. 56-4-1** |

- **Separator 56-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

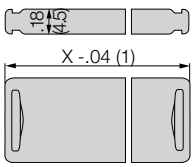



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-5** |
| Assembled | **Part No. 56-5-1** |

- **Separator 56-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

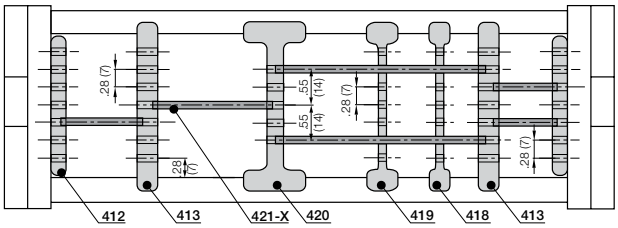
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-125** | **521-125** | 11.81 (300) | **520-125** | **521-125** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-125** | **521-125** | 13.78 (350) | **520-125** | **521-125** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-125** | **521-125** | 14.76 (375) | **520-125** | **521-125** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-125** | **521-125** | 15.24 (387) | **520-125** | **521-125** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-125** | **521-125** | 17.723 (450) | **520-125** | **521-125** |

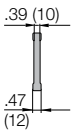
# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Interior Separation - Previous Generation

## Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

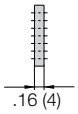





**Split separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. T563** |
| Assembled | **Part No. T563M** |

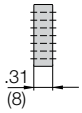
- **Split separator T563 for E-Chains®**
  This separator is ideal for subsequent shelving or the initial assembly of the E-Chain. Fast assembly and disassembly using a hinge/push mechanism. Enhances flexibility




**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 402** |
| Assembled | **Part No. 412** |

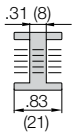
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 403** |
| Assembled | **Part No. 413** |

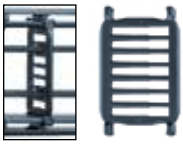
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

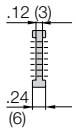



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 410** |
| Assembled | **Part No. 420** |

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

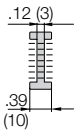





**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 408** |
| Assembled | **Part No. 418** |

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 409** |
| Assembled | **Part No. 419** |

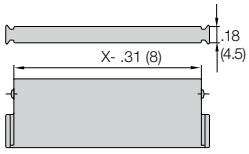
- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

### Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 (18) | .39 (10) | **420-18** | **421-18** |
| .91 (23) | .59 (15) | **420-23** | **421-23** |
| .98 (25) | .67 (17) | **420-25** | **421-25** |
| 1.10 (28) | .79 (20) | **420-28** | **421-28** |
| 1.30 (33) | .98 (25) | **420-33** | **421-33** |
| 1.69 (43) | 1.38 (35) | **420-43** | **421-43** |
| 1.97 (50) | 1.65 (42) | **420-50** | **421-50** |
| 2.44 (62) | 2.13 (54) | **420-62** | **421-62** |

| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.95 (75) | 2.64 (67) | **420-75** | **421-75** |
| 3.46 (88) | 3.15 (80) | **420-88** | **421-88** |
| 3.94 (100) | 3.62 (92) | **420-100** | **421-100** |
| 4.92 (125) | 4.61(117) | **420-125** | **421-125** |
| 5.91 (150) | 5.59(142) | **420-150** | **421-150** |
| 6.89 (175) | 6.57(167) | **420-175** | **421-175** |
| 7.36 (187) | 7.05(179) | **420-187** | **421-187** |
| 7.87 (200) | 7.56(192) | **420-200** | **421-200** |



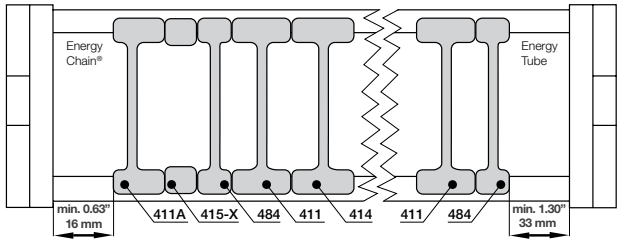
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

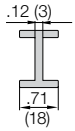
# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Interior Separation - Previous Generation

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. In standard configuration, a separator is installed every second chain link.

**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

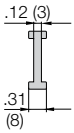





**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 401** |
| Assembled | **Part No. 411** |

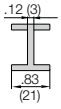
- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 483** |
| Assembled | **Part No. 484** |

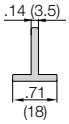
- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.




**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 404** |
| Assembled | **Part No. 414** |

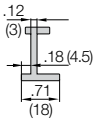
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.




**Locking separator (tube only)**

| | |
|---|---|
| Unassembled | **Part No. 406** |
| Assembled | **Part No. 416** |

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 401A** |
| Assembled | **Part No. 411A** |

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

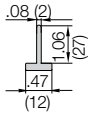
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) | Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) | **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -15** | **415 -15** | .59" | (15) | **405 -40** | **415 -40** | 1.57" | (40) |
| **405 -20** | **415 -20** | .79" | (20) | | | | |

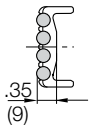
**Center crossbar** - for applications involving a very large number of thin cables This offers the option of subdividing the E-Chain® into upper and lower halves




**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 405** |
| Assembled | **Part No. 415** |

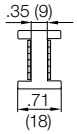
**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables.The integrated rollers compensate for relative movement between the chain and the hose or cable.




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

**Roller separator -** performs a similar function to the Rollclip, but doubles as a separator.




**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 429** |
| Assembled | **Part No. 430** |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Special Accessories

Part number example for E-Chain®

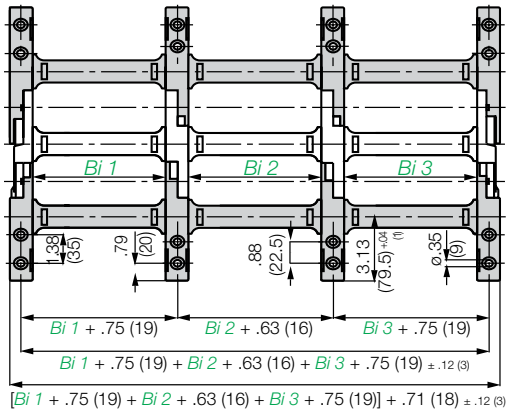
**E4-56-10/20/10-** 200 **-0**

**E4-56-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

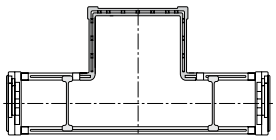
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



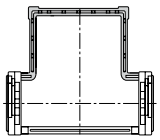
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

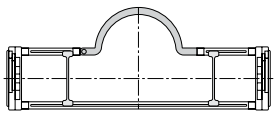
- Intended for cables and hoses with a maximum outer diameter of 9.65 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



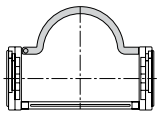
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.09 (180) | Square | Yes | No |
| **450-35-D250** | 7.68 (195) | Square | Yes | No |
| **450-40-D300** | 9.65 (245) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.09 (180) | Square | No | Yes |
| **450-30-HD250** | 7.68 (195) | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

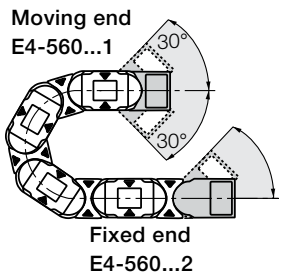
# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Mounting Brackets

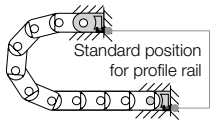
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

**Standard**

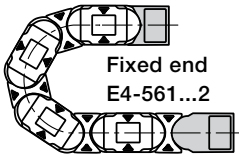
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

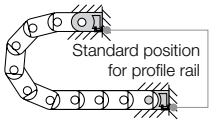




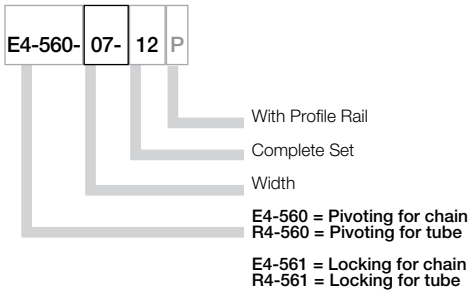

## Option 2: locking

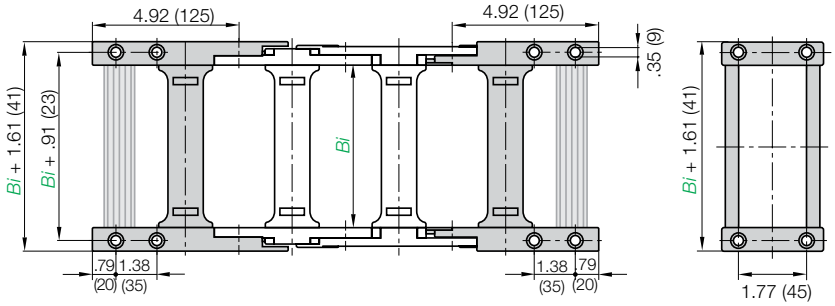
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations






### Part Number Structure




**Due to the design of the E4-56 series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain. For locking brackets change part number to 561**

**Part No. Full Set** (pivoting)
Series E4-56 or H4-56
E4-560-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-56 or H4-56
E4-560-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R4-56
R4-560-Width-12

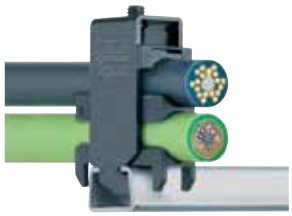
**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-56
R4-560-Width-12P

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -05* | E4-560 | E4-561 | -05-12 | P | 1.97 (50) |
| -06 | E4-560 | E4-561 | -06-12 | P | 2.56 (65) |
| -07 | E4-560/R4-560 | E4-561/R4-561 | -07-12 | P | 2.95 (75) |
| -08 | E4-560 | E4-561 | -08-12 | P | 3.43 (87) |
| -10 | E4-560/R4-560 | E4-561/R4-561 | -10-12 | P | 3.94 (100) |
| -11 | E4-560 | E4-561 | -11-12 | P | 4.41 (112) |
| -12 | E4-560/R4-560 | E4-561/R4-561 | -12-12 | P | 4.92 (125) |
| -13 | E4-560 | E4-561 | -13-12 | P | 5.39 (137) |
| -15 | E4-560/R4-560 | E4-561/R4-561 | -15-12 | P | 5.91 (150) |
| -16 | E4-560 | E4-561 | -16-12 | P | 6.38 (162) |
| -17 | E4-560/R4-560 | E4-561/R4-561 | -17-12 | P | 6.89 (175) |
| -18 | E4-560 | E4-561 | -18-12 | P | 7.36 (187) |
| -20 | E4-560/R4-560 | E4-561/R4-561 | -20-12 | P | 7.87 (200) |
| -21 | E4-560 | E4-561 | -21-12 | P | 8.35 (212) |
| -22 | E4-560 | E4-561 | -22-12 | P | 8.86 (225) |
| -23 | E4-560 | E4-561 | -23-12 | P | 9.33 (237) |
| -25 | E4-560/R4-560 | E4-561/R4-561 | -25-12 | P | 9.84 (250) |
| -26 | E4-560 | E4-561 | -26-12 | P | 10.31 (262) |
| -27 | E4-560/R4-560 | E4-561/R4-561 | -27-12 | P | 10.83 (275) |
| -28 | E4-560 | E4-561 | -28-12 | P | 11.30 (287) |
| -30 | E4-560/R4-560 | E4-561/R4-561 | -30-12 | P | 11.81 (300) |

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -31 | E4-560 | E4-561 | -31-12 | P | 12.28 (312) |
| -32 | E4-560 | E4-561 | -32-12 | P | 12.79 (325) |
| -33 | E4-560 | E4-561 | -33-12 | P | 13.27 (337) |
| -35 | E4-560/R4-560 | E4-561/R4-561 | -35-12 | P | 13.78 (350) |
| -36 | E4-560 | E4-561 | -36-12 | P | 14.25 (362) |
| -37 | E4-560 | E4-561 | -37-12 | P | 14.76 (375) |
| -38 | E4-560 | E4-561 | -38-12 | P | 15.24 (387) |
| -40 | E4-560/R4-560 | E4-561/R4-561 | -40-12 | P | 15.75 (400) |
| -41 | E4-560 | E4-561 | -41-12 | P | 16.22 (412) |
| -42 | E4-560 | E4-561 | -42-12 | P | 16.73 (425) |
| -43 | E4-560 | E4-561 | -43-12 | P | 17.20 (437) |
| -45 | E4-560 | E4-561 | -45-12 | P | 17.72 (450) |
| -46 | E4-560/R4-560 | E4-561/R4-561 | -46-12 | P | 18.19 (462) |
| -47 | E4-560 | E4-561 | -47-12 | P | 18.70 (475) |
| -48 | E4-560 | E4-561 | -48-12 | P | 19.17 (487) |
| -50 | E4-560 | E4-561 | -50-12 | P | 19.69 (500) |
| -51 | E4-560 | E4-561 | -51-12 | P | 20.16 (512) |
| -52 | E4-560 | E4-561 | -52-12 | P | 20.67 (525) |
| -53 | E4-560 | E4-561 | -53-12 | P | 21.14 (537) |
| -55 | E4-560 | E4-561 | -55-12 | P | 21.65 (550) |
| -60 | E4-560 | E4-561 | -60-12 | P | 23.62 (600) |

# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Strain Relief

## Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

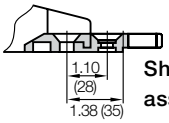
## Chainfix Clip

### Modular snap-on strain relief device

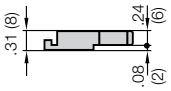
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

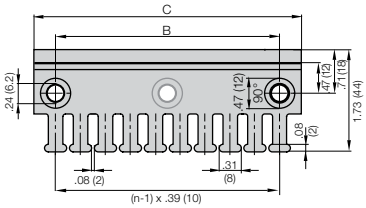



Single tiewrap plate

### Option 1: Tiewrap plates as an individual part

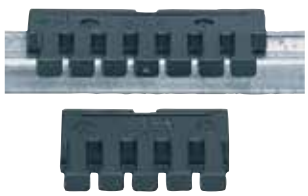
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10 in main catalog.**



### Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

### Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-56/H4-56/R4-56
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

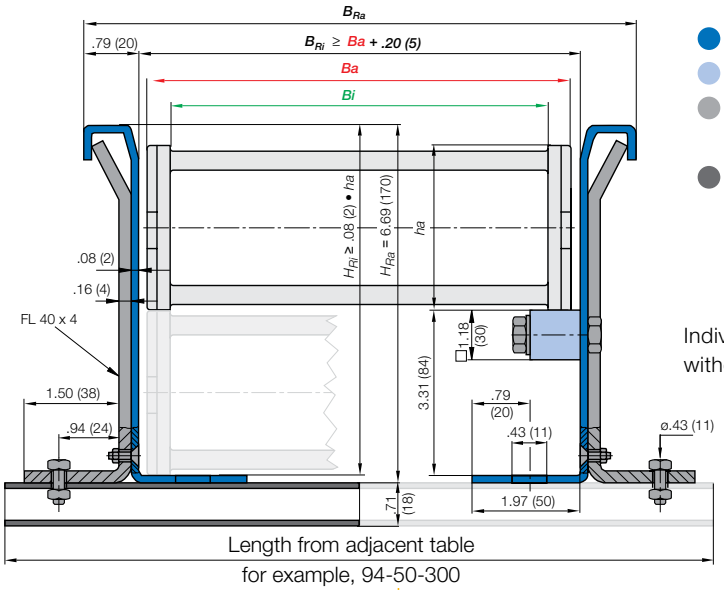
**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**
= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

Width of Crossbar
E4-56-**05**-200-0

| -05 | $B_{Ri}$ 3.50 (89) | Installation Part No. * |
|---|---|---|
| -06 | 4.09 (104) | 94-50-225 |
| -07 | 4.49 (114) | 94-50-225 |
| -08 | 5.04 (128) | 94-50-250 |
| -10 | 5.47 (139) | 94-50-250 |
| -11 | 5.98 (152) | 94-50-275 |
| -12 | 6.46 (164) | 94-50-275 |
| -13 | 6.97 (177) | 94-50-300 |
| -15 | 7.44 (189) | 94-50-300 |
| -16 | 7.95 (202) | 94-50-325 |
| -17 | 8.42 (214) | 94-50-325 |
| -18 | 8.94 (227) | 94-50-350 |
| -20 | 9.41 (239) | 94-50-350 |
| -21 | 9.92 (252) | 94-50-375 |
| -22 | 10.39 (264) | 94-50-375 |
| -23 | 10.91 (277) | 94-50-400 |
| -25 | 11.38 (289) | 94-50-400 |
| -26 | 11.89 (302) | 94-50-425 |
| -27 | 12.36 (314) | 94-50-425 |
| -28 | 12.87 (327) | 94-50-450 |
| -30 | 13.35 (339) | 94-50-450 |
| -31 | 13.86 (352) | 94-50-475 |
| -32 | 14.33 (364) | 94-50-475 |
| -33 | 14.84 (377) | 94-50-500 |
| -35 | 15.31 (389) | 94-50-500 |
| -36 | 15.82 (402) | 94-50-525 |
| -37 | 16.30 (414) | 94-50-525 |
| -38 | 16.81 (427) | 94-50-550 |
| -40 | 17.28 (439) | 94-50-550 |
| -41 | 17.79 (452) | 94-50-575 |
| -42 | 18.27 (464) | 94-50-575 |
| -43 | 18.78 (477) | 94-50-600 |
| -45 | 19.25 (489) | 94-50-600 |
| -46 | 19.76 (502) | 94-50-625 |
| -47 | 20.24 (514) | 94-50-625 |
| -48 | 20.75 (527) | 94-50-650 |
| -50 | 21.22 (539) | 94-50-650 |
| -51 | 21.73 (552) | 94-50-675 |
| -52 | 22.20 (564) | 94-50-675 |
| -53 | 22.72 (577) | 94-50-700 |
| -55 | 23.19 (589) | 94-50-700 |
| -60 | 25.16 (639) | 94-50-750 |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

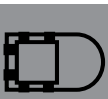
* Specialized guide trough available upon request

Standard length profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80

## Price Index

Series E4-80 Series H4-80

Series R4-80

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

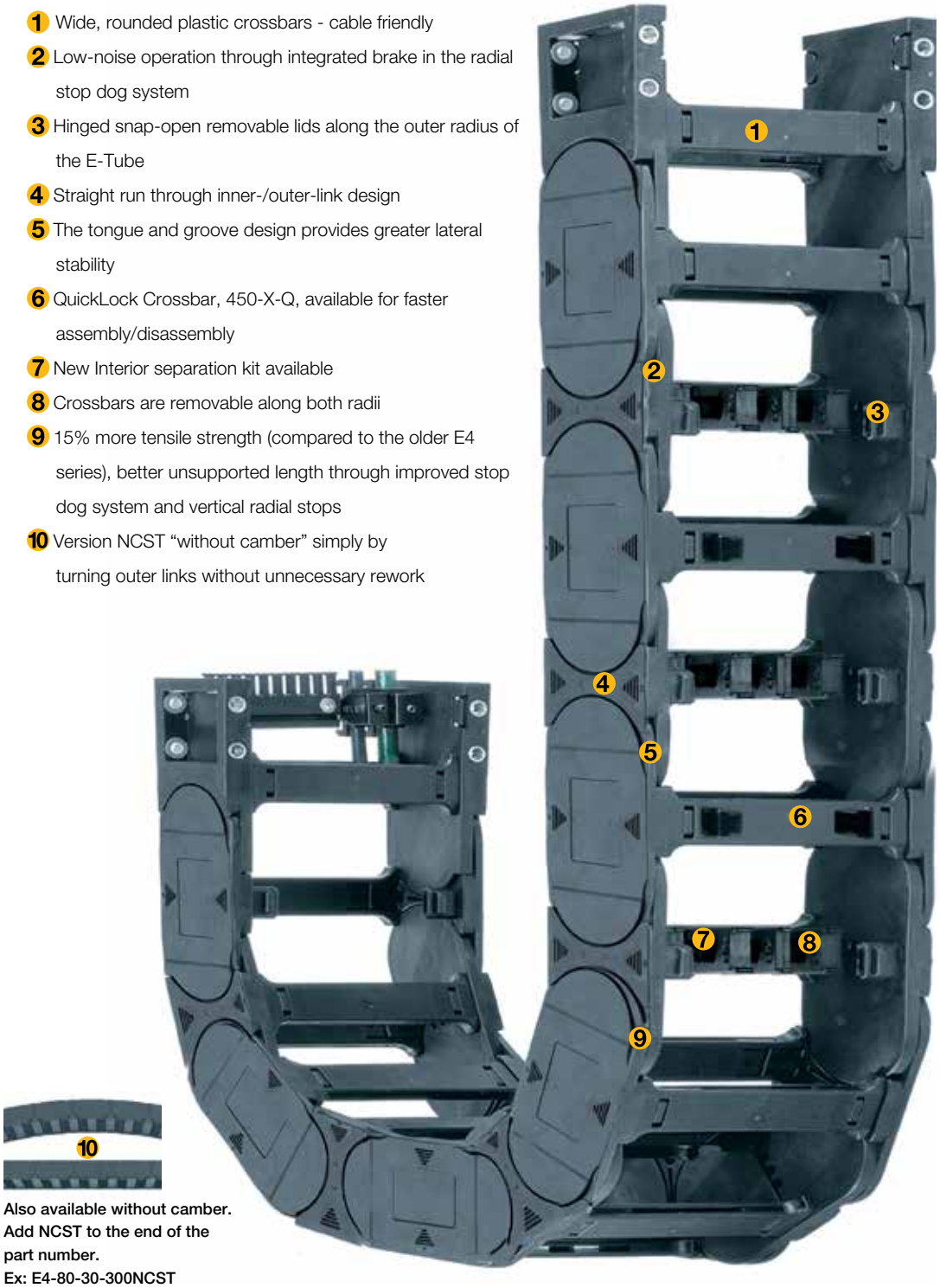
## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High additional loads

- When an extremely low vibration E-Chain®/E-Tube is required
  ➤ **Series E6-80**
- When an economic one-sided snap-open E-Chain®/E-Tube is required
  ➤ **Series 15050/15150/R19850**

## Features & Benefits

1. Wide, rounded plastic crossbars - cable friendly
2. Low-noise operation through integrated brake in the radial stop dog system
3. Hinged snap-open removable lids along the outer radius of the E-Tube
4. Straight run through inner-/outer-link design
5. The tongue and groove design provides greater lateral stability
6. QuickLock Crossbar, 450-X-Q, available for faster assembly/disassembly
7. New Interior separation kit available
8. Crossbars are removable along both radii
9. 15% more tensile strength (compared to the older E4 series), better unsupported length through improved stop dog system and vertical radial stops
10. Version NCST “without camber” simply by turning outer links without unnecessary rework







**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-80-30-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E4-80-30-300-0** | **E-Chain®** |
| With 2 separators **511** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-800-30-12P** | **Mounting Bracket** |

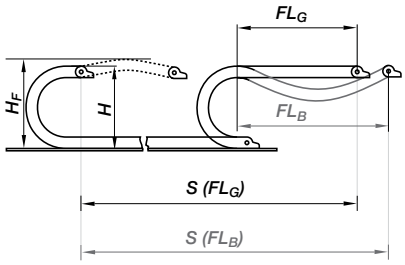
# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Installation Dimensions

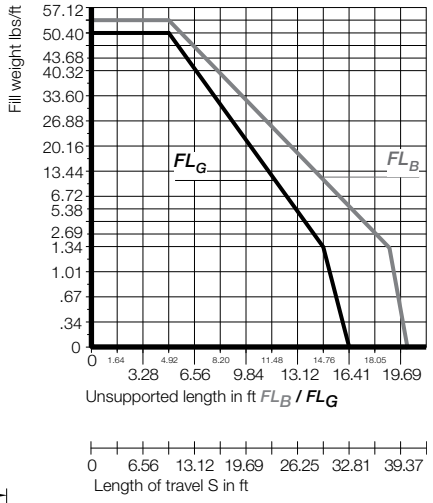
**Short travel, unsupported length**

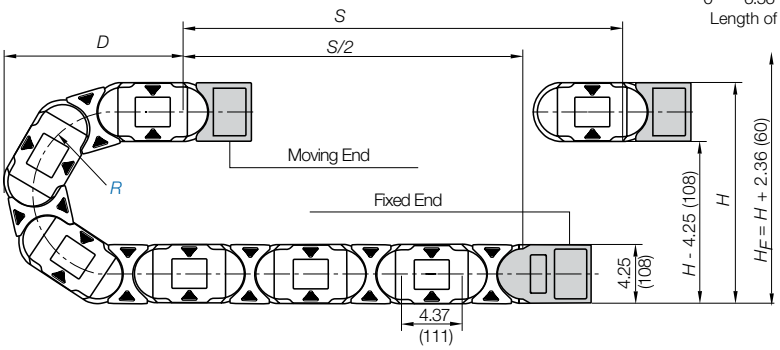
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 4.37" (111 mm)
**Links per ft (m): =** 2.75 (9)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 2.36$ in. (60 mm) (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_{-0}^{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 47.56 (1208) | 51.50 (1308) | 82.99 (2108) |
| D | 14.61 (371) | 16.57 (421) | 18.54 (471) | 20.51 (521) | 22.48 (571) | 24.45 (621) | 28.38 (721) | 30.35 (771) | 32.32 (821) | 48.07 (1221) |
| K | 27.36 (695) | 33.66 (855) | 39.76 (1010) | 45.87 (1165) | 52.17 (1325) | 58.27 (1480) | 70.67 (1795) | 76.77 (1950) | 83.07 (2110) | 132.48 (3365) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

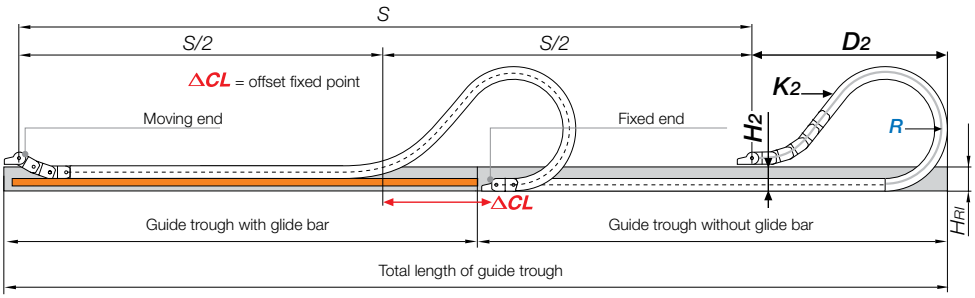
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)**

**For center mount applications:**
**Chain length =** $S/2 + K_2$




| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | - | - | - |
| $D_{2\ +25}$ | 21.65 (550) | 31.50 (800) | 39.37 (1000) | 47.24 (1200) | 57.09 (1450) | 62.99 (1600) | 82.68 (2100) | - | - | - |
| $K_2$ | 35.04 (890) | 52.36 (1330) | 65.55 (1665) | 78.74 (2000) | 91.73 (2330) | 104.72 (2660) | 135.43 (3440) | - | - | - |
| ΔCL | 7.44 (189) | 15.61 (389) | 21.22 (539) | 27.13 (689) | 35.00 (889) | 38.94 (989) | 54.69 (1389) | - | - | - |

**In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
**➤ Chapter 1**

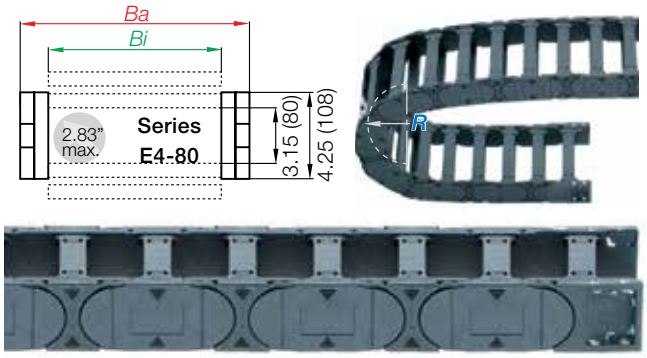



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-80 - E-Chain® with crossbars every link



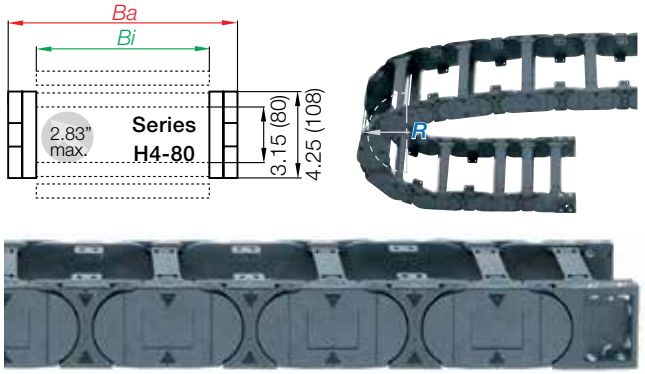

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

## Series H4-80 - E-Chain® with crossbars every other link



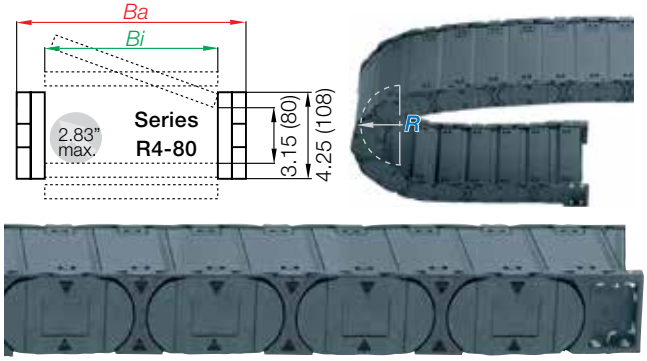

- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

H4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

## Series R4-80 - fully enclosed E-Tube



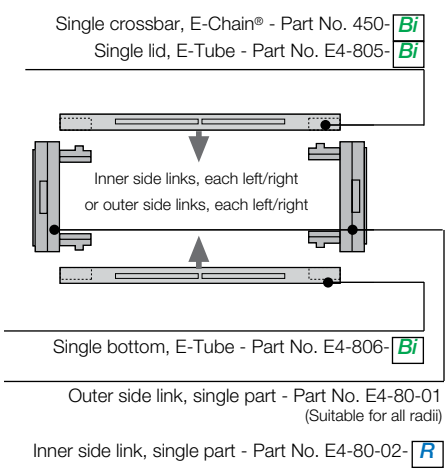

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

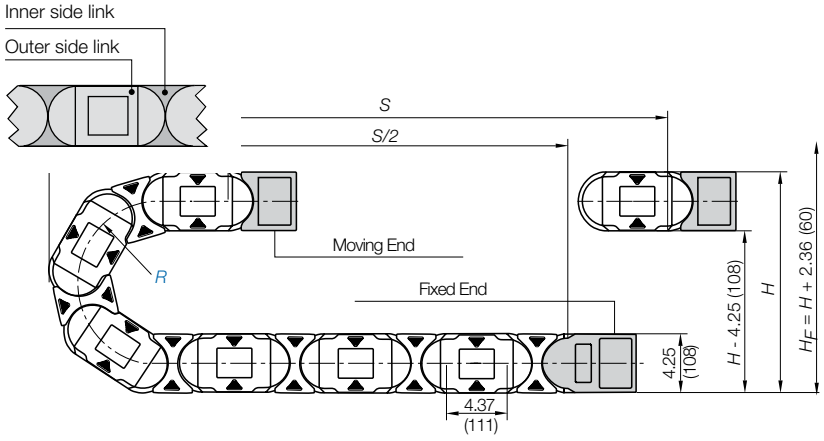
**Part Number Structure**

R4-80- | 30- | 300- | 0

- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80



Supplement part number with required radius. Example: E4-80-30-300-0
Pitch: 4.37 in. (91mm) per link links/ft (m) = 2.75 (9)

| Part Number | | | | | | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | E4-80 lbs/ft (kg/m) | H4-80 lbs/ft (kg/m) | R4-80 lbs/ft (kg/m) |
| E4-80-05- | H4-80-05- | | -0 | 1.97 (50) | 3.94 (100) | ≈ 3.59 (5.34) | ≈ 3.51 (5.22) | – |
| E4-80-06- | H4-80-06- | | -0 | 2.56 (65) | 4.53 (115) | ≈ 3.64 (5.41) | ≈ 3.53 (5.26) | – |
| E4-80-07- | H4-80-07- | | -0 | 2.95 (75) | 4.92 (125) | ≈ 3.68 (5.47) | ≈ 3.55 (5.29) | – |
| E4-80-08- | H4-80-08- | | -0 | 3.43 (87) | 5.39 (137) | ≈ 3.74 (5.56) | ≈ 3.57 (5.32) | – |
| E4-80-10- | H4-80-10- | | -0 | 3.94 (100) | 5.91 (150) | ≈ 3.77 (5.61) | ≈ 3.60 (5.36) | – |
| E4-80-11- | H4-80-11 | | -0 | 4.41 (112) | 6.42 (163) | ≈ 3.84 (5.71) | ≈ 3.63 (5.40) | – |
| E4-80-12- | H4-80-12- | | -0 | 4.92 (125) | 6.89 (175) | ≈ 3.88 (5.77) | ≈ 3.66 (5.44) | – |
| E4-80-13- | H4-80-13- | | -0 | 5.39 (137) | 7.40 (188) | ≈ 3.95 (5.88) | ≈ 3.69 (5.49) | – |
| E4-80-15- | H4-80-15- | R4-80-15- | -0 | 5.91 (150) | 7.87 (200) | ≈ 3.97 (5.91) | ≈ 3.70 (5.51) | ≈ 6.86 (4.52) |
| E4-80-16- | H4-80-16- | | -0 | 6.38 (162) | 8.39 (213) | ≈ 4.03 (6.00) | ≈ 3.73 (5.55) | – |
| E4-80-17- | H4-80-17- | | -0 | 6.89 (175) | 8.86 (225) | ≈ 2.76 (6.11) | ≈ 3.77 (5.61) | – |
| E4-80-18- | H4-80-18- | | -0 | 7.36 (187) | 9.37 (238) | ≈ 4.17 (6.20) | ≈ 3.80 (5.65) | – |
| E4-80-20- | H4-80-20- | R4-80-20- | -0 | 7.87 (200) | 9.84 (250) | ≈ 4.20 (6.25) | ≈ 3.82 (5.68) | ≈ 6.86 (7.23) |
| E4-80-21- | H4-80-21- | | -0 | 8.35 (212) | 10.35 (263) | ≈ 4.23 (6.31) | ≈ 3.84 (5.71) | – |
| E4-80-22- | H4-80-22- | | -0 | 8.86 (225) | 10.83 (275) | ≈ 4.27 (6.36) | ≈ 3.85 (5.73) | – |
| E4-80-23- | H4-80-23- | | -0 | 9.33 (237) | 11.34 (288) | ≈ 4.33 (6.45) | ≈ 3.88(5.78) | – |
| E4-80-25- | H4-80-25- | R4-80-25- | -0 | 9.84 (250) | 11.81 (300) | ≈ 4.39 (6.54) | ≈ 3.91 (5.82) | ≈ 5.42 (8.06) |
| E4-80-26- | H4-80-26- | | -0 | 10.31 (262) | 12.32 (313) | ≈ 4.45 (6.62) | ≈ 3.94 (5.86) | – |
| E4-80-27- | H4-80-27- | | -0 | 10.83 (275) | 12.80 (325) | ≈ 4.50 (6.70) | ≈ 3.96 (5.90) | – |
| E4-80-28- | H4-80-28- | | -0 | 11.30 (287) | 13.31 (338) | ≈ 4.54 (6.75) | ≈ 3.98 (5.93) | – |
| E4-80-30- | H4-80-30- | R4-80-30- | -0 | 11.81 (300) | 13.78 (350) | ≈ 4.62 (6.87) | ≈ 4.03 (5.99) | ≈ 5.87 (8.73) |
| E4-80-31- | H4-80-31- | | -0 | 12.28 (312) | 14.29 (363) | ≈ 4.64 (6.90) | ≈ 4.03 (6.00) | – |
| E4-80-32- | H4-80-32- | | -0 | 12.79 (325) | 14.76 (375) | ≈ 4.70 (6.99) | ≈ 4.07 (6.05) | – |
| E4-80-33- | H4-80-33- | | -0 | 13.27 (337) | 15.28 (388) | ≈ 4.76 (7.09) | ≈ 4.10 (6.10) | – |
| E4-80-35- | H4-80-35- | R4-80-35- | -0 | 13.78 (350) | 15.75 (400) | ≈ 4.87 (7.25) | ≈ 4.15 (6.18) | ≈ 6.36 (9.47) |
| E4-80-36- | H4-80-36- | | -0 | 14.25 (362) | 16.26 (413) | ≈ 4.82 (7.18) | ≈ 2.53 (6.14) | – |
| E4-80-37- | H4-80-37- | | -0 | 14.76 (375) | 16.73 (425) | ≈ 4.88 (7.26) | ≈ 4.15 (6.18) | – |
| E4-80-38- | H4-80-38- | | -0 | 15.24 (387) | 17.24 (438) | ≈ 4.94 (7.35) | ≈ 4.19 (6.23) | – |
| E4-80-40- | H4-80-40- | R4-80-40- | -0 | 15.75 (400) | 17.72 (450) | ≈ 5.09 (7.57) | ≈ 4.26 (6.34) | ≈ 6.86 (10.21) |
| E4-80-41- | H4-80-41- | | -0 | 16.22 (412) | 18.23 (463) | ≈ 5.05 (7.51) | ≈ 4.24 (6.31) | – |
| E4-80-42- | H4-80-42- | | -0 | 16.73 (425) | 18.70 (475) | ≈ 5.21 (7.75) | ≈ 4.32 (6.43) | – |
| E4-80-43- | H4-80-43- | | -0 | 17.20 (437) | 19.21 (488) | ≈ 5.12 (7.62) | ≈ 4.27 (6.36) | – |
| E4-80-45- | H4-80-45- | | -0 | 17.72 (450) | 19.69 (500) | ≈ 5.30 (7.89) | ≈ 4.37 (6.50) | – |
| E4-80-46- | H4-80-46- | R4-80-46- | -0 | 18.19 (462) | 20.20 (513) | ≈ 5.27 (7.85) | ≈ 4.35 (6.48) | ≈ 7.36 (10.96) |
| E4-80-47- | H4-80-47- | | -0 | 18.70 (475) | 20.67 (525) | ≈ 5.29 (7.88) | ≈ 4.36 (6.49) | – |
| E4-80-48- | H4-80-48- | | -0 | 19.17 (487) | 21.19 (538) | ≈ 5.44 (8.09) | ≈ (4.43 6.60) | – |
| E4-80-50- | H4-80-50- | | -0 | 19.69 (500) | 21.65 (550) | ≈ 5.44 (8.09) | ≈ 4.43 (6.60) | – |
| E4-80-51- | H4-80-51- | | -0 | 20.16 (512) | 22.16 (563) | ≈ 5.49 (8.17) | ≈ 4.46 (6.63) | – |
| E4-80-52- | H4-80-52- | | -0 | 20.67 (525) | 22.64 (575) | ≈ 5.54 (8.24) | ≈ 4.48 (6.67) | – |
| E4-80-53- | H4-80-53- | | -0 | 21.14 (537) | 23.15 (588) | ≈ 5.58 (8.31) | ≈ 4.51 (6.71) | – |
| E4-80-55- | H4-80-55- | | -0 | 21.65 (550) | 23.62 (600) | ≈ 5.82 (8.66) | ≈ 4.62 (6.88) | – |
| E4-80-60- | H4-80-60- | | -0 | 23.62 (600) | 25.59 (650) | ≈ 5.94 (8.84) | ≈ 4.68 (6.97) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: E4-80-30-300-0

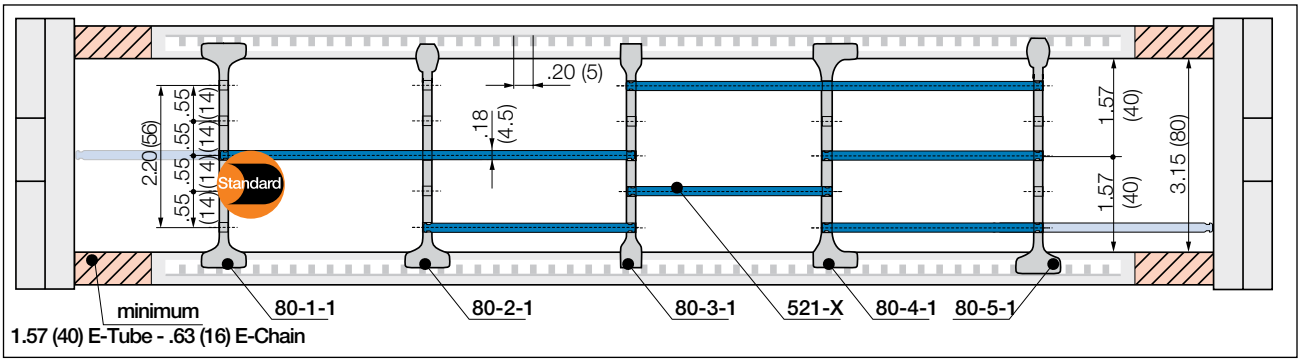
| | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 550 | 600 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 39.37 (1000) |
| $H^{-0}_{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 47.56 (1208) | 51.50 (1308) | 82.99 (2108) |
| *D* | 14.61 (371) | 16.57 (421) | 18.54 (471) | 20.51 (521) | 22.48 (571) | 24.45 (621) | 28.38 (721) | 30.35 (771) | 32.32 (821) | 48.07 (1221) |
| *K* | 27.36 (695) | 33.66 (855) | 39.76 (1010) | 45.87 (1165) | 52.17 (1325) | 58.27 (1480) | 70.67 (1795) | 76.77 (1950) | 83.07 (2110) | 132.48 (3365) |

0 = Standard color black. For other colors see Chapter 1
For wider chains see page 6.68. For large diameter hoses see page 6.68

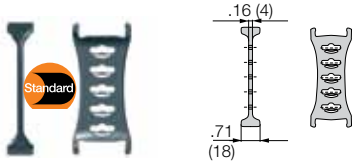
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



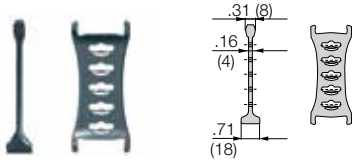

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

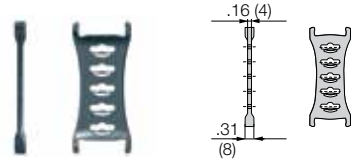
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

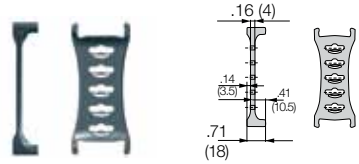
- **Separator 80-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

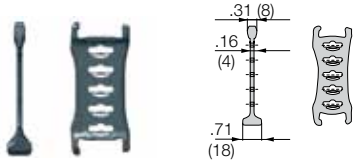
- **Separator 80-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-4** |
| Assembled | **Part No. 80-4-1** |

- **Separator 80-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

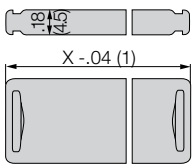



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation



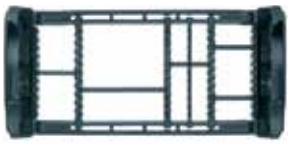

**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.723 (450) | **520-450** | **521-450** |

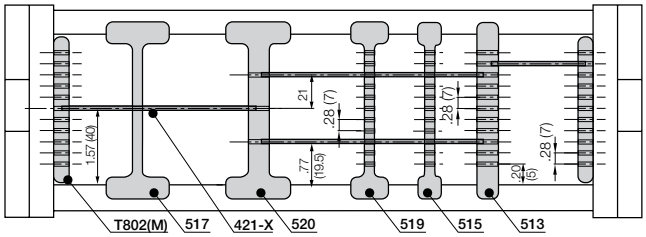
# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Interior Separation - Previous Generation

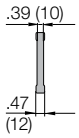


## Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

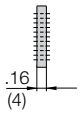





**Side plate (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. T803** |
| Assembled | **Part No. T803M** |

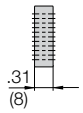
- **Split separator T803**
  This component is used to form the basic pattern of a shelf system.




**Side plate (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. T802** |
| Assembled | **Part No. T802M** |

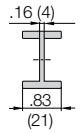
- **Side plates 802**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

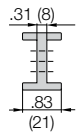
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.




**Locking vertical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

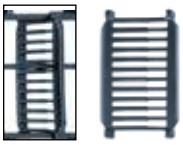
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

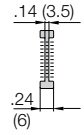



**Locking vertical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.

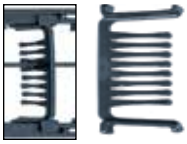


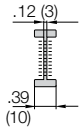



**Slotted separators, closed (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.






**Slotted separators, open (for E-Chains®)**

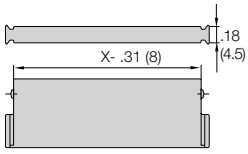
| | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|
| .71 (18) | .39 (10) | **420-18** | **421-18** | 2.95 (75) | 2.64 (67) | **420-75** | **421-75** |
| .91 (23) | .59 (15) | **420-23** | **421-23** | 3.46 (88) | 3.15 (80) | **420-88** | **421-88** |
| .98 (25) | .67 (17) | **420-25** | **421-25** | 3.94 (100) | 3.62 (92) | **420-100** | **421-100** |
| 1.10 (28) | .79 (20) | **420-28** | **421-28** | 4.92 (125) | 4.61(117) | **420-125** | **421-125** |
| 1.30 (33) | .98 (25) | **420-33** | **421-33** | 5.91 (150) | 5.59(142) | **420-150** | **421-150** |
| 1.69 (43) | 1.38 (35) | **420-43** | **421-43** | 6.89 (175) | 6.57(167) | **420-175** | **421-175** |
| 1.97 (50) | 1.65 (42) | **420-50** | **421-50** | 7.36 (187) | 7.05(179) | **420-187** | **421-187** |
| 2.44 (62) | 2.13 (54) | **420-62** | **421-62** | 7.87 (200) | 7.56(192) | **420-200** | **421-200** |



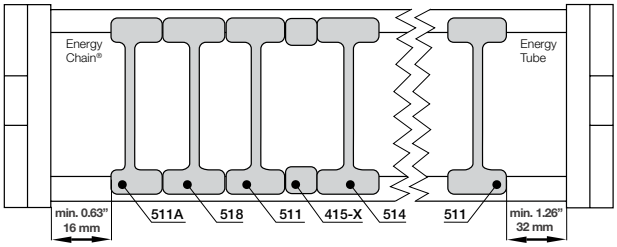
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

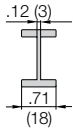
# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Interior separation - Previous Generation

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

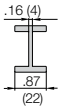





**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

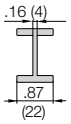
- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.




**Locking separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

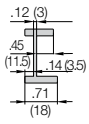
- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.




**Locking separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508 for E-Tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.




**Asymmetrical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A for E-Chains®**
  This separator is NOT for E-Tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacer (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

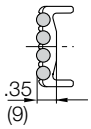
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) | Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) | **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -15** | **415 -15** | .59" | (15) | **405 -40** | **415 -40** | 1.57" | (40) |
| **405 -20** | **415 -20** | 79" | (20) | | | | |

**Rollclip** - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

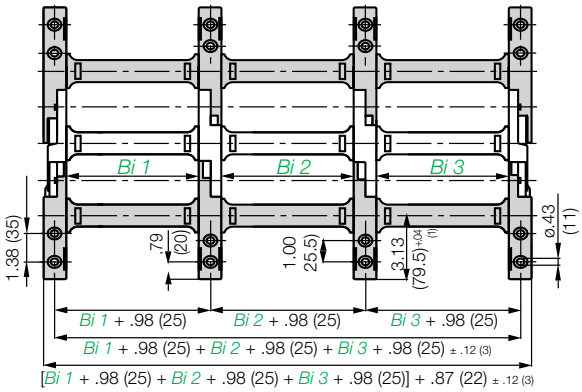
**E4-80-10/20/10-200-0**

**E4-80-*Bi1*/*Bi2*/*Bi3*-R-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

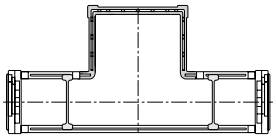
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



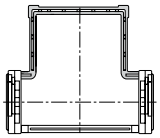
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

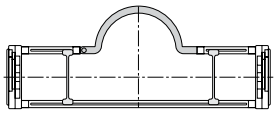
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



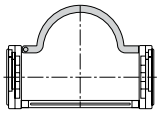
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.87 (200) | Square | Yes | No |
| **450-35-D250** | 8.66 (220) | Square | Yes | No |
| **450-40-D300** | 10.63 (270) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.87 (200) | Square | No | Yes |
| **450-30-HD250** | 8.66 (220) | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

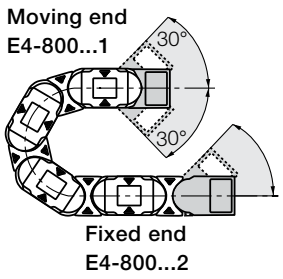
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Mounting Brackets KMA

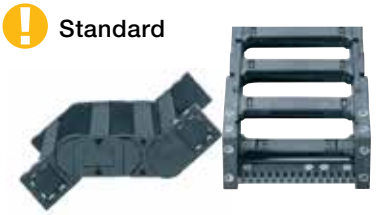
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

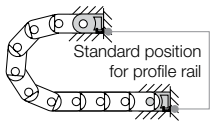
## Option 1: pivoting

- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant



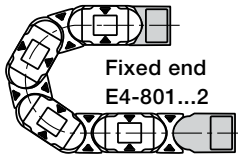

Standard

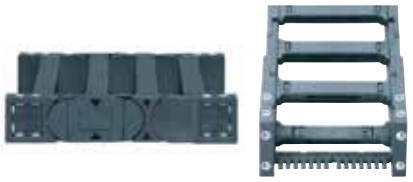


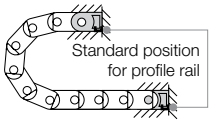



## Option 2: locking

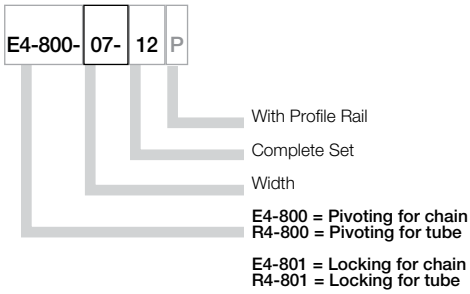
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

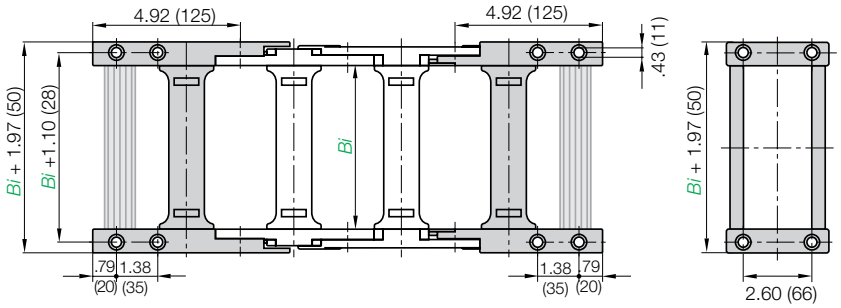





### Part Number Structure




**Due to the design of the E4-80 series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain. For locking brackets change part number to 801**

**Part No. Full Set** (pivoting)
Series E4-80 or H4-80
E4-800-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-80 or H4-80
E4-800-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R4-80
R4-800-Width-12

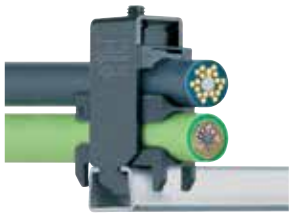
**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-80
R4-800-Width-12P

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -05* | E4-800 | E4-801 | -05-12 | P | 1.97 (50) |
| -06 | E4-800 | E4-801 | -06-12 | P | 2.56 (65) |
| -07 | E4-800 | E4-801 | -07-12 | P | 2.95 (75) |
| -08 | E4-800 | E4-801 | -08-12 | P | 3.43 (87) |
| -10 | E4-800 | E4-801 | -10-12 | P | 3.94 (100) |
| -11 | E4-800 | E4-801 | -11-12 | P | 4.41 (112) |
| -12 | E4-800 | E4-801 | -12-12 | P | 4.92 (125) |
| -13 | E4-800 | E4-801 | -13-12 | P | 5.39 (137) |
| -15 | E4-800/R4-800 | E4-801/R4-801 | -15-12 | P | 5.91 (150) |
| -16 | E4-800 | E4-801 | -16-12 | P | 6.38 (162) |
| -17 | E4-800 | E4-801 | -17-12 | P | 6.89 (175) |
| -18 | E4-800 | E4-801 | -18-12 | P | 7.36 (187) |
| -20 | E4-800/R4-800 | E4-801/R4-801 | -20-12 | P | 7.87 (200) |
| -21 | E4-800 | E4-801 | -21-12 | P | 8.35 (212) |
| -22 | E4-800 | E4-801 | -22-12 | P | 8.86 (225) |
| -23 | E4-800 | E4-801 | -23-12 | P | 9.33 (237) |
| -25 | E4-800/R4-800 | E4-801/R4-801 | -25-12 | P | 9.84 (250) |
| -26 | E4-800 | E4-801 | -26-12 | P | 10.31 (262) |
| -27 | E4-800 | E4-801 | -27-12 | P | 10.83 (275) |
| -28 | E4-800 | E4-801 | -28-12 | P | 11.30 (287) |
| -30 | E4-800/R4-800 | E4-801/R4-801 | -30-12 | P | 11.81 (300) |

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -31 | E4-800 | E4-801 | -31-12 | P | 12.28 (312) |
| -32 | E4-800 | E4-801 | -32-12 | P | 12.79 (325) |
| -33 | E4-800 | E4-801 | -33-12 | P | 13.27 (337) |
| -35 | E4-800/R4-800 | E4-801/R4-801 | -35-12 | P | 13.78 (350) |
| -36 | E4-800 | E4-801 | -36-12 | P | 14.25 (362) |
| -37 | E4-800 | E4-801 | -37-12 | P | 14.76 (375) |
| -38 | E4-800 | E4-801 | -38-12 | P | 15.24 (387) |
| -40 | E4-800/R4-800 | E4-801/R4-801 | -40-12 | P | 15.75 (400) |
| -41 | E4-800 | E4-801 | -41-12 | P | 16.22 (412) |
| -42 | E4-800 | E4-801 | -42-12 | P | 16.73 (425) |
| -43 | E4-800 | E4-801 | -43-12 | P | 17.20 (437) |
| -45 | E4-800 | E4-801 | -45-12 | P | 17.72 (450) |
| -46 | E4-800/R4-800 | E4-801/R4-801 | -46-12 | P | 18.19 (462) |
| -47 | E4-800 | E4-801 | -47-12 | P | 18.70 (475) |
| -48 | E4-800 | E4-801 | -48-12 | P | 19.17 (487) |
| -50 | E4-800 | E4-801 | -50-12 | P | 19.69 (500) |
| -51 | E4-800 | E4-801 | -51-12 | P | 20.16 (512) |
| -52 | E4-800 | E4-801 | -52-12 | P | 20.67 (525) |
| -53 | E4-800 | E4-801 | -53-12 | P | 21.14 (537) |
| -55 | E4-800 | E4-801 | -55-12 | P | 21.65 (550) |
| -60 | E4-800 | E4-801 | -60-12 | P | 23.62 (600) |

# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Strain Relief

## Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

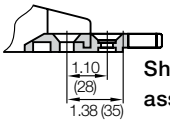
## Chainfix Clip

### Modular snap-on strain relief device

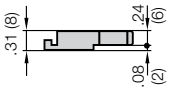
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

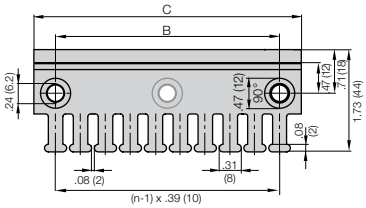



Single tiewrap plate

### Option 1: Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

### Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

### Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-80/H4-80/R4-80
# Guide Trough

Width of Crossbar
E4-80-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 4.13 (105) | **96-50-225** |
| **-06** | 4.72 (120) | **96-50-250** |
| **-07** | 5.12 (130) | **96-50-250** |
| **-08** | 5.59 (142) | **96-50-275** |
| **-10** | 6.10 (155) | **96-50-275** |
| **-11** | 6.61 (168) | **96-50-300** |
| **-12** | 7.09 (180) | **96-50-300** |
| **-13** | 7.60 (193) | **96-50-325** |
| **-15** | 8.07 (205) | **96-50-325** |
| **-16** | 8.58 (218) | **96-50-350** |
| **-17** | 9.06 (230) | **96-50-350** |
| **-18** | 9.57 (243) | **96-50-375** |
| **-20** | 10.04 (255) | **96-50-375** |
| **-21** | 10.55 (268) | **96-50-400** |
| **-22** | 11.02 (280) | **96-50-400** |
| **-23** | 11.54 (293) | **96-50-425** |
| **-25** | 12.01 (305) | **96-50-425** |
| **-26** | 12.52 (318) | **96-50-450** |
| **-27** | 12.99 (330) | **96-50-450** |
| **-28** | 13.50 (343) | **96-50-475** |
| **-30** | 13.98 (355) | **96-50-475** |
| **-31** | 14.49 (368) | **96-50-500** |
| **-32** | 14.96 (380) | **96-50-500** |
| **-33** | 15.47 (393) | **96-50-525** |
| **-35** | 15.94 (405) | **96-50-525** |
| **-36** | 16.46 (418) | **96-50-550** |
| **-37** | 16.93 (430) | **96-50-550** |
| **-38** | 17.44 (443) | **96-50-575** |
| **-40** | 17.91 (455) | **96-50-575** |
| **-41** | 18.43 (468) | **96-50-600** |
| **-42** | 18.90 (480) | **96-50-600** |
| **-43** | 19.41 (493) | **96-50-625** |
| **-45** | 19.88 (505) | **96-50-625** |
| **-46** | 20.39 (518) | **96-50-650** |
| **-47** | 20.87 (530) | **96-50-650** |
| **-48** | 21.38 (543) | **96-50-675** |
| **-50** | 21.85 (555) | **96-50-675** |
| **-51** | 22.36 (568) | **96-50-700** |
| **-52** | 22.83 (580) | **96-50-700** |
| **-53** | 23.35 (593) | **96-50-725** |
| **-55** | 23.82 (605) | **96-50-725** |
| **-60** | 25.79 (655) | **96-50-775** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 99-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 96-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

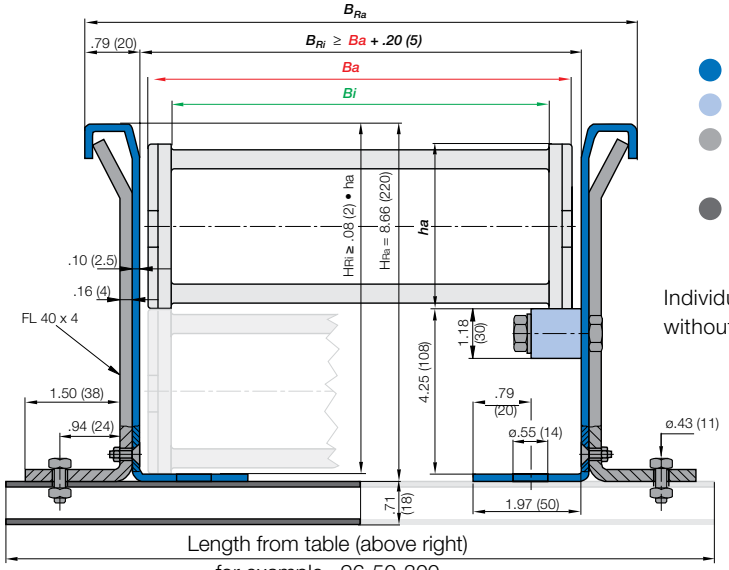
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 99-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

**For further technical information on guide troughs**
➤ **Chapter 9**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112

4.41 4.25

## Price Index

Series E4-112 Series H4-112

Series R4-112

## Special Options Available

Low noise version available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If a robust E-Chain/Energy is required
- If inner widths up to 23.62" (600 mm) are required
- For unsupported lengths up to 21.3 ft. (6.5 m) and fill weights up to 57.12 lbs/ft. (85 kg/m)
- For long travels

- When an E-Chain is needed for rough applications with greater inner height
  ➤ **Series 800**
- When a lighter E-Chain® is needed
  ➤ **Series 1640**

## Features & Benefits

1. Steel mounting brackets
2. Hinged, snap-open removable lids along the outer radius
3. Noise dampening pads, optional = -10dB(A)
4. Gliding surfaces, long travels
5. Chip protection with E-Tube
6. Undercut for more stability
7. Notch crossbar with backside scaling
8. Straight run due to the inner/outer link design
9. Low noise operation due to integrated "brake"

**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-112-30-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E4-80-30-300-0** | **E-Chain®** |
| With 2 separators **6401** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-11210-12** | **Mounting Bracket** |

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Installation Dimensions



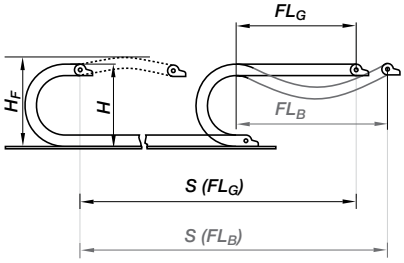


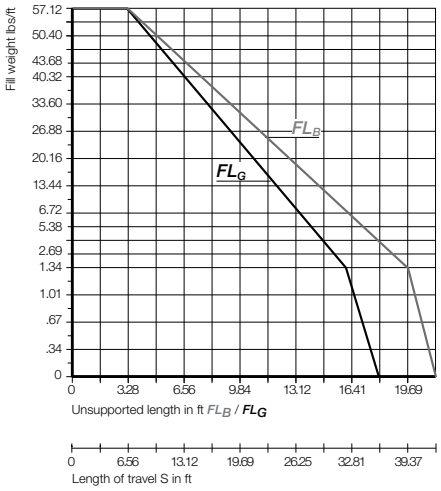
## Short travel, unsupported length

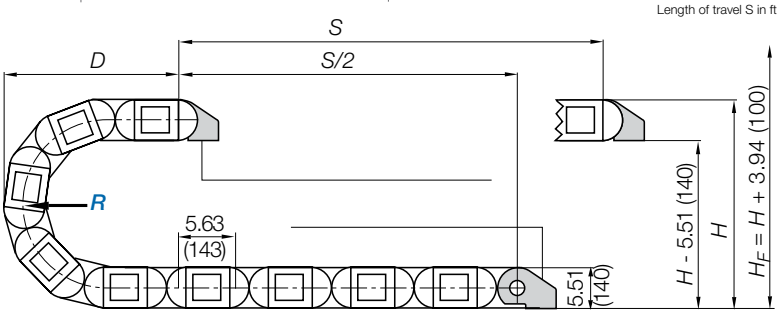
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

**Pitch per link: =** 5.63"(143 mm)
**Links per ft (m): =** 2.13 (7)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

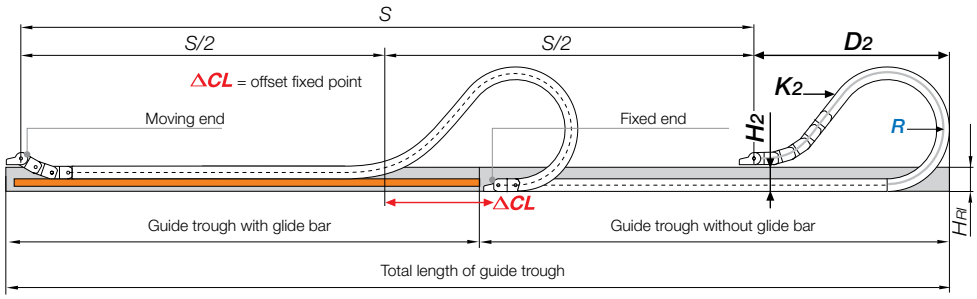
| R | 7.87 (200*) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 9.84 (450) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| D | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| K | 36.02 (915) | 42.32 (1075) | 48.43 (1230) | 54.72 (1390) | 60.83 (1545) | 66.93 (1700) | 75.86 (1860) | 79.33 (2015) | 85.63 (2175) | 104.13 (2645) | 135.04 (3430) |

* Radius not available for E-Tubes

## For long travels with lowered mounting height

**Long travel lengths from 45.9 ft.(14m) to max. 1,476 ft. (450m)**

**For center mount applications:**
**Chain length: =** $\frac{S}{2} + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 7.87 (200**) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 9.84 (450) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H2 | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | - | - |
| D2 | 35.43 (900) | 39.37 (1000) | 43.31 (1100) | 49.21 (1250) | 57.09 (1450) | 62.99 (1600) | 66.93 (1700) | 74.80 (1900) | 80.71 (2050) | - | - |
| K2 | 61.93 (1573) | 67.56 (1716) | 73.19 (1859) | 90.08 (2288) | 101.34 (2574) | 112.60 (2860) | 123.86 (3146) | 135.12 (3432) | 152.01 (3861) | - | - |
| ΔCL | 17.72 (450) | 19.68 (500) | 21.65 (550) | 25.59 (650) | 31.50 (800) | 35.43 (900) | 37.40 (950) | 43.31 (1100) | 47.24 (1200) | - | - |

**In case of travels between 13 and 32.8 ft (4 and 10 m) we recommend a longer unsupported length.**
****200 radius is not available for the E-Tubes**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112

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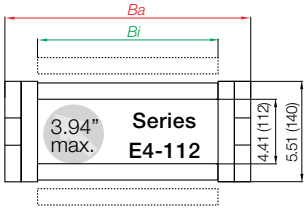
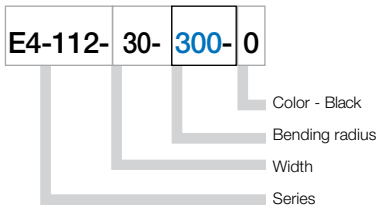
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-112 - E-Chain® with crossbars every link

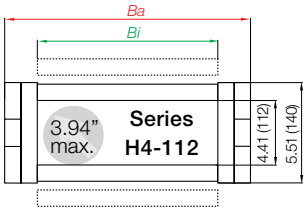


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

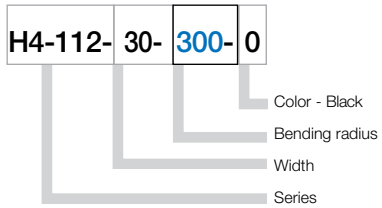



## Series E4-112 - E-Chain® with crossbars every 2nd link

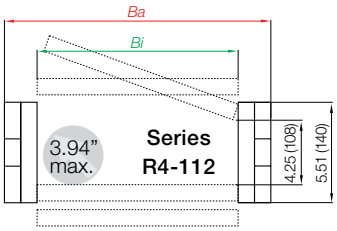


- Crossbars every other link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

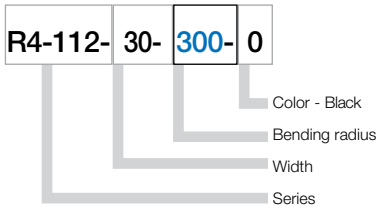



## Series R4-112 - fully enclosed E-Tube

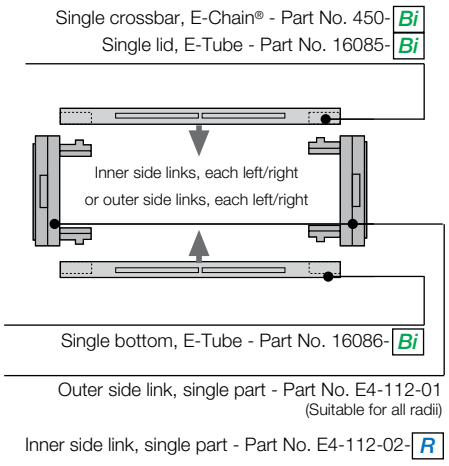


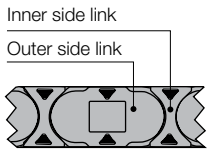
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

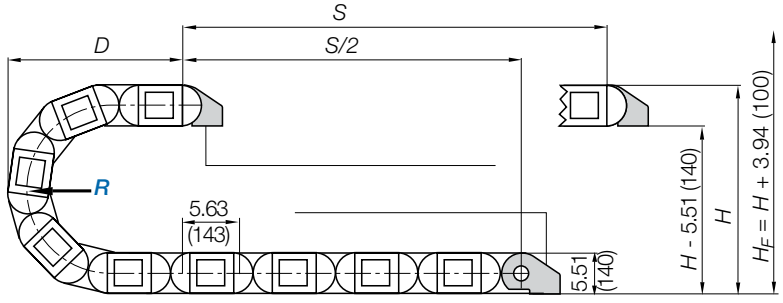
**Part Number Structure**




## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112

Supplement part number with required radius. Example: E4-112-30-300-0
Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)



| Part Number | | | | | | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | Bi in. (mm) | Ba in. (mm) | E4-80 lbs/ft (kg/m) | H4-80 lbs/ft (kg/m) | R4-80 lbs/ft (kg/m) |
| E4-112-05- | H4-112-05- | | -0 | 1.97 (50) | 4.02 (102) | ≈ 4.63 (6.89) | ≈ 4.62 (6.88) | – |
| E4-112-06- | H4-112-06- | | -0 | 2.56 (65) | 4.61 (117) | ≈ 4.67 (6.95) | ≈ 4.64 (6.91) | – |
| E4-112-07- | H4-112-07- | | -0 | 2.95 (75) | 5.00 (127) | ≈ 4.70 (6.99) | ≈ 4.66 (6.93) | – |
| E4-112-08- | H4-112-08- | | -0 | 3.43 (87) | 5.47 (139) | ≈ 4.74 (7.05) | ≈ 4.68 (6.96) | – |
| E4-112-10- | H4-112-10- | | -0 | 3.94 (100) | 5.98 (152) | ≈ 4.77 (7.10) | ≈ 4.70 (6.99) | – |
| E4-112-11- | H4-112-11- | | -0 | 4.41 (112) | 6.46 (164) | ≈ 4.82 (7.18) | ≈ 4.72 (7.03) | – |
| E4-112-12- | H4-112-12- | | -0 | 4.92 (125) | 6.97 (177) | ≈ 4.86 (7.23) | ≈ 4.74 (7.05) | – |
| E4-112-13- | H4-112-13- | | -0 | 5.39 (137) | 7.44 (189) | ≈ 4.91 (7.31) | ≈ 4.76 (7.09) | – |
| E4-112-15- | H4-112-15- | | -0 | 5.91 (150) | 7.95 (202) | ≈ 4.93 (7.34) | ≈ 4.78 (7.11) | – |
| E4-112-16- | H4-112-16- | | -0 | 6.38 (162) | 8.43 (214) | ≈ 4.98 (7.41) | ≈ 4.80 (7.14) | – |
| E4-112-17- | H4-112-17- | | -0 | 6.89 (175) | 8.94 (227) | ≈ 5.03 (7.49) | ≈ 4.82 (7.18) | – |
| E4-112-18- | H4-112-18- | | -0 | 7.36 (187) | 9.41 (239) | ≈ 5.08 (7.56) | ≈ 4.85 (7.22) | – |
| E4-112-20- | H4-112-20- | R4-112-20- | -0 | 7.87 (200) | 9.92 (252) | ≈ 5.10 (7.60) | ≈ 4.87 (7.24) | ≈ 6.22 (9.26) |
| E4-112-21- | H4-112-21- | | -0 | 8.35 (212) | 10.39 (264) | ≈ 5.13 (7.64) | ≈ 4.88 (7.26) | – |
| E4-112-22- | H4-112-22- | | -0 | 8.86 (225) | 10.91 (277) | ≈ 5.17 (7.69) | ≈ 4.89 (7.28) | – |
| E4-112-23- | H4-112-23- | | -0 | 9.33 (237) | 11.38 (289) | ≈ 5.21 (7.76) | ≈ 4.92 (7.32) | – |
| E4-112-25- | H4-112-25- | R4-112-25- | -0 | 9.84 (250) | 11.89 (302) | ≈ 5.26 (7.83) | ≈ 4.94 (7.35) | ≈ 6.66 (9.91) |
| E4-112-26- | H4-112-26- | | -0 | 10.31 (262) | 12.36 (314) | ≈ 5.30 (7.89) | ≈ 4.96 (7.38) | – |
| E4-112-27- | H4-112-27- | | -0 | 10.83 (275) | 12.87 (327) | ≈ 5.34 (7.95) | ≈ 4.98 (7.41) | – |
| E4-112-28- | H4-112-28- | | -0 | 11.30 (287) | 13.35 (339) | ≈ 5.37 (7.99) | ≈ 4.99 (7.43) | – |
| E4-112-30- | H4-112-30- | R4-112-30- | -0 | 11.81 (300) | 13.86 (352) | ≈ 5.44 (8.09) | ≈ 5.03 (7.48) | ≈ 7.08 (10.53) |
| E4-112-31- | H4-112-31- | | -0 | 12.28 (312) | 14.33 (364) | ≈ 5.45 (8.11) | ≈ 5.03 (7.49) | – |
| E4-112-32- | H4-112-32- | | -0 | 12.79 (325) | 14.84 (377) | ≈ 5.50 (8.18) | ≈ 5.05 (7.52) | – |
| E4-112-33- | H4-112-33- | | -0 | 13.27 (337) | 15.31 (389) | ≈ 5.54 (8.25) | ≈ 5.08 (7.56) | – |
| E4-112-35- | H4-112-35- | R4-112-35- | -0 | 13.78 (350) | 15.83 (402) | ≈ 5.63 (8.38) | ≈ 5.11 (7.60) | ≈ 7.51 (11.18) |
| E4-112-36- | H4-112-36- | | -0 | 14.25 (362) | 16.30 (414) | ≈ 5.59 (8.32) | ≈ 5.13 (7.63) | – |
| E4-112-37- | H4-112-37- | | -0 | 14.76 (375) | 16.81 (427) | ≈ 5.63 (8.38) | ≈ 5.13 (7.63) | – |
| E4-112-38- | H4-112-38- | | -0 | 15.24 (387) | 17.28 (439) | ≈ 5.68 (8.46) | ≈ 5.15 (7.67) | – |
| E4-112-40- | H4-112-40- | R4-112-40- | -0 | 15.75 (400) | 17.80 (452) | ≈ 5.80 (8.63) | ≈ 5.19 (7.73) | ≈ 7.94 (11.82) |
| E4-112-41- | H4-112-41- | | -0 | 16.22 (412) | 18.27 (464) | ≈ 5.77 (8.58) | ≈ 5.21 (7.75) | – |
| E4-112-42- | H4-112-42- | | -0 | 16.73 (425) | 18.78 (477) | ≈ 5.89 (8.77) | ≈ 5.22 (7.77) | – |
| E4-112-43- | H4-112-43- | | -0 | 17.20 (437) | 19.25 (489) | ≈ 5.83 (8.67) | ≈ 5.25 (7.82) | – |
| E4-112-45- | H4-112-45- | | -0 | 17.72 (450) | 19.76 (502) | ≈ 5.97 (8.88) | ≈ 5.28 (7.86) | – |
| E4-112-46- | H4-112-46- | | -0 | 18.19 (462) | 20.24 (514) | ≈ 5.95 (8.85) | ≈ 5.29 (7.87) | - |
| E4-112-47- | H4-112-47- | | -0 | 18.70 (475) | 20.75 (527) | ≈ 5.96 (8.87) | ≈ 5.30 (7.88) | – |
| E4-112-48- | H4-112-48- | | -0 | 19.17 (487) | 21.22 (539) | ≈ 6.07 (9.03) | ≈ 5.34 (7.95) | – |
| E4-112-50- | H4-112-50- | | -0 | 19.69 (500) | 21.73 (552) | ≈ 6.07 (9.03) | ≈ 5.34 (7.95) | – |
| E4-112-51- | H4-112-51- | | -0 | 20.16 (512) | 22.20 (564) | ≈ 6.11 (9.09) | ≈ 5.36 (7.98) | – |
| E4-112-52- | H4-112-52- | | -0 | 20.67 (525) | 22.72 (577) | ≈ 6.15 (9.15) | ≈ 5.38 (8.01) | – |
| E4-112-53- | H4-112-53- | | -0 | 21.14 (537) | 23.19 (589) | ≈ 6.18 (9.20) | ≈ 5.40 (8.04) | – |
| E4-112-55- | H4-112-55- | | -0 | 21.65 (550) | 23.70 (602) | ≈ 6.36 (9.47) | ≈ 5.49 (8.17) | – |
| E4-112-60- | H4-112-60- | | -0 | 23.62 (600) | 25.67 (652) | ≈ 6.46 (9.62) | ≈ 5.54 (8.25) | – |

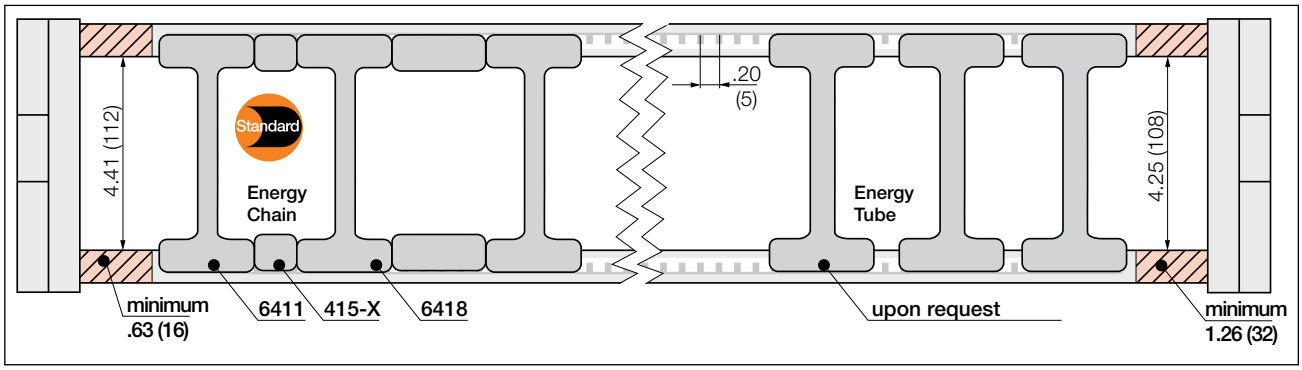
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-112-30-300-0

| | 200** | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 9.84 (450) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
| *H* | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| *D* | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| *K* | 36.02 (915) | 42.32 (1075) | 48.43 (1230) | 54.72 (1390) | 60.83 (1545) | 66.93 (1700) | 75.86 (1860) | 79.33 (2015) | 85.63 (2175) | 104.13 (2645) | 135.04 (3430) |

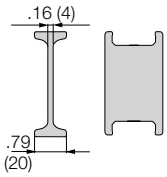
0=Standard color black. For other colors see Chapter 1
**200 radius is not available for the E-Tubes
For wider chains see page 6.79. For large diameter hoses see page 6.79

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Interior Separation



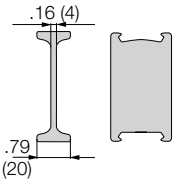

Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 6401** |
| Assembled | **Part No. 6411** |

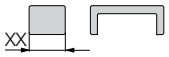
- **Standard separator 6401 for E-Chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for E-Tubes 1608 upon request)




**Separator, locking (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 6408** |
| Assembled | **Part No. 6418** |

- **Separator 6408 for E-Chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per E-Chain® link for better mounting.




**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

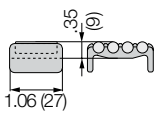
XX = width of the spacer

- **NOTE ON SPACERS for E-Chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | Width in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | .79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

## Additional elements - interior separation



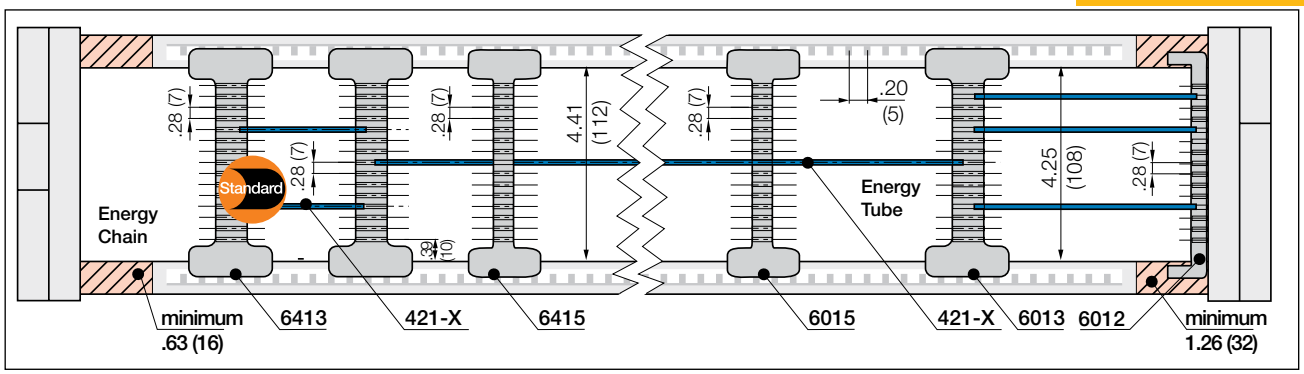

**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

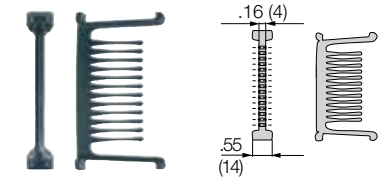
**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Interior Separation



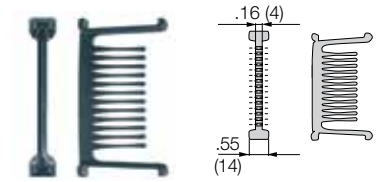

Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 6405** |
| Assembled | **Part No. 6415** |

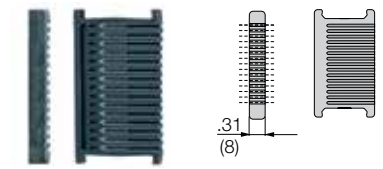
- **Open, slotted separator 6405**
  **For E-Chains® (unilateral open)**
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 6005** |
| Assembled | **Part No. 6015** |

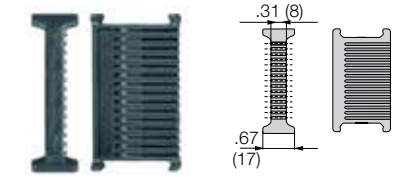
- **Open, slotted separator 6005**
  **For E-Tubes (unilateral open)**
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 6403** |
| Assembled | **Part No. 6413** |

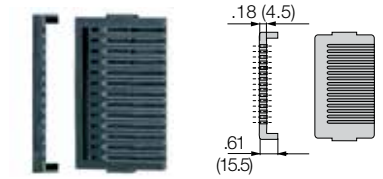
- **Vertical separator 6403**
  **For E-Chains®**
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 6003** |
| Assembled | **Part No. 6013** |

- **Locking vertical separator 6003**
  **For E-Tubes**
  This component is used to form the basic pattern of a shelf system.

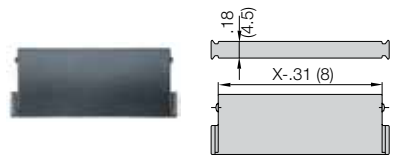



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 6002** |
| Assembled | **Part No. 6012** |

- **Side plate 6002**
  **For E-Chains® / Tubes**
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 420-X** |
| Assembled | **Part No. 421-X** |

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **420-18** | **421-18** |
| .91 | (23) | **420-23** | **421-23** |
| .98 | (25) | **420-25** | **421-25** |
| 1.10 | (28) | **420-28** | **421-28** |
| 1.30 | (33) | **420-33** | **421-33** |
| 1.69 | (43 | **420-43** | **421-43** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **420-50** | **421-50** |
| 2.44 | (62) | **420-62** | **421-62** |
| 2.95 | (75) | **420-75** | **421-75** |
| 3.46 | (88) | **420-88** | **421-88** |
| 3.94 | (100) | **420-100** | **421-100** |
| 4.92 | (125) | **420-125** | **421-125** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 5.91 | (150) | **420-150** | **421-150** |
| 6.89 | (175) | **420-175** | **421-175** |
| 7.36 | (187) | **420-187** | **421-187** |
| 7.87 | (200) | **420-200** | **421-200** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®

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QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Special Accessories

Part number example for E-Chain®

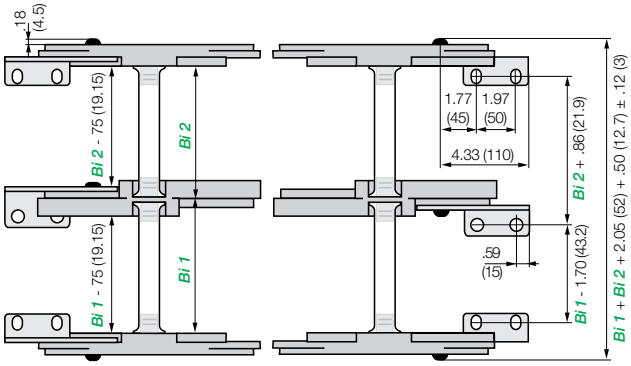
**E4-112-10/20/10-[200]-0**

**E4-112-*Bi1*/*Bi2*/*Bi3*-[*R*]-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

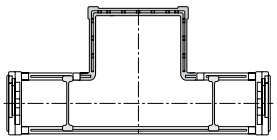
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with steel mounting brackets.



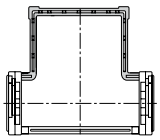

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

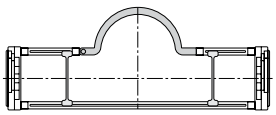
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**



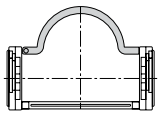
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.53 (115) | Round | No | Yes |
| **450-17-RD115** | 4.53 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.87 (200) | Square | Yes | No |
| **450-35-D250** | 8.66 (220) | Square | Yes | No |
| **450-40-D300** | 10.63 (270) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.87 (200) | Square | No | Yes |
| **450-30-HD250** | 8.66 (220) | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

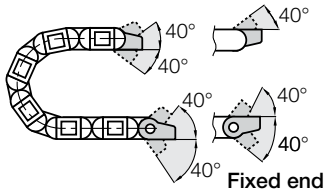
| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Mounting Brackets - Steel

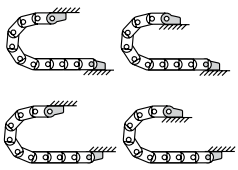
## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive

Moving end
11210...3



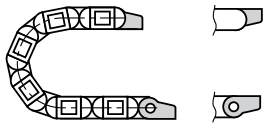

Fixed end
11210...4



## Option 2: Locking

- For pivoting connections
- One part for all chain widths
- Electrically conductive

Moving end
11210...1



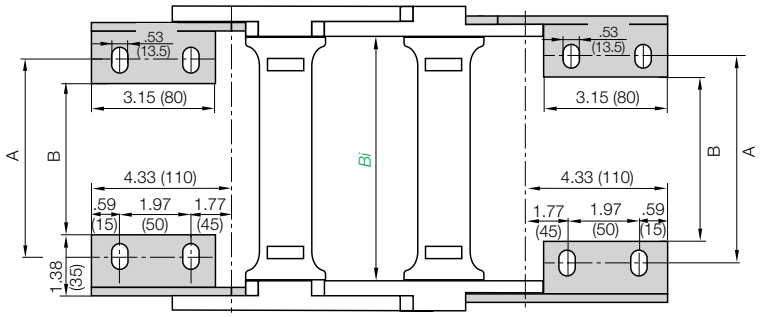
Fixed end
11210...2

Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series E4-112/H4-112/R4-112
**Pivoting E4-11210-☐-34VS/Locking E4-11210-☐-12VS**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series E4-112/H4-112/R4-112
**Pivoting E4-11210-3VS / Locking E4-11210-1VS**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series E4-112/H4-112/R4-112
**Pivoting E4-11210-4VS / Locking E4-11210-2VS**




**Due to the design of the E4-1 series E-Chains®, please note the following when ordering brackets**

**For Pivoting Mounting Brackets:**
**Even number of links =** E4-11210-2-34VS
**Odd number of links =** E4-11212-1-34VS

**For Locking Mounting Brackets:**
**Even number of links =** E4-11210-2-12VS
**Odd number of links =** E4-11212-1-12VS

## Bracket Mounting dimensions

| Width of Chain *Bi* | Part Number | Mounting Brackets Full Set Locking | Mounting Brackets Full Set Pivoting | Dim. A *Bi - 30* in. (mm) | Dim. B *Bi - 49* in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50) | E4-11210-☐ | -12VS | -34VS | .79 (20) | .04 (1) |
| 2.56 (65) | E4-11210-☐ | -12VS | -34VS | 1.38 (35) | .63 (16) |
| 2.95 (75) | E4-11210-☐ | -12VS | -34VS | 1.77 (45) | 1.02 (26) |
| 3.43 (87) | E4-11210-☐ | -12VS | -34VS | 2.24 (57) | 1.50 (38) |
| 3.94 (100) | E4-11210-☐ | -12VS | -34VS | 2.76 (70) | 2.01 (51) |
| 4.41 (112) | E4-11210-☐ | -12VS | -34VS | 3.23 (82) | 2.48 (63) |
| 4.92 (125) | E4-11210-☐ | -12VS | -34VS | 3.74 (95) | 2.99 (76) |
| 5.39 (137) | E4-11210-☐ | -12VS | -34VS | 4.21 (107) | 3.46 (88) |
| 5.91 (150) | E4-11210-☐ | -12VS | -34VS | 4.72 (120) | 3.98 (101) |
| 6.38 (162) | E4-11210-☐ | -12VS | -34VS | 5.20 (132) | 4.45 (113) |
| 6.89 (175) | E4-11210-☐ | -12VS | -34VS | 5.71 (145) | 4.96 (126) |
| 7.36 (187) | E4-11210-☐ | -12VS | -34VS | 6.18 (157) | 5.43 (138) |
| 7.87 (200) | E4-11210-☐ | -12VS | -34VS | 6.69 (170) | 5.94 (151) |
| 8.35 (212) | E4-11210-☐ | -12VS | -34VS | 7.16 (182) | 6.42 (163) |
| 8.86 (225) | E4-11210-☐ | -12VS | -34VS | 7.68 (195) | 6.93 (176) |
| 9.33 (237) | E4-11210-☐ | -12VS | -34VS | 8.15 (207) | 7.40 (188) |
| 9.84 (250) | E4-11210-☐ | -12VS | -34VS | 8.66 (220) | 7.91 (201) |
| 10.31 (262) | E4-11210-☐ | -12VS | -34VS | 9.13 (232) | 8.39 (213) |
| 10.83 (275) | E4-11210-☐ | -12VS | -34VS | 9.65 (245) | 8.90 (226) |
| 11.30 (287) | E4-11210-☐ | -12VS | -34VS | 10.12 (257) | 9.37 (238) |
| 11.81 (300) | E4-11210-☐ | -12VS | -34VS | 10.63 (270) | 9.88 (251) |
| 12.28 (312) | E4-11210-☐ | -12VS | -34VS | 11.10 (282) | 10.35 (263) |
| 12.79 (325) | E4-11210-☐ | -12VS | -34VS | 11.61 (295) | 10.87 (276) |
| 13.27 (337) | E4-11210-☐ | -12VS | -34VS | 12.09 (307) | 11.34 (288) |
| 13.78 (350) | E4-11210-☐ | -12VS | -34VS | 12.60 (320) | 11.85 (301) |
| 14.25 (362) | E4-11210-☐ | -12VS | -34VS | 13.07 (332) | 12.32 (313) |
| 14.76 (375) | E4-11210-☐ | -12VS | -34VS | 13.58 (345) | 12.83 (326) |
| 15.24 (387) | E4-11210-☐ | -12VS | -34VS | 14.06 (357) | 13.31 (338) |
| 15.75 (400) | E4-11210-☐ | -12VS | -34VS | 14.57 (370) | 13.82 (351) |
| 16.22 (412) | E4-11210-☐ | -12VS | -34VS | 15.04 (382) | 14.29 (363) |
| 16.73 (425) | E4-11210-☐ | -12VS | -34VS | 15.55 (395) | 14.80 (376) |
| 17.20 (437) | E4-11210-☐ | -12VS | -34VS | 16.02 (407) | 15.28 (388) |
| 17.72 (450) | E4-11210-☐ | -12VS | -34VS | 16.54 (420) | 15.79 (401) |
| 18.19 (462) | E4-11210-☐ | -12VS | -34VS | 17.01 (432) | 16.26 (413) |
| 18.70 (475) | E4-11210-☐ | -12VS | -34VS | 17.52 (445) | 16.77 (426) |
| 19.17 (487) | E4-11210-☐ | -12VS | -34VS | 17.99 (457) | 17.24 (438) |
| 19.69 (500) | E4-11210-☐ | -12VS | -34VS | 18.50 (470) | 17.76 (451) |
| 20.16 (512) | E4-11210-☐ | -12VS | -34VS | 18.98 (482) | 18.23 (463) |
| 20.67 (525) | E4-11210-☐ | -12VS | -34VS | 19.49 (495) | 18.74 (476) |
| 21.14 (537) | E4-11210-☐ | -12VS | -34VS | 19.96 (507) | 19.21 (488) |
| 21.65 (550) | E4-11210-☐ | -12VS | -34VS | 20.47 (520) | 19.72 (501) |
| 23.62 (600) | E4-11210-☐ | -12VS | -34VS | 22.44 (570) | 21.69 (551) |

PDF: www.igus.com/e-chain-pdfs
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RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Strain Relief

igus® E-Chain System®
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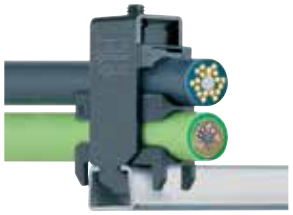
## Chainfix clamps for the profile rail



For more information please refer to strain relief section of Chapter 10 in main catalog.

igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

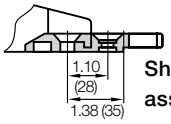
## Chainfix Clip

### Modular snap-on strain relief device

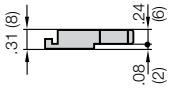
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10 in main catalog.**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

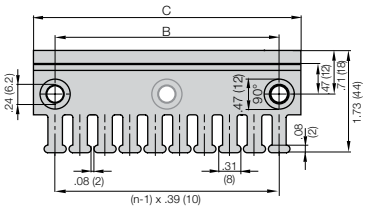



Single tiewrap plate

### Option 1: Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

### Option 2: Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10 in main catalog.**

### Option 3: Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4-1
# Series E4-112/H4-112/R4-112
# Guide Trough



Width of Crossbar
E4-112-**12**-300-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 4.21 (107) | **97-50-225** |
| **-06** | 4.80 (122) | **97-50-225** |
| **-07** | 5.20 (132) | **97-50-250** |
| **-10** | 6.18 (157) | **97-50-275** |
| **-11** | 6.65 (169) | **97-50-275** |
| **-12** | 7.17 (182) | **97-50-300** |
| **-13** | 76.38 (194) | **97-50-300** |
| **-15** | 8.15 (207) | **97-50-325** |
| **-16** | 8.62 (219) | **97-50-325** |
| **-17** | 9.13 (232) | **97-50-350** |
| **-18** | 9.61 (244) | **97-50-350** |
| **-20** | 10.12 (257) | **97-50-375** |
| **-21** | 10.59 (269) | **97-50-375** |
| **-22** | 11.10 (282) | **97-50-400** |
| **-23** | 11.57 (294) | **97-50-400** |
| **-25** | 12.09 (307) | **97-50-425** |
| **-26** | 12.56 (319) | **97-50-425** |
| **-27** | 13.07 (332) | **97-50-450** |
| **-28** | 13.54 (344) | **97-50-450** |
| **-30** | 14.06 (357) | **97-50-475** |
| **-31** | 14.53 (369) | **97-50-475** |
| **-32** | 15.04 (382) | **97-50-500** |
| **-33** | 15.51 (394) | **97-50-500** |
| **-35** | 16.02 (407) | **97-50-525** |
| **-36** | 16.50 (419) | **97-50-525** |
| **-37** | 17.01 (432) | **97-50-550** |
| **-38** | 17.48 (444) | **97-50-550** |
| **-40** | 17.99 (457) | **97-50-575** |
| **-41** | 18.46 (469) | **97-50-575** |
| **-42** | 18.98 (482) | **97-50-600** |
| **-43** | 19.45 (494) | **97-50-600** |
| **-45** | 19.96 (507) | **97-50-625** |
| **-46** | 20.43 (519) | **97-50-625** |
| **-47** | 20.94 (532) | **97-50-650** |
| **-48** | 21.42 (544) | **97-50-650** |
| **-50** | 21.93 (557) | **97-50-675** |
| **-51** | 22.40 (569) | **97-50-675** |
| **-52** | 22.91 (582) | **97-50-700** |
| **-53** | 23.39 (594) | **97-50-700** |
| **-55** | 23.90 (607) | **97-50-725** |
| **-60** | 25.87 (657) | **97-50-775** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 97-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 97-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**

Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

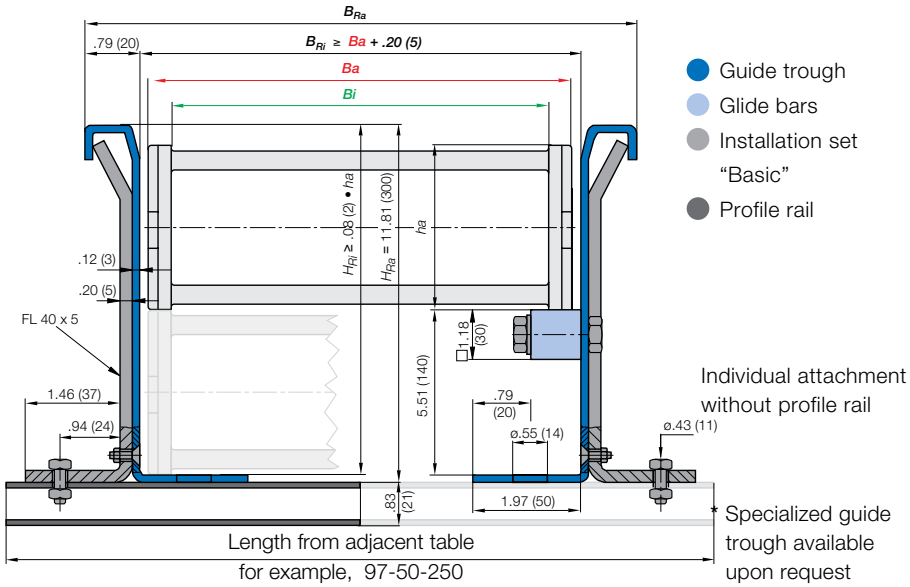
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 97-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**



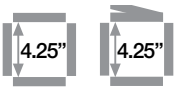

- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 600/601/R608




## Price Index

Series 600

Series 601

Series R608

## Special Features / Options

This E4 Series is a low-noise version

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 19.69 ft (6 m) |
| Rotary requires further calculation |

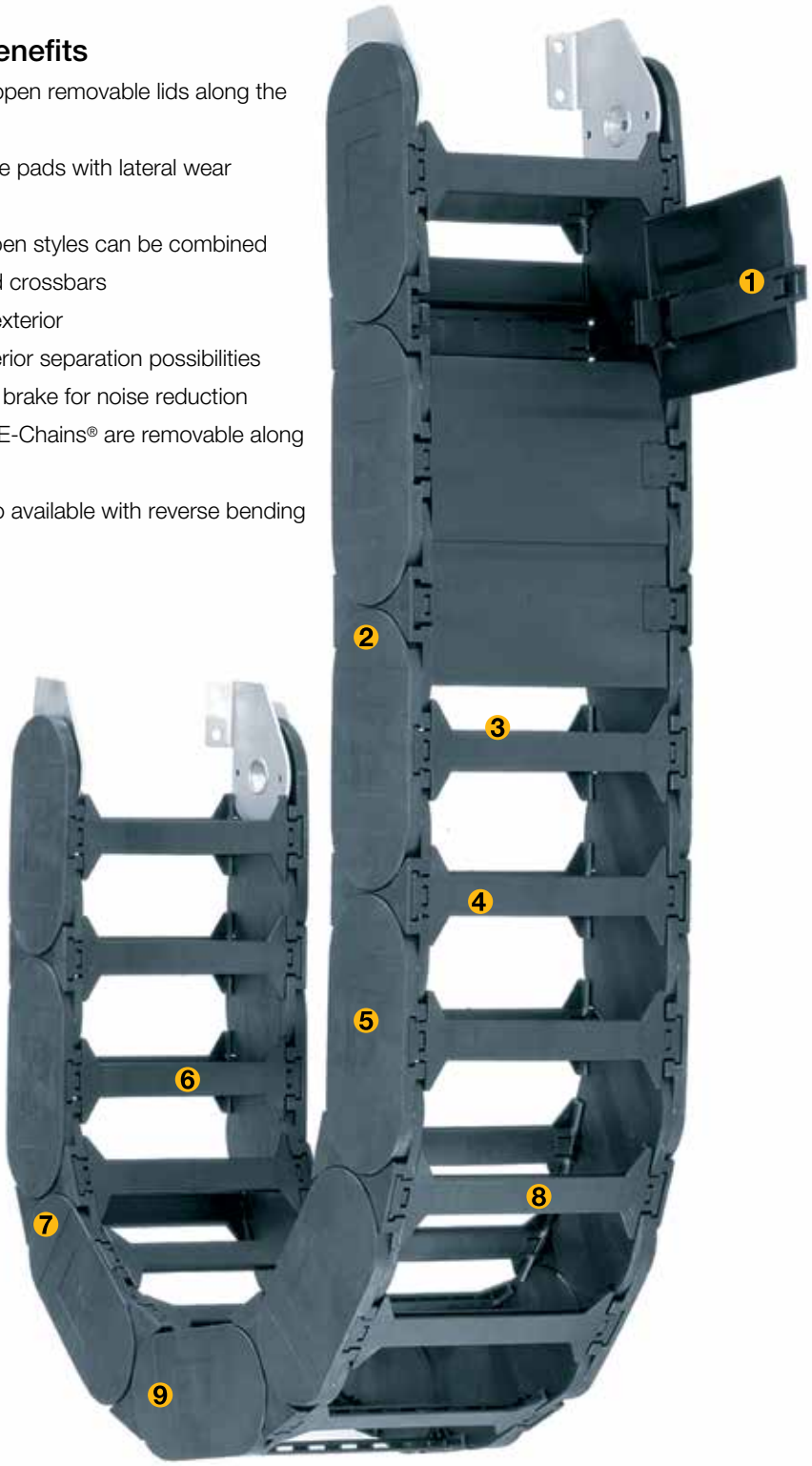
## Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When a simpler, low-cost solution is required
  ➤ **Series 1640**
- If an increased inner height is required
  ➤ **Series 640**

## Features & Benefits

1. Hinged snap-open removable lids along the outer radius
2. Optimized glide pads with lateral wear allowance
3. Closed and open styles can be combined
4. Wide, rounded crossbars
5. Dirt-repellent exterior
6. Numerous interior separation possibilities
7. Stop dog with brake for noise reduction
8. Crossbars on E-Chains® are removable along both radii
9. E-Chains® also available with reverse bending radius “RBR”




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 19.69 ft (6 m) **600-30-300-0** | **E-Chain®** |
| With 2 separators **6011** assembled every 2nd link | **Interior Separation** |
| 1 Set **6000-12** | **Mounting Bracket** |

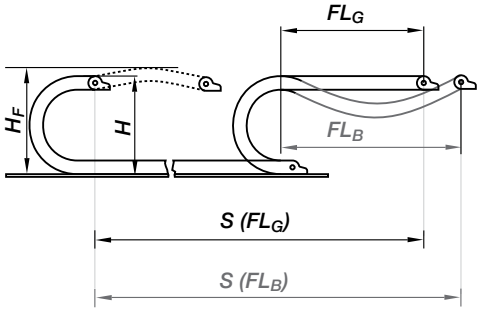
# E-Chain System® E4/100
# Series 600/601/R608
# Installation Dimensions

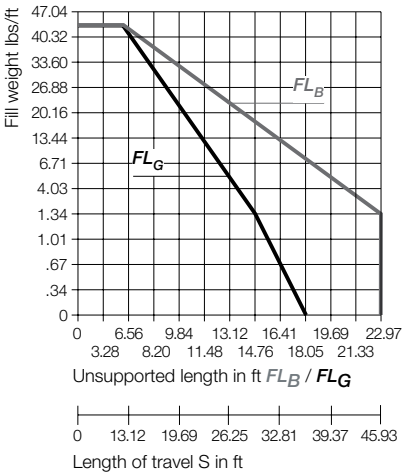
## Short travel, unsupported length

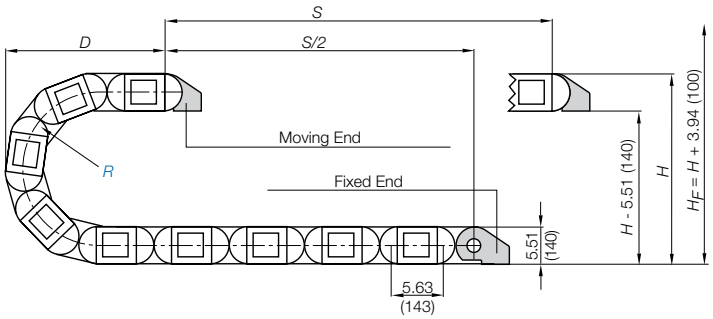
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 5.63" (143 mm)
**Links per ft (m): =** 2.13 (7)
**For center mount applications:**
**Chain length =** $_{S}/_{2} + K$

The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| D | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| K | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) | 104.72 (2660) | 135.24 (3435) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

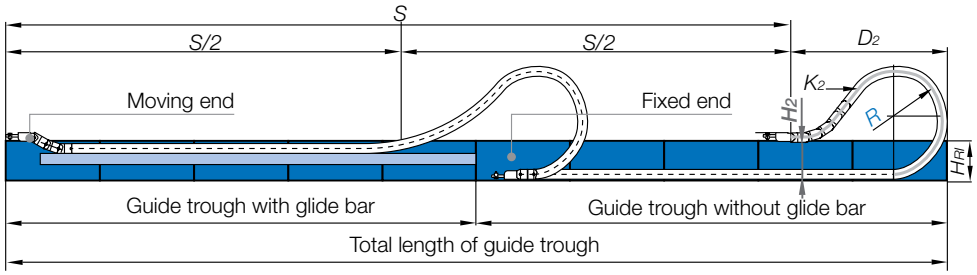
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)**

**For center mount applications:**
**Chain length: =** $_{S}/_{2} + K_2$




| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | - |
| $D_{2+20}$ | 35.43 (900) | 39.37 (1000) | 43.31 (1100) | 49.21 (1250) | 57.09 (1450) | 62.99 (1600) | 66.93 (1700) | 74.80 (1900) | 80.71 (2050) | 112.20 (2850) | - |
| $K_2$ | 61.93 (1573) | 67.56 (1716) | 73.19 (1859) | 90.08 (2288) | 101.33 (2574) | 112.60 (2860) | 123.86 (3146) | 135.12 (3432) | 152.01 (3861) | 197.05 (5005) | - |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ **Chapter 1**

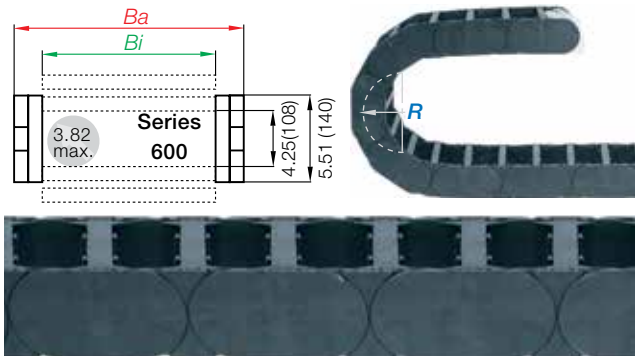


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 600/601/R608

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 600 - E-Chain® with crossbars every link



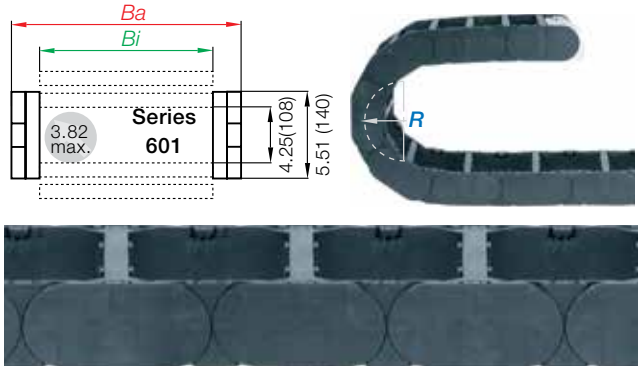

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

600- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 600- Width
- Series

## Series 601 - E-Chain® with crossbars every other link



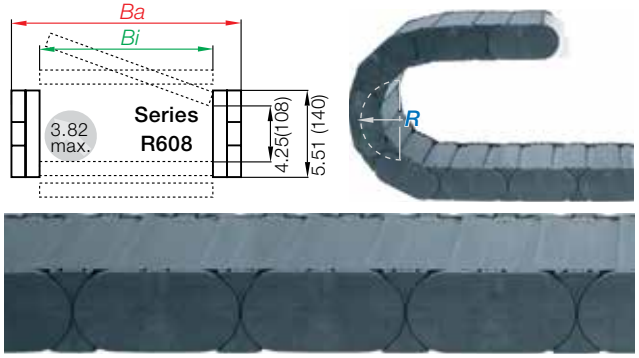

- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

601- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 601- Width
- Series

## Series R608 - fully enclosed E-Tube



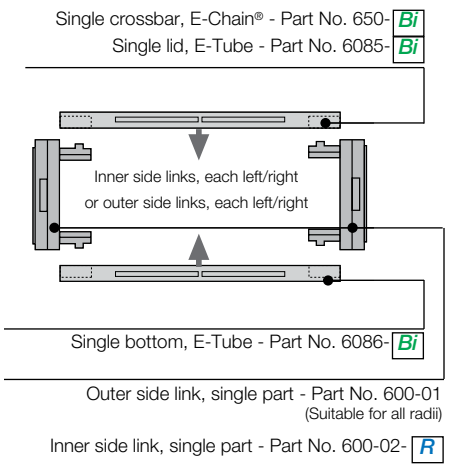

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

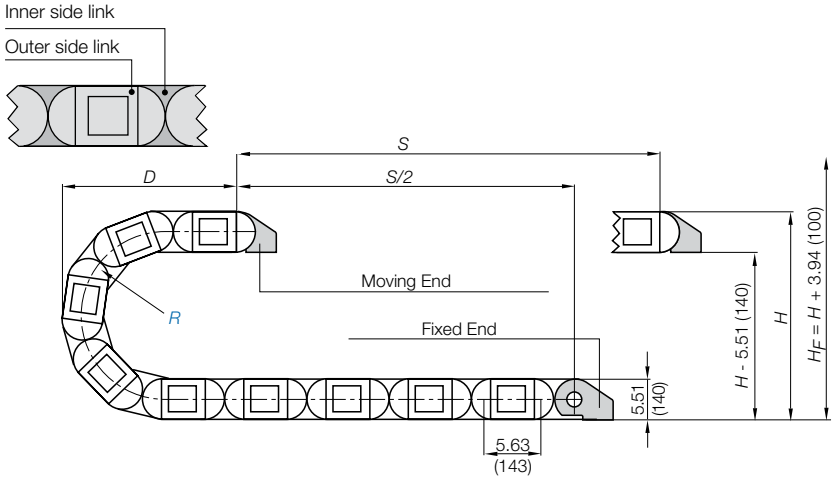
**Part Number Structure**

608- 30- 300- 0

- 300- Color - Black
- 30- Bending radius
- 608- Width
- Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4/100
# Series 600/601/R608

Supplement part number with required radius. Example: 600-30-300-0
Pitch: 5.63 in. (143 mm) per link links/ft(m) = 2.13 (7)

| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 600 lbs/ft (kg/m) | 601 lbs/ft (kg/m) | R608 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 600-20- | 601-20- | 608-20- | -0 | 7.87 (200) | 9.92 (252) | ≈ 3.00 (4.46) | ≈ 2.63 (3.91) | * |
| 600-25- | 601-25- | 608-25- | -0 | 9.84 (250) | 11.89 (302) | ≈ 3.26 (4.85) | ≈ 2.76 (4.10) | * |
| 600-30- | 601-30- | 608-30- | -0 | 11.81 (300) | 13.86 (352) | ≈ 3.55 (5.29) | ≈ 2.90 (4.32) | * |
| 600-32- | 601-32- | | -0 | 12.60 (320) | 14.65 (372) | ≈ 3.62 (5.38) | ≈ 2.94 (4.37) | – |
| 600-35- | 601-35- | 608-35- | -0 | 13.78 (350) | 15.83 (402) | ≈ 3.84 (5.71) | ≈ 3.04 (4.53) | * |
| 600-40- | 601-40- | 608-40- | -0 | 15.75 (400) | 17.80 (452) | ≈ 4.05 (6.02) | ≈ 3.15 (4.69) | * |
| 600-45- | 601-45- | | -0 | 17.72 (450) | 19.76 (502) | ≈ 4.34 (6.46) | ≈ 3.30 (4.91) | – |
| 600-50- | 601-50- | | -0 | 19.69 (500) | 21.73 (552) | ≈ 4.53 (6.74) | ≈ 3.39 (5.05) | – |
| 600-55- | 601-55- | | -0 | 21.65 (550) | 23.70 (602) | ≈ 5.01 (7.45) | ≈ 3.63 (5.40) | – |
| 600-60- | 601-60- | | -0 | 23.62 (600) | 25.67 (652) | ≈ 5.14 (7.65) | ≈ 3.70 (5.50) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 600-30-300-0

| | 200** | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
| *H* | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| *D* | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| *K* | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) | 104.72 (2660) | 135.24 (3435) |

** This radius is not available for the R608 Series
*Upon request

0=Standard color black. For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
Telephone 1-800-521-2747
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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/100
# Series 600/601/R608
# Interior Separation

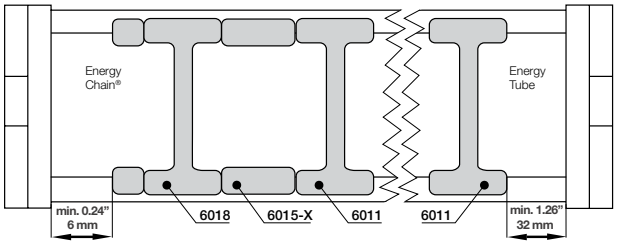
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

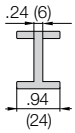
Exception: Minimum spacing

Locking separator 6008 = .91" (23 mm)



Standard

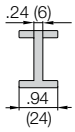
**Vertical separator 6001**




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 6001** |
| Assembled | **Part No. 6011** |

- **Standard separator 6001 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Locking separator 6008**




| Locking separator (chain only) | |
|---|---|
| Unassembled | **Part No. 6008** |
| Assembled | **Part No. 6018** |

- **Locking separator 6008 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

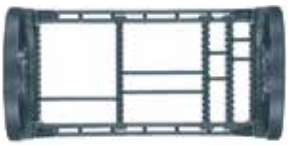
**Spacers 6005-XX**

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **6005 -10** | **6015 -10** | .39" | (10) |
| **6005 -15** | **6015 -15** | .59" | (15) |
| **6005 -20** | **6015 -20** | 79" | (20) |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

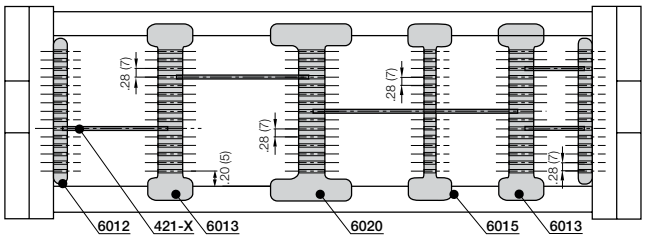
# E-Chain System® E4/100
# Series 600/601/R608
# Interior Separation



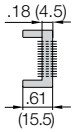
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



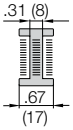

- **Side plates 6002**
  This component is used to form the basic pattern of a shelf system.




| Side plate | |
|---|---|
| Unassembled | **Part No. 6002** |
| Assembled | **Part No. 6012** |

Side plate 6002

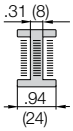
- **Vertical separator 6003**
  This component is used to form the basic pattern of a shelf system.




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 6003** |
| Assembled | **Part No. 6013** |

Vertical separator 6003

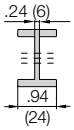
- **Locking vertical separator 6010**
  This separator is slotted and able to be combined with shelves




| Locking vertical separator | |
|---|---|
| Unassembled | **Part No. 6010** |
| Assembled | **Part No. 6020** |

Locking vertical separator 6010

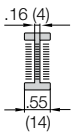
- **Slotted separators 6004**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




| Slotted separators, closed | |
|---|---|
| Unassembled | **Part No. 6004** |
| Assembled | **Part No. 6014** |

Closed slotted separator 6004

- **Slotted separator 6005**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 11 middle slots




| Slotted separators, open | |
|---|---|
| Unassembled | **Part No. 6005** |
| Assembled | **Part No. 6015** |

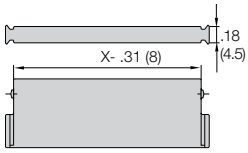
Open slotted separator 6005

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

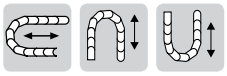
| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

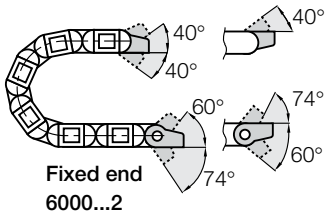
# E-Chain System® E4/100
# Series 600/601/R608
# Mounting Brackets - Steel
# Strain Relief

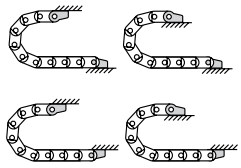
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



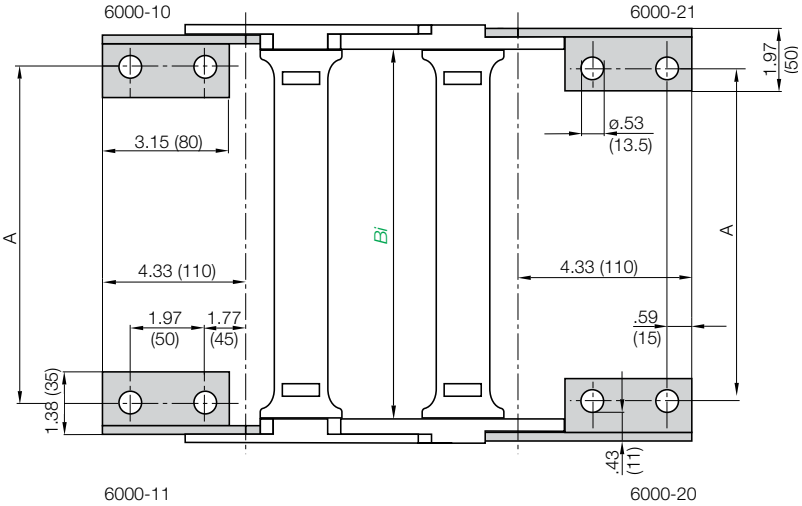


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 600/601/R608
**6000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 600/601/R608
**6000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 600/601/R608
**6000-2**




## Bracket Mounting Dimensions

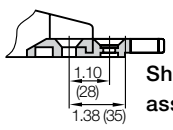
| Width of Chain *Bi* | Part Number | Mounting Brackets* Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 7.87 (200) | 6000 | -12 | -1 | -2 | 6.69 (170) |
| 9.84 (250) | 6000 | -12 | -1 | -2 | 8.66 (220) |
| 11.81 (300) | 6000 | -12 | -1 | -2 | 10.63 (270) |
| 12.60 (320) | 6000 | -12 | -1 | -2 | 14.42 (290) |
| 13.78 (350) | 6000 | -12 | -1 | -2 | 12.60 (320) |
| 15.75 (400) | 6000 | -12 | -1 | -2 | 14.57 (370) |
| 17.72 (450) | 6000 | -12 | -1 | -2 | 16.54 (420) |
| 19.69 (500) | 6000 | -12 | -1 | -2 | 18.50 (470) |
| 21.65 (550) | 6000 | -12 | -1 | -2 | 20.47 (520) |
| 23.62 (600) | 6000 | -12 | -1 | -2 | 22.48 (570) |

***Ordering information**

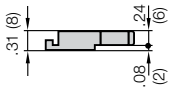
**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

# Strain Relief




Shown assembled

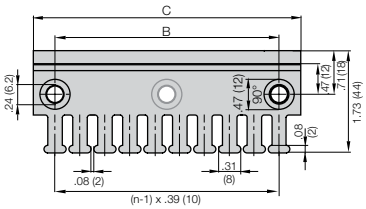



Single tiewrap plate

## Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




For more information please refer to strain relief section of Chapter 10

# E-Chain System® E4/100
# Series 600/601/R608
# Guide Trough



Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 97-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 97-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 97-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

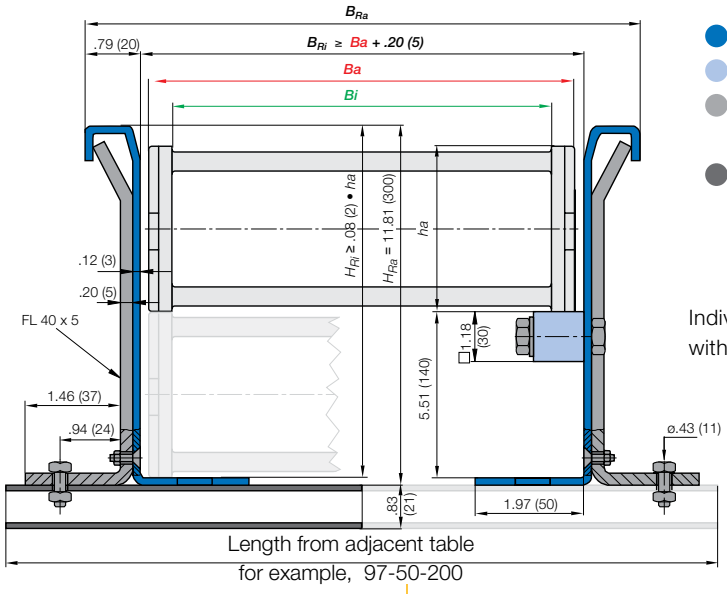
**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
600-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-20** | 10.12 (257) | **97-50-375** |
| **-25** | 12.09 (307) | **97-50-425** |
| **-30** | 14.06 (357) | **97-50-475** |
| **-32** | 14.84 (377) | **97-50-500** |
| **-35** | 16.02 (407) | **97-50-525** |
| **-40** | 17.99 (457) | **97-50-575** |
| **-45** | 19.96 (507) | **97-50-625** |
| **-50** | 21.93 (557) | **97-50-675** |
| **-55** | 23.90 (607) | **97-50-725** |
| **-60** | 25.87 (657) | **97-50-775** |

Standard length profile rail




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 800

7.87”

## Price Index

Series 800

## Special Features / Options

ESD classification:
Electrically conductive ESD/
ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging: consult igus® |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 19.69 ft (6 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If a particularly large and rigid E-Chain® is required
- For very high speeds and/or accelerations
- For long travels
- For high additional loads

## Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Wide, rounded crossbars
4. Crossbars on E-Chains® are removable along both radii
5. Each chain link consists of four opening crossbars which increases its rigidity and allows for a greater unsupported length
6. Undercut for more stability
7. E-Chains also available with reverse bending radius “RBR”

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **800-30-350-0** | **E-Chain®** |
| With 2 separators **8011** assembled every 2nd link | **Interior Separation** |
| 1 Set **8000-12** | **Mounting Bracket** |

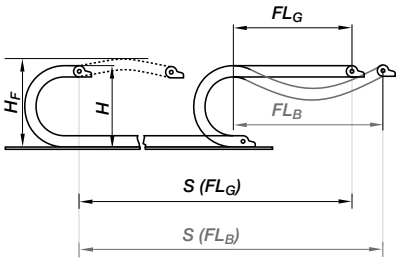
# E-Chain System® E4-1
# Series 800
# Installation Dimensions

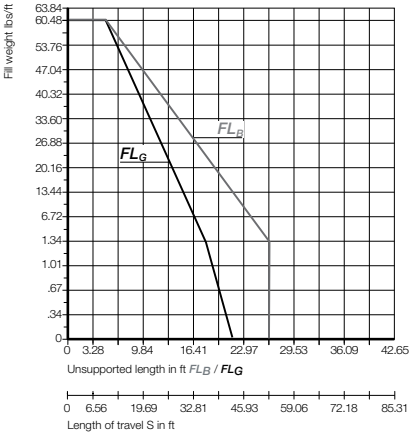
## Short travel, unsupported length

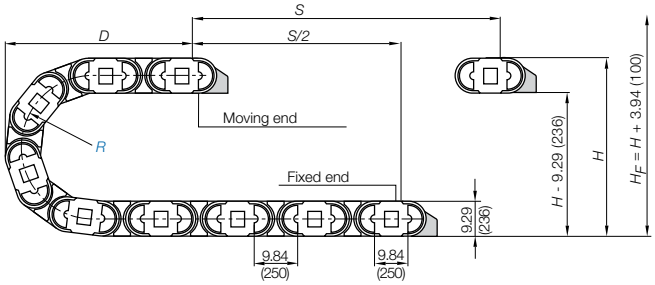
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 9.84" (250 mm)

**Links per ft (m): =** 1.22 (4)

**For center mount applications:**

**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H$ **+ 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|
| H* | 34.88 (886) | 36.85 (936) | 40.79 (1036) | 44.72 (1136) | 48.66 (1236) | 56.53 (1436) | 68.35 (1736) | 88.03 (2236) |
| D | 32.20 (818) | 33.19 (843) | 35.16 (893) | 37.13 (943) | 39.09 (993) | 43.03 (1093) | 48.94 (1243) | 58.78 (1493) |
| K | 60.04 (1525) | 62.99 (1600) | 69.29 (1760) | 75.39 (1915) | 81.69 (2075) | 93.90 (2385) | 112.60 (2860) | 143.50 (3645) |

*If the mounting bracket location is set lower

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

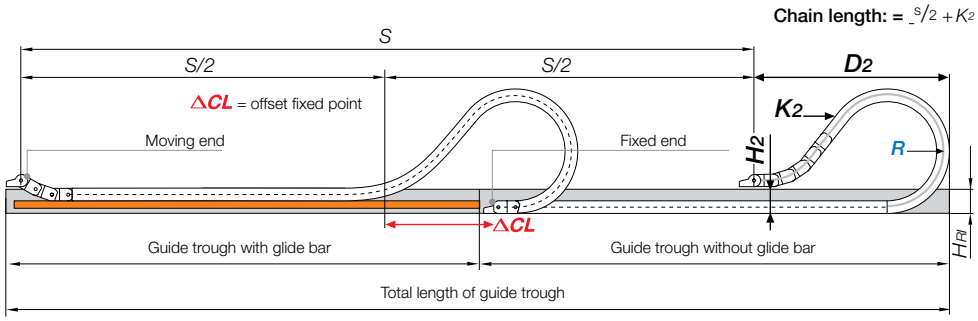
## For long travels with lowered mounting height

**Please consult igus® when choosing to use a lowered mounting height with this series**

**Long travel lengths from 49.2 ft. (15 m) to max. 1,476 ft. (450 m)**

**For center mount applications:**

**Chain length: =** $\frac{S}{2} + K_2$




| R | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|
| H2 | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) |
| D2 | 40.55 (1030) | 42.52 (1080) | 54.33 (1380) | 63.39 (1610) | 78.74 (2000) | 97.64 (2480) | * | * |
| K2 | 78.74 (2000) | 78.74 (2000) | 98.43 (2500) | 118.11 (3000) | 127.95 (3250) | 157.48 (4000) | * | * |
| ΔCL | 9.84 (250) | 11.81 (300) | 21.65 (550) | 29.53 (750) | 41.34 (1050) | 55.12 (1400) | * | * |

**In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length.**

****200 radius is not available for the E-Tubes**

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

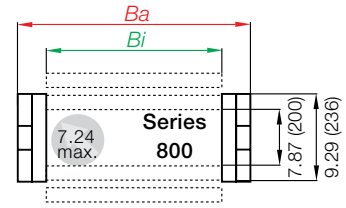
Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 800

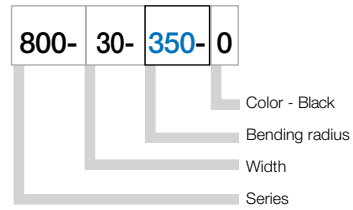
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 800 - E-Chain® with crossbars every link



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**



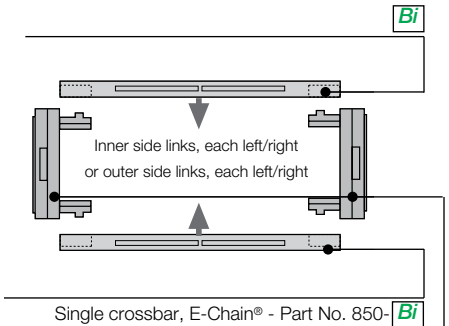
Supplement part number with required radius. Example: 800-30-350-0
Pitch: 9.84 in. (250 mm) per link links/ft(m) = 1.22 (4)

| Part Number. Crossbars Every link | | | Bi in. (mm) | Ba in. (mm) | 800 lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 800-20- | | -0 | 7.87 (200) | 10.24 (260) | ≈ 10.14 (15.09) |
| 800-25- | | -0 | 9.84 (250) | 12.20 (310) | ≈ 10.42 (15.50) |
| 800-30- | | -0 | 11.81 (300) | 14.17 (360) | ≈ 10.68 (15.89) |
| 800-32- | | -0 | 12.80 (325) | 15.16 (385) | ≈ 10.79 (16.05) |
| 800-35- | | -0 | 13.78 (350) | 16.14 (410) | ≈ 10.90 (16.22) |
| 800-40- | | -0 | 15.75 (400) | 18.11 (460) | ≈ 11.25 (16.74) |
| 800-45- | | -0 | 17.72 (450) | 20.08 (510) | ≈ 11.34 (16.88) |
| 800-50- | | -0 | 19.69 (500) | 22.04 (560) | ≈ 11.58 (17.23) |
| 800-55- | | -0 | 21.65 (550) | 24.02 (610) | ≈ 11.85 (17.63) |
| 800-60- | | -0 | 23.62 (600) | 25.98 (660) | ≈ 12.22 (18.19) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 800-30-350-0

| | 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1000 |
|---|---|---|---|---|---|---|---|---|
| *R* | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
| *H** | 34.88 (886) | 36.85 (936) | 40.79 (1036) | 44.72 (1136) | 48.66 (1236) | 56.53 (1436) | 60.47 (1536) | 88.03 (2236) |
| *D* | 32.20 (818) | 33.19 (843) | 35.16 (893) | 37.13 (943) | 39.09 (993) | 43.03 (1093) | 48.94 (1243) | 58.78 (1493) |
| *K* | 60.04 (1525) | 62.99 (1600) | 69.29 (1760) | 75.39 (1915) | 81.69 (2075) | 93.90 (2385) | 112.60 (2860) | 143.50 (3645) |

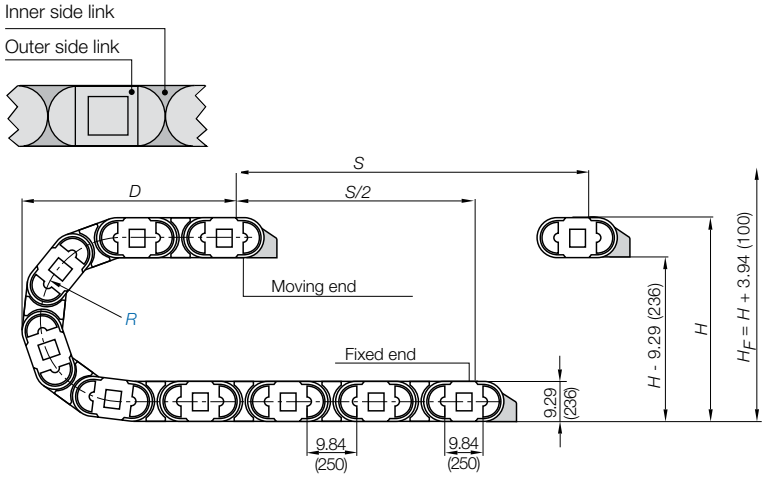
## E-Chain® as separate parts, links and side plates




Single crossbar, E-Chain® - Part No. 850-Bi

Outer side link, single part - Part No. 800-01
(Suitable for all radii)

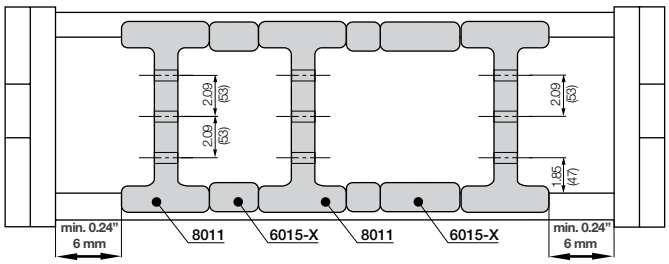
Inner side link, single part - Part No. 800-02-R



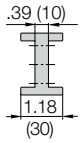
# E-Chain System® E4-1
# Series 800
# Interior Separation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®.
There is no minimum spacing needed for side plates
Exception: Minimum spacing
Locking separator 6008 = .91" (23 mm)



**Vertical separator 8001**




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 8001** |
| Assembled | **Part No. 8011** |

- **Standard separator 8001 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Spacers 6005-XX**

**Spacer (chain only)**

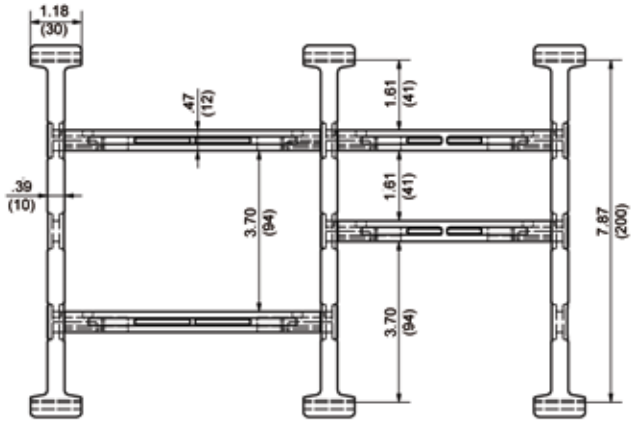
| | |
|---|---|
| Unassembled | **Part No. 6005** |
| Assembled | **Part No. 6015** |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **6005 -10** | **6015 -10** | .39" | (10) |
| **6005 -15** | **6015 -15** | .59" | (15) |
| **6005 -20** | **6015 -20** | 79" | (20) |

## Modular E4 shelving system safeguards large cables - Series 800




- Easy assembly
- Robust, also for large cable diameters
- Modular
- Widths from 50 to 600 mm
- For use with **vertical separator 8001** and **crossbar 450-XX**

**Modular Shelving**
Single sided snap in tab

| | |
|---|---|
| Unassembled | **Part No. 8001H1** |
| Assembled | **Part No. 8011H1** |

**Modular Shelving**

**Part No. 8001H2Part No. 8011H2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 800
# Mounting Brackets - Steel



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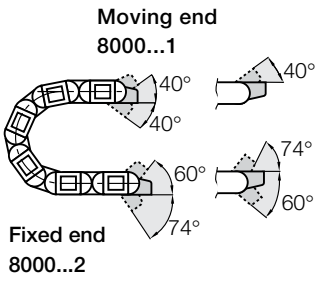
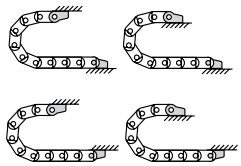
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive

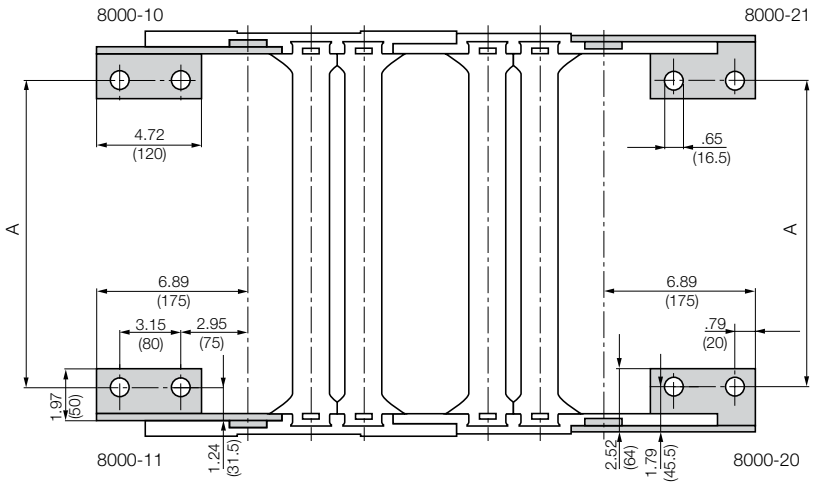




**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 800
**8000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 800
**8000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 800
**8000-2**




## Bracket Mounting Dimensions

| | Mounting Brackets | | | | |
|---|---|---|---|---|---|
| Width of Chain *Bi* | Part Number | Full Set | Moving End Only | Fixed End Only | A in. (mm) |
| 7.87 (200) | 8000 | -12 | -1 | -2 | 5.91 (150) |
| 9.84 (250) | 8000 | -12 | -1 | -2 | 7.87 (200) |
| 11.81 (300) | 8000 | -12 | -1 | -2 | 9.84 (250) |
| 12.80 (325) | 8000 | -12 | -1 | -2 | 10.83 (275) |
| 13.78 (350) | 8000 | -12 | -1 | -2 | 11.81 (300) |
| 15.75 (400) | 8000 | -12 | -1 | -2 | 13.78 (350) |
| 17.72 (450) | 8000 | -12 | -1 | -2 | 15.75 (400) |
| 19.69 (500) | 8000 | -12 | -1 | -2 | 17.72 (450) |
| 21.65 (550) | 8000 | -12 | -1 | -2 | 19.69 (500) |
| 23.62 (600) | 8000 | -12 | -1 | -2 | 21.65 (550) |

**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-1**

# E-Chain System® E4-1
# Series 800
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 90-30**
- 1/2 travel length glide bars
  **Part No. 90-31**
- Installation sets as end connectors
  **Part No. 90-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50m)
Center mounted

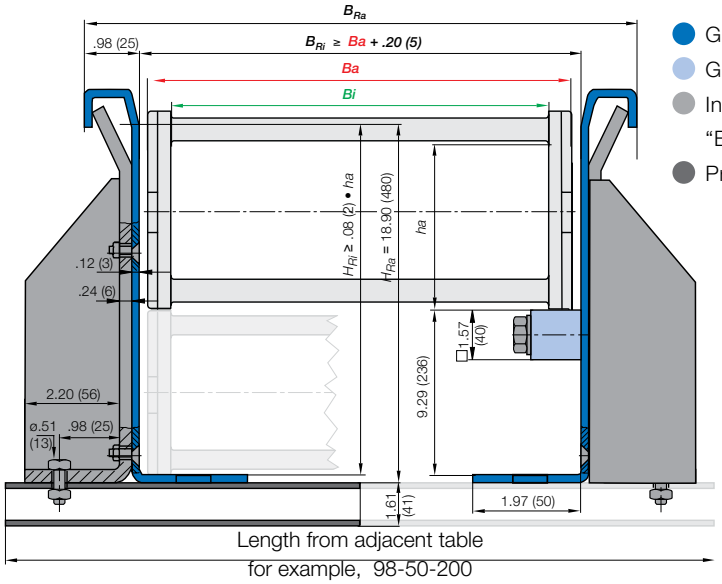
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**90-50-XXX**
**Example:**
90-50-400 for (400 m) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
640-**12**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-20** | 10.43 (265) | **90-50-450** |
| **-25** | 12.40 (315) | **90-50-500** |
| **-30** | 14.37 (365) | **90-50-550** |
| **-32** | 15.35 (390) | **90-50-575** |
| **-35** | 16.33 (415) | **90-50-600** |
| **-40** | 18.31 (465) | **90-50-650** |
| **-45** | 20.28 (515) | **90-50-700** |
| **-50** | 22.24 (565) | **90-50-750** |
| **-55** | 24.21 (615) | **90-50-800** |
| **-60** | 26.18 (665) | **90-50-850** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

Standard length profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 840

## Price Index

Series 840

## Special Options Available

ESD classification:
Electrically conductive ESD/
ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging: consult igus® |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 19.69 ft (6 m) |
| Rotary requires further calculation |

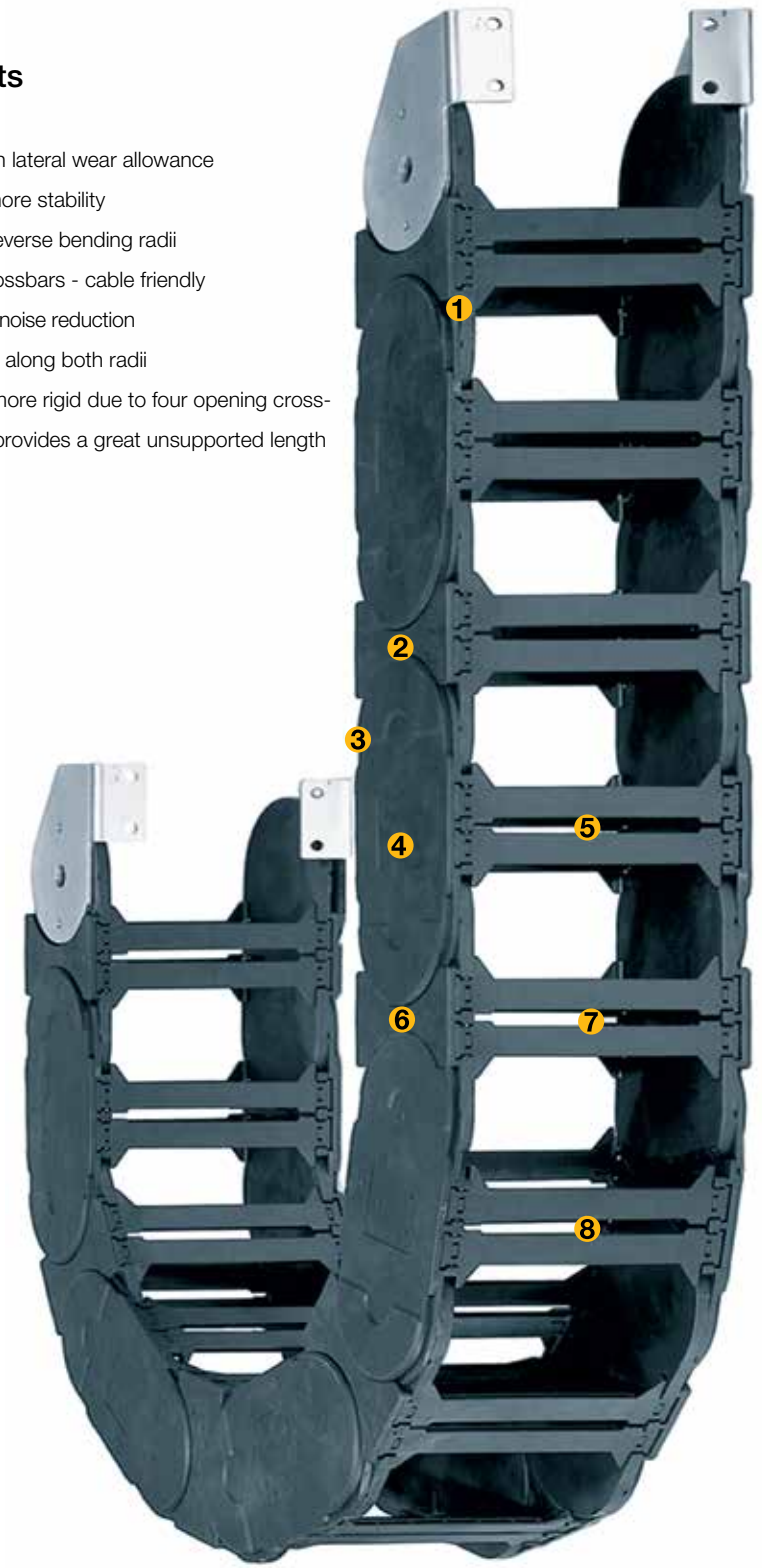
## Usage Guidelines

- If a particularly big and stable E-Chain® is required
- At very high speeds and/or accelerations
- For long travels
- For high additional loads
- Large cable/hose diameters

- If a more stable E-Chain® with identical inner height is required
  ➤ **Series 800**

## Features & Benefits

1. Dirt-repellent exterior
2. Optimized glide pads with lateral wear allowance
3. Tongue and groove for more stability
4. E-Chain® available with reverse bending radii
5. Wide, rounded plastic crossbars - cable friendly
6. Stop dog with “brake” for noise reduction
7. Crossbars are removable along both radii
8. Each chain link is made more rigid due to four opening cross-bars, and consequently provides a great unsupported length




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 23 ft (7 m) **840-30-350-0** | **E-Chain®** |
| With 2 separators **8411** assembled every 2nd link | **Interior Separation** |
| 1 Set **8000-12** | **Mounting Bracket** |

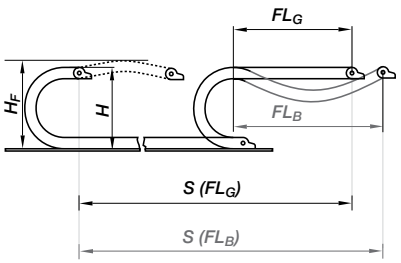
# E-Chain System® E4-1
# Series 840
# Installation Dimensions

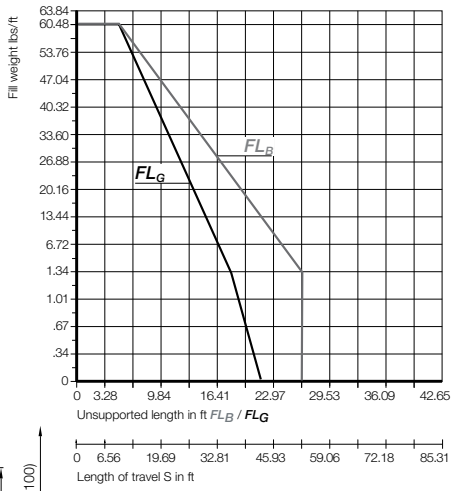
## Short travel, unsupported length

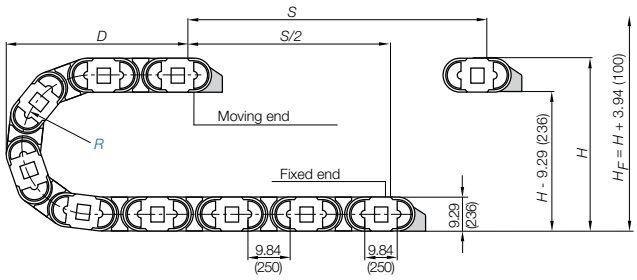
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 9.84" (250 mm)
**Links per ft (m): =** 1.22 (4)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: ***HF = H + 3.94 in. (100 mm)*** (with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|
| H* | 34.88 (886) | 36.85 (936) | 40.79 (1036) | 44.72 (1136) | 48.66 (1236) | 56.53 (1436) | 68.35 (1736) | 88.03 (2236) |
| D | 32.20 (818) | 33.19 (843) | 35.16 (893) | 37.13 (943) | 39.09 (993) | 43.03 (1093) | 48.94 (1243) | 58.78 (1493) |
| K | 60.04 (1525) | 62.99 (1600) | 69.29 (1760) | 75.39 (1915) | 81.69 (2075) | 93.90 (2385) | 112.60 (2860) | 143.50 (3645) |

### Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

### Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K = π • R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

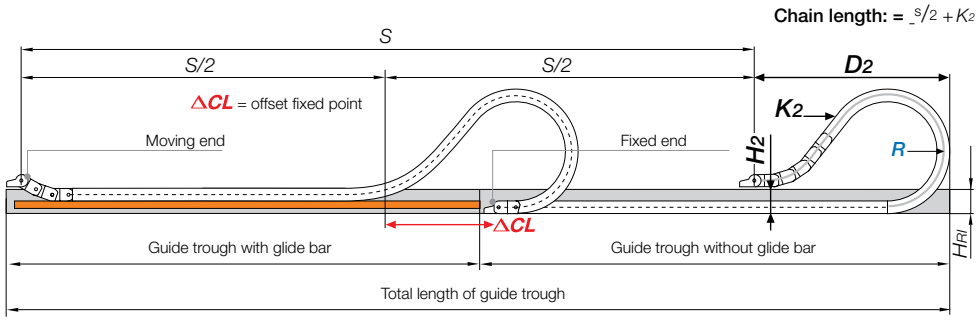
*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Please consult igus® when choosing to use a lowered mounting height with this series**

**Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




| R | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|
| H2 | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) | 22.83 (580) |
| D2 | 40.55 (1030) | 42.52 (1080) | 54.33 (1380) | 63.39 (1610) | 78.74 (2000) | 97.64 (2480) | * | * |
| K2 | 78.74 (2000) | 78.74 (2000) | 98.43 (2500) | 118.11 (3000) | 127.95 (3250) | 157.48 (4000) | * | * |
| ΔCL | 9.84 (250) | 11.81 (300) | 21.65 (550) | 29.53 (750) | 41.34 (1050) | 55.12 (1400) | * | * |

**In case of travels between 39.4 and 32.8 ft (12 and 15 m) we recommend a longer unsupported length.**
****200 radius is not available for the E-Tubes**

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

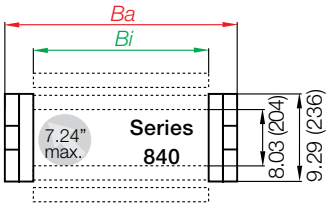
### Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 840
# Product Range

## Series 840 - E-Chain® with crossbars every link

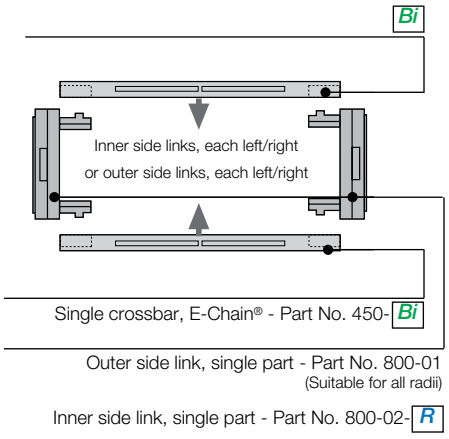


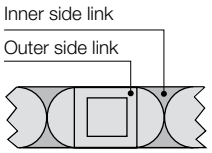
- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

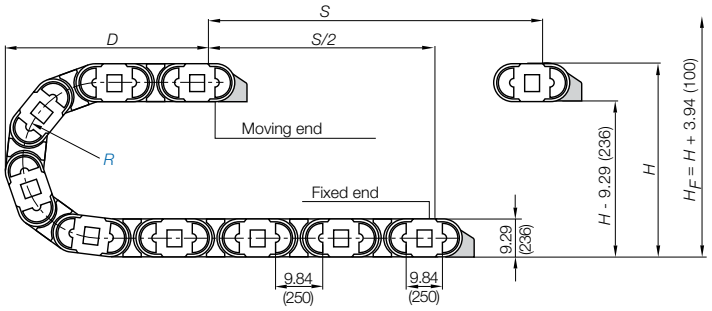
**Part Number Structure**

| 840- | 30- | 350- | 0 |
|---|---|---|---|

## E-Chain® as separate parts, links and side plates

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# E-Chain System® E4-1
# Series 840
# Product Range

350

| Part Number. Crossbars Every link | | Bi in. (mm) | Ba in. (mm) | 840 lbs/ft (kg/m) |
|---|---|---|---|---|
| 840-13- | -0 | 3.94 (100) | 6.30 (160) | ≈ 9.30 (13.84) |
| 840-15- | -0 | 4.45 (113) | 6.81 (173) | ≈ 9.32 (13.87) |
| 840-16- | -0 | 4.92 (125) | 7.28 (185) | ≈ 9.37 (13.95) |
| 840-17- | -0 | 5.43 (138) | 7.80 (198) | ≈ 9.43 (14.04) |
| 840-18- | -0 | 5.91 (150) | 8.27 (210) | ≈ 9.49 (14.13) |
| 840-20- | -0 | 6.42 (163) | 8.78 (223) | ≈ 9.52 (14.17) |
| 840-21- | -0 | 6.89 (175) | 9.25 (235) | ≈ 9.56 (14.22) |
| 840-22- | -0 | 7.40 (188) | 9.76 (248) | ≈ 9.59 (14.27) |
| 840-23- | -0 | 7.87 (200) | 10.24 (260) | ≈ 9.64 (14.35) |
| 840-25- | -0 | 8.38 (213) | 10.75 (273) | ≈ 9.70 (14.43) |
| 840-26- | -0 | 8.86 (225) | 11.22 (285) | ≈ 9.74 (14.49) |
| 840-27- | -0 | 9.37 (238) | 11.73 (298) | ≈ 9.79 (14.57) |
| 840-28- | -0 | 9.84 (250) | 12.20 (310) | ≈ 9.82 (14.61) |
| 840-30- | -0 | 10.35 (263) | 12.72 (323) | ≈ 9.89 (14.72) |
| 840-31- | -0 | 10.83 (275) | 13.19 (335) | ≈ 9.91 (14.75) |
| 840-32- | -0 | 11.34 (288) | 13.70 (348) | ≈ 9.96 (14.82) |
| 840-33- | -0 | 11.81 (300) | 14.17 (360) | ≈ 10.02 (14.91) |
| 840-35- | -0 | 12.32 (313) | 14.69 (373) | ≈ 10.12 (15.06) |
| 840-36- | -0 | 12.80 (325) | 15.16 (385) | ≈ 10.14 (15.09) |
| 840-37- | -0 | 13.31 (338) | 15.67 (398) | ≈ 10.15 (15.11) |
| 840-38- | -0 | 13.78 (350) | 16.14 (410) | ≈ 10.18 (15.15) |
| 840-40- | -0 | 14.29 (363) | 16.65 (423) | ≈ 10.31 (15.34) |
| 840-41- | -0 | 14.76 (375) | 17.13 (435) | ≈ 10.34 (15.39) |
| 840-42- | -0 | 15.28 (388) | 17.64 (448) | ≈ 10.42 (15.50) |
| 840-43- | -0 | 15.75 (400) | 18.11 (460) | ≈ 10.46 (15.57) |
| 840-45- | -0 | 16.26 (413) | 18.62 (473) | ≈ 10.50 (15.63) |
| 840-46- | -0 | 16.73 (425) | 19.09 (485) | ≈ 10.54 (15.69) |
| 840-47- | -0 | 17.24 (438) | 19.61 (498) | ≈ 10.56 (15.72) |
| 840-48- | -0 | 17.72 (450) | 20.08 (510) | ≈ 10.62 (15.80) |
| 840-50- | -0 | 18.23 (463) | 20.59 (523) | ≈ 10.66 (15.87) |
| 840-51- | -0 | 18.70 (475) | 21.06 (535) | ≈ 10.69 (15.91) |
| 840-52- | -0 | 19.21 (488) | 21.57 (548) | ≈ 10.70 (15.93) |
| 840-53- | -0 | 19.69 (500) | 22.05 (560) | ≈ 10.75 (16.00) |
| 840-55- | -0 | 20.20 (513) | 22.56 (573) | ≈ 10.96 (16.31) |
| 840-60- | -0 | 22.17 (563) | 24.53 (623) | ≈ (11.07 16.47) |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 840-30-350-0

| | 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1000 |
|---|---|---|---|---|---|---|---|---|
| *R* | 12.80 (325) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
| *H** | 34.88 (886) | 36.85 (936) | 40.79 (1036) | 44.72 (1136) | 48.66 (1236) | 56.53 (1436) | 68.34 (1736) | 88.03 (2236) |
| *D* | 32.20 (818) | 33.19 (843) | 35.16 (893) | 37.13 (943) | 39.09 (993) | 43.03 (1093) | 48.94 (1243) | 58.78 (1493) |
| *K* | 60.04 (1525) | 62.99 (1600) | 69.29 (1760) | 75.39 (1915) | 81.69 (2075) | 93.90 (2385) | 112.60 (2860) | 143.50 (3645) |

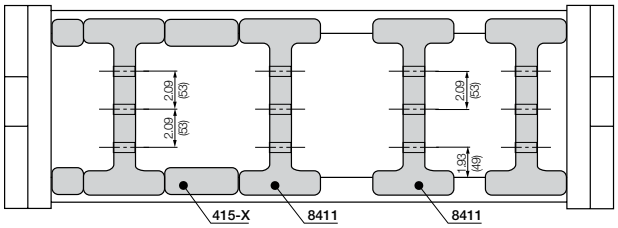
0 = Standard color black. For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

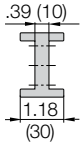
# E-Chain System® E4-1
# Series 840
# Interior Separation

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Vertical separator 8401




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 8401** |
| Assembled | **Part No. 8411** |

- **Standard separator 8401 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Spacers 405-XX

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405.XX** |
| Assembled | **Part No. 415.XX** |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

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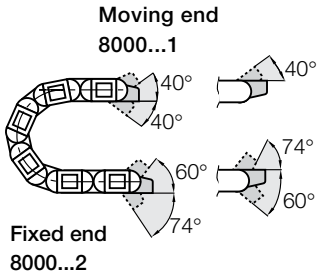
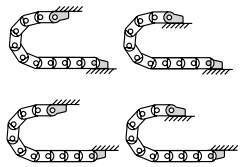
# E-Chain System® E4-1
# Series 840
# Mounting Brackets

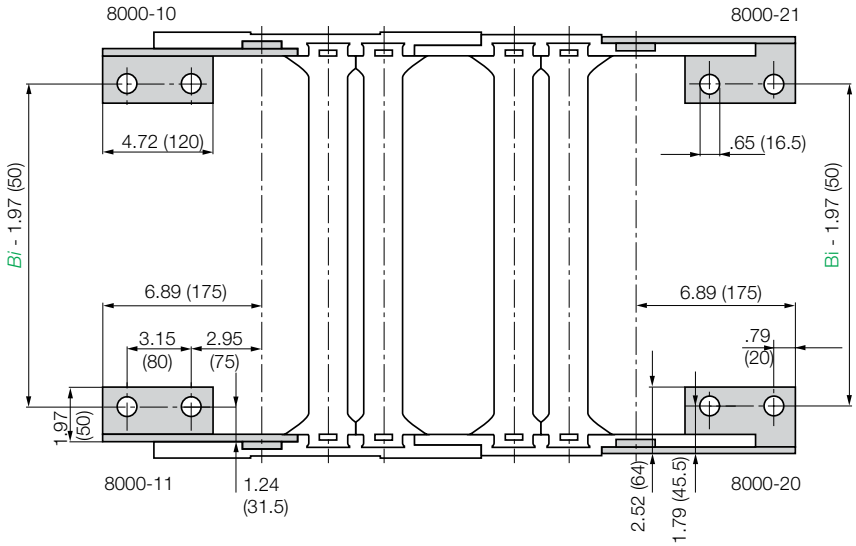
## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -




| Part No. | Mounting bracket |
|---|---|
| 8000-12 | Full set |
| 8000-1 | moving end |
| 8000-2 | fixed end |

**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series 840
# Guide Trough

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| Width of Crossbar 840-**20**-200-0 | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-13** | 6.49 (165) | **90-50-350** |
| **-15** | 7.01 (178) | **90-50-350** |
| **-16** | 7.48 (190) | **90-50-375** |
| **-17** | 7.99 (203) | **90-50-375** |
| **-18** | 8.46 (215) | **90-50-400** |
| **-20** | 8.98 (228) | **90-50-400** |
| **-21** | 9.45 (240) | **90-50-425** |
| **-22** | 9.96 (253) | **90-50-425** |
| **-23** | 10.43 (265) | **90-50-450** |
| **-25** | 10.94 (278) | **90-50-450** |
| **-26** | 11.42 (290) | **90-50-475** |
| **-27** | 11.93 (303) | **90-50-475** |
| **-28** | 12.40 (315) | **90-50-500** |
| **-30** | 12.91 (328) | **90-50-500** |
| **-31** | 13.39 (340) | **90-50-525** |
| **-32** | 13.90 (353) | **90-50-525** |
| **-33** | 14.37 (365) | **90-50-550** |
| **-35** | 14.88 (378) | **90-50-550** |
| **-36** | 15.35 (390) | **90-50-575** |
| **-37** | 15.87 (403) | **90-50-575** |
| **-38** | 16.34 (415) | **90-50-600** |
| **-40** | 16.85 (428) | **90-50-600** |
| **-41** | 17.32 (440) | **90-50-625** |
| **-42** | 17.83 (453) | **90-50-625** |
| **-43** | 18.31 (465) | **90-50-650** |
| **-45** | 18.82 (478) | **90-50-650** |
| **-46** | 19.29 (490) | **90-50-675** |
| **-47** | 19.80 (503) | **90-50-675** |
| **-48** | 20.20 (513) | **90-50-700** |
| **-50** | 20.79 (528) | **90-50-700** |
| **-51** | 21.26 (540) | **90-50-725** |
| **-52** | 21.77 (553) | **90-50-725** |
| **-53** | 22.24 (565) | **90-50-750** |
| **-55** | 22.76 (578) | **90-50-750** |
| **-60** | 26.18 (665) | **90-50-800** |

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 90-30**
- 1/2 travel length glide bars
  **Part No. 90-31**
- Installation sets as end connectors
  **Part No. 90-50-XX**

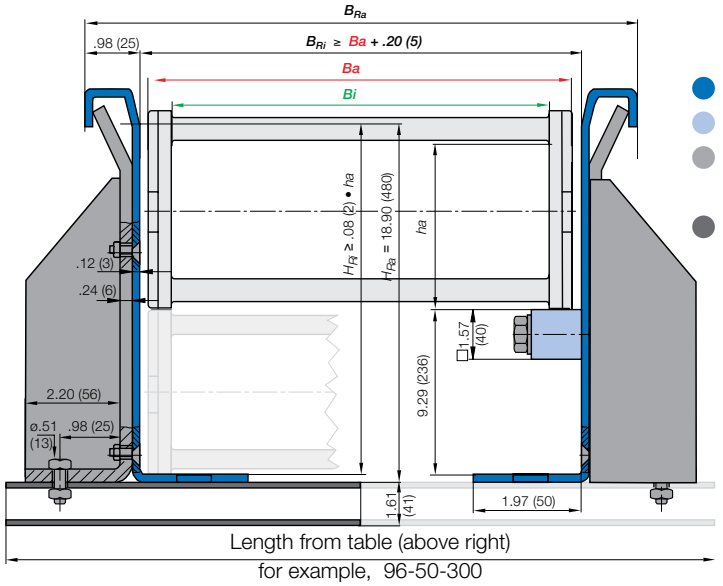
**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. Standard length of the trough components and glide bars is 6.56 ft (2m).
The required overall length of the guide trough directly correlates to the length of travel.
**Example:**

Length of travel 164 ft (50m)
Center mounted

**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of (2 m) guide trough without glide bars **Part No. 90-30**
= 13 section of (2 m) guide troughs with glide bars **Part No. 90-31**
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**90-50-XXX**
**Example:**
90-50-400 for (400 m) long profile rail

**Left: Guide trough with glide bars Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

**For further technical information on guide troughs**
**➤ Chapter 9**

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# E-Chain System® E4-1
# Series E4-350



## Price Index

Series E4-350

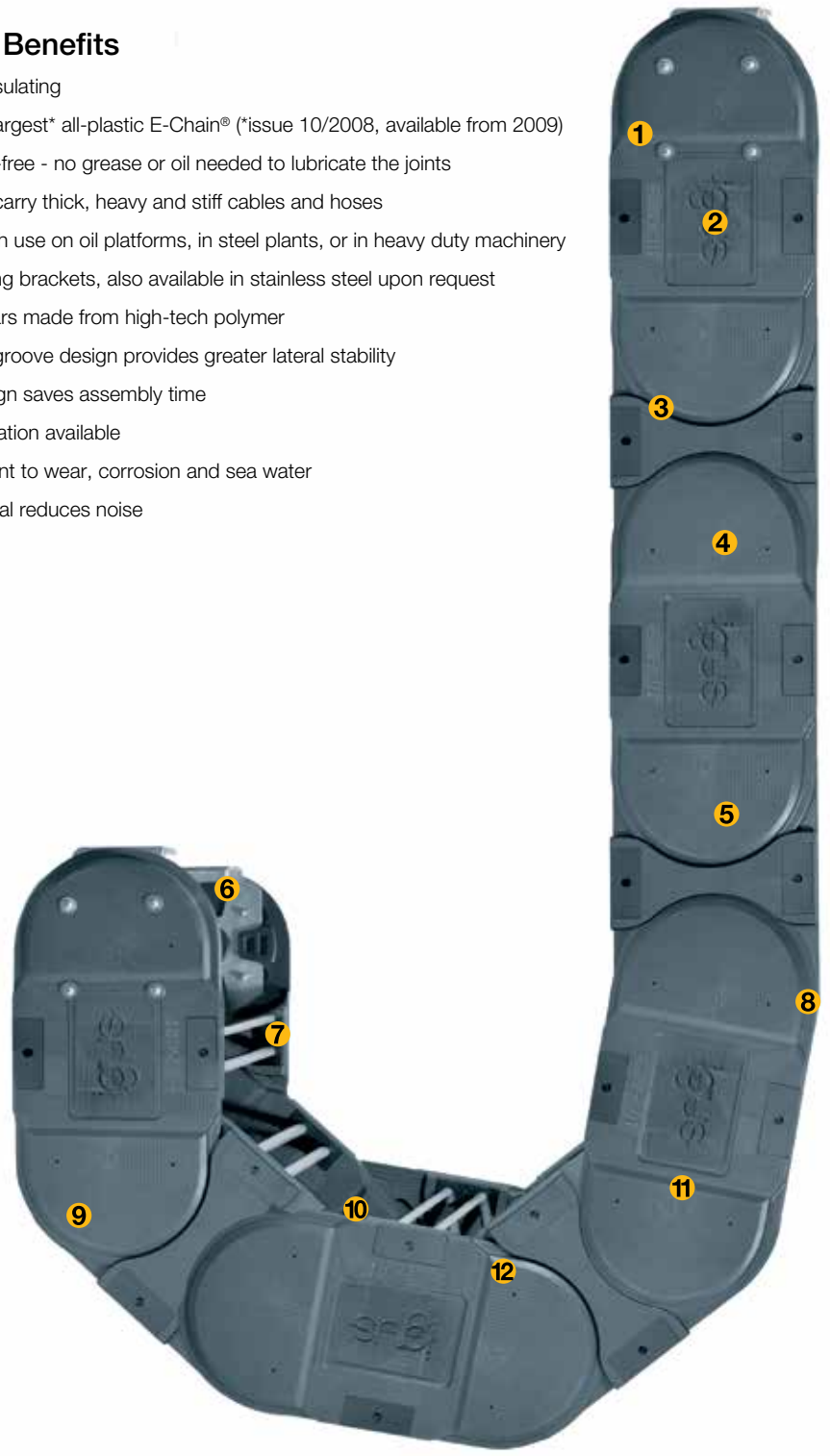
## Special Options Available

Very high fill weights possible > 100 kg/m

Very huge interior, inner height 13.78" (350 mm), inner width up to 39.37" (1000 mm)

## Features & Benefits

1. Electrically insulating
2. The world's largest* all-plastic E-Chain® (*issue 10/2008, available from 2009)
3. Maintenance-free - no grease or oil needed to lubricate the joints
4. Designed to carry thick, heavy and stiff cables and hoses
5. Ideal for rough use on oil platforms, in steel plants, or in heavy duty machinery
6. Steel mounting brackets, also available in stainless steel upon request
7. Solid crossbars made from high-tech polymer
8. Tongue and groove design provides greater lateral stability
9. Modular design saves assembly time
10. Interior separation available
11. Highly resistant to wear, corrosion and sea water
12. Plastic material reduces noise




## Usage Guidelines

- If a maintenance-free offshore E-Chain® is required
- If no use of oil and grease is needed
- If electrical insulation is necessary
- If resistance to corrosion and sea water is required
- If 100% plastics is the first choice for your application

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E4-350-200-500-0** | **E-Chain®** |
| With 2 separators **351-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-350100-1-12** | **Mounting Bracket** |

# E-Chain System® E4-1
# Series E4-350
# Installation Dimensions

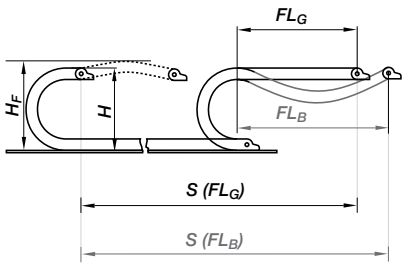


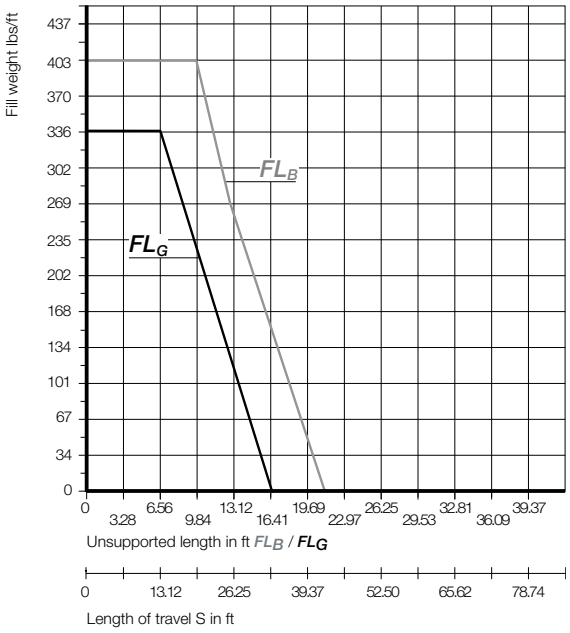
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information**

➤ **Design, Chapter 1**



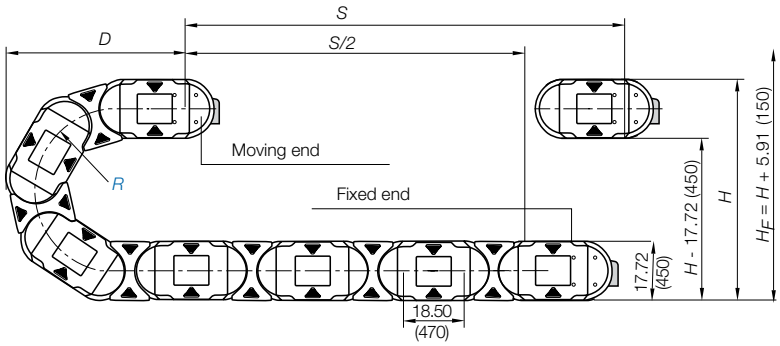




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** 18.50" (470 mm)
**Links per ft (m): =** .64 (2)
**For center mount applications:**
**Chain length =** $\frac{S}{2}$ + K

The required clearance height: $H_F = H$ + 5.91 in. (150 mm)

| *R* | 19.69 (500) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|
| *H** | 57.09 (1450) | 76.77 (1950) | 96.46 (2450) |
| *D* | 56.30 (1430) | 66.14 (1680) | 75.98 (1930) |
| *K* | 99.02 (2515) | 129.92 (3300) | 160.83 (4085) |

| | |
|---|---|
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

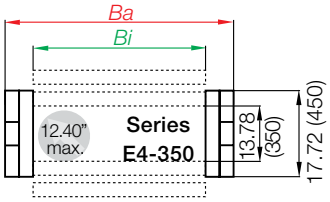
## Technical Data

Details of material properties
➤ **Chapter 1**

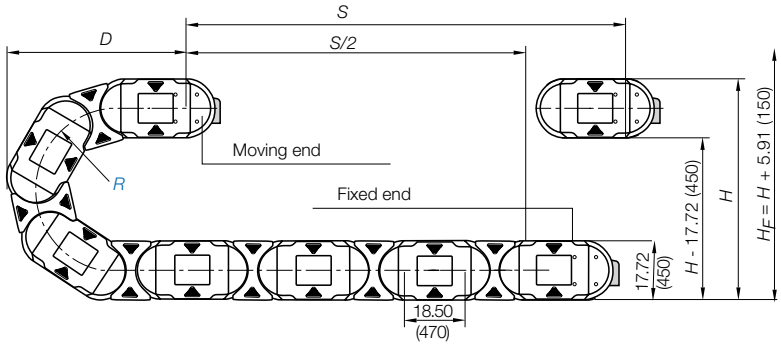
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-350

## Series E4-350 - E-Chain® with crossbars every link



- Crossbars every link
- For rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides




**Part Number Structure**

E4-350- 400- 500- 0

- 0 — Color - Black
- 500 — Bending radius
- 400 — Width
- E4-350 — Series

Supplement part number with required radius. Example: E4-350-200-500-0
Pitch: 18.50 in. (470 mm) per link links/ft(m) = .64 (2)

| Part Number. Crossbars Every link | | Bi in. (mm) | Ba in. (mm) | E4-350(61.9) lbs/ft (kg/m) |
|---|---|---|---|---|
| E4-350-400 - | -0 | 15.75 (400) | 21.26 (540) | 41.59 (61.9) |
| E4-350-500 - | -0 | 19.69 (500) | 25.20 (640) | 44.15 (65.7) |
| E4-350-600- | -0 | 23.62 (600) | 29.13 (740) | 46.77 (69.6) |
| E4-350-700 - | -0 | 27.56 (700) | 33.07 (840) | 49.32 (73.4) |
| E4-350-800 - | -0 | 31.50 (800) | 37.01 (940) | 51.88 (77.2) |

Choose from the radii below for all of the above sizes
Radius (mm) Example: E4-350-400-500-0

| | 500 | 750 | 1000 |
|---|---|---|---|
| R | 19.69 (500) | 29.53 (750) | 39.37 (1000) |
| H* | 57.09 (1450) | 76.77 (1950) | 96.46 (2450) |
| D | 56.30 (1430) | 66.14 (1680) | 75.98 (1930) |
| K | 99.02 (2515) | 129.92 (3300) | 160.83 (4085) |

0 = Standard color black. For other colors see Chapter 1

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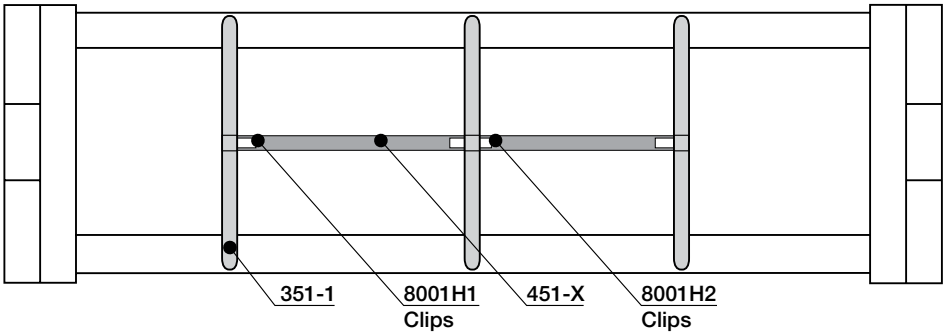
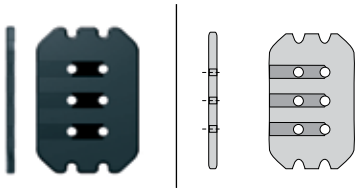
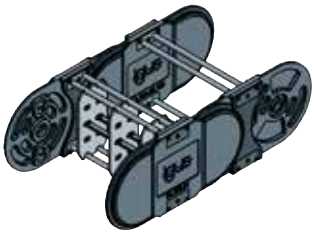
# E-Chain System® E4-1
# Series E4-350
# Interior Separation



**Separator for vertical subdivision**
For a vertical subdivision in 3 positions

| | |
|---|---|
| unassembled | 350.1 |
| assembled | 351.1 |



Heavy duty interior separation for cable-safe guidance

**Shelf for horizontal subdivision**
For horizontal separation with clip separators for vertical subdivision. Horizontal shelves of various widths can be arranged at 3 different positions

| | |
|---|---|
| unassembled | 450-X |
| assembled | 451-X |

| Width X in. (mm) | Part No. unassembled | Part No. assembled | Width X in. (mm) | Part No. unassembled | Part No. assembled |
|---|---|---|---|---|---|
| 1.97 (50) | **450-50** | **451-50** | 12.28 (312) | **450-312** | **451-312** |
| 2.56 (65) | **450-65** | **451-65** | 12.80 (325) | **450-325** | **451-325** |
| 2.95 (75) | **450-75** | **451-75** | 13.27 (337) | **450-337** | **451-337** |
| 3.43 (87) | **450-87** | **451-87** | 13.78 (350) | **450-350** | **451-350** |
| 3.94 (100) | **450-100** | **451-100** | 14.25 (362) | **450-362** | **451-362** |
| 4.41 (112) | **450-112** | **451-112** | 14.76 (375) | **450-375** | **451-375** |
| 4.92 (125) | **450-125** | **451-125** | 15.24 (387) | **450-387** | **451-387** |
| 5.39 (137) | **450-137** | **451-137** | 15.75 (400) | **450-400** | **451-400** |
| 5.91 (150) | **450-150** | **451-150** | 16.22 (412) | **450-412** | **451-412** |
| 6.38 (162) | **450-162** | **451-162** | 16.73 (425) | **450-425** | **451-425** |
| 6.89 (175) | **450-175** | **451-175** | 17.20 (437) | **450-437** | **451-437** |
| 7.36 (187) | **450-187** | **451-187** | 17.72 (450) | **450-450** | **451-450** |
| 7.87 (200) | **450-200** | **451-200** | 18.19 (462) | **450-462** | **451-462** |
| 8.34 (212) | **450-212** | **451-212** | 18.70 (475) | **450-475** | **451-475** |
| 8.85 (225) | **450-225** | **451-225** | 19.17 (487) | **450-487** | **451-487** |
| 9.33 (237) | **450-237** | **451-237** | 19.69 (500) | **450-500** | **451-500** |
| 9.84 (250) | **450-250** | **451-250** | 20.16 (512) | **450-512** | **451-512** |
| 10.31 (262) | **450-262** | **451-262** | 20.67 (525) | **450-525** | **451-525** |
| 10.83 (275) | **450-275** | **451-275** | 21.14 (537) | **450-537** | **451-537** |
| 11.30 (287) | **450-287** | **451-287** | 21.65 (550) | **450-550** | **451-550** |
| 11.81 (300) | **450-300** | **451-300** | 23.62 (600) | **450-600** | **451-600** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1
# Series E4-350

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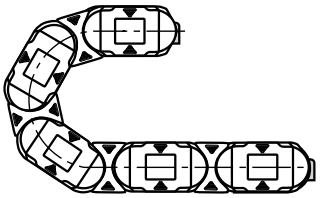
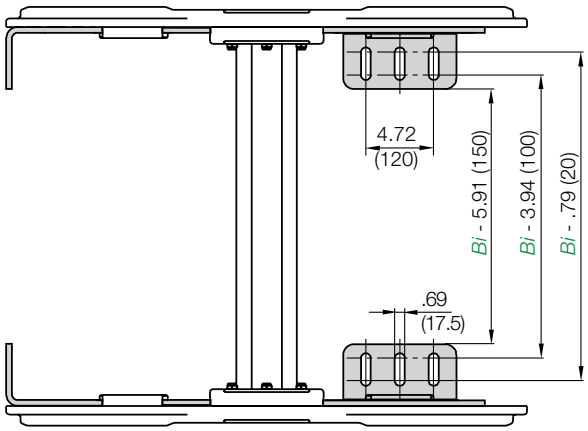
Moving end

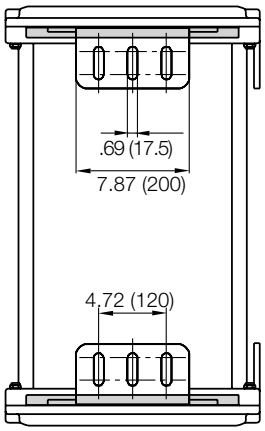


Fixed end

E4-350100-1
Moving end




E4-350100-1
Fixed end

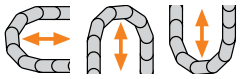



## Steel mounting brackets

| | |
|---|---|
| **E4-350100-1-12**-SS | Full set (both sides) for E-Chain®, |
| | ending with outer side link (4 pieces) |
| **E4-350100-1**-SS | Mounting bracket set (one side) |
| | for outer side link (2 pieces) |

Stainless steel version available please add suffix **-SS**
(Material: stainless steel 1.4301)

**Note:** By ordering steel mounting brackets in combination with an E-Chain® / E-Tube, they will be delivered assembled!



- For pivoting connections
- Secure connection
- One part (two-piece) for all E-Chain® widths
- Electrically conductive

Robust steel mounting bracket for secure mounting and connection

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Fax 1-401-438-7270

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email: sales@igus.com
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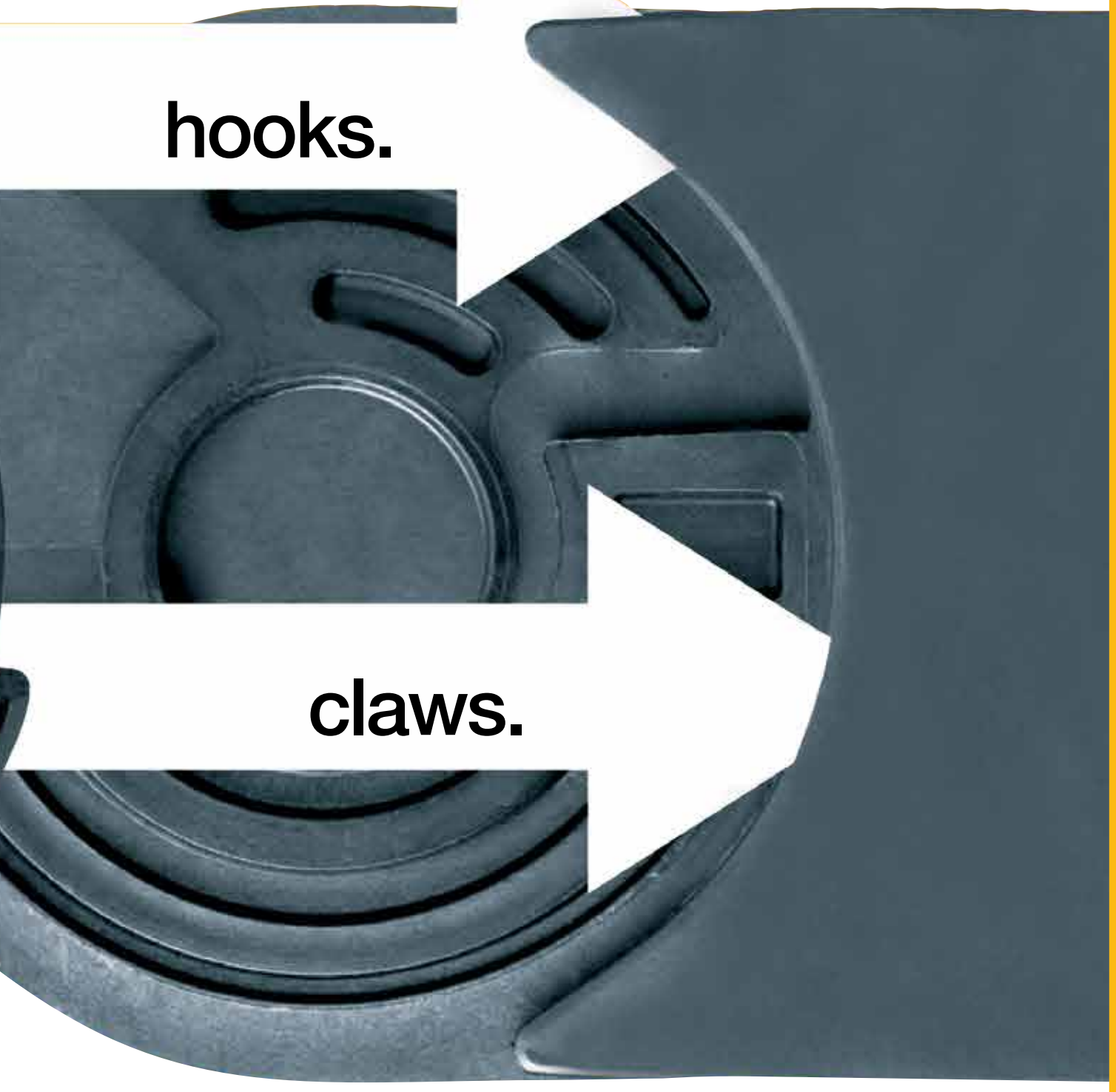
hooks.



claws.

# igus®
# E4/Light

# E4/light - stable, lightweight and cost-effective

System E4/Light – E4 ‘light’ features smaller side links (all sizes and styles) and thinner crossbars (specifically styles 14240 and 14340) when compared to igus®’ standard E4 cable carriers. It’s cost-effective, lightweight and still offers a large interior space for multiple cables and hoses. E4 light works especially for un-supported, short travel applications and is also ideal in hanging and short-standing designs.

**Typical industries and applications**

- Machine tools
- Material handling
- Stone cutting machines
- Woodworking machines
- General machinery
- Vehicles
- Construction machinery
- Limited long travel applications

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) “Rear grip” achieves long-term electrical conductivity

Side-mounted - unsupported

High torsional rigidity

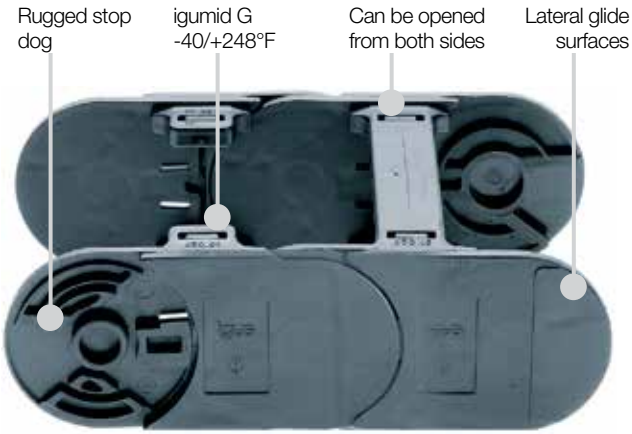
System E4/4 approved with long travels

E4/light E-Chains® and E-Tubes are ideal in Machine Tools

E4/light is popular for
hanging applications

With the space-saving igus® E4 Polymer E-Chains® the overall dimension for the installation for this crane system was considerably reduced

# E-Chain System® E4 Light Selection Guide




## E4/light version with the approved E4/4 Series undercut design

- Lightweight
- Optimized ratio of interior and exterior dimension
- Cost-effective
- Numerous interior separation possibilities
- Wide range of modular accessories
- Narrow outer links
- Maximum stability in the igus® range
- Maximum travel: 492 - 820 ft (150 - 250 m)
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Crossbars every link
for particularly demanding applications

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) |
|---|---|---|---|---|---|
| **14040** | 2.20 (56) | 1.97-23.62 (50-600) | 2.99-24.65 (76-626) | 3.31 (84) | 5.31-19.69 (135-500) |
| **14240** | 2.44 (62) | 1.97-15.75 (50-400) | 2.99-16.77 (76-426) | 3.31 (84) | 5.31-19.69 (135-500) |
| **14550** | 2.76 (70) | 1.97-23.62 (50-600) | 3.03-24.69 (77-627) | 3.86 (98) | 5.91-23.62 (150-600) |
| **15050** | 3.15 (80) | 1.97-23.62 (50-600) | 3.15-24.80 (80-630) | 4.25 (108) | 5.91-19.69 (150-500) |
| **15250** | 3.39 (86) | 1.97-23.62 (50-400) | 3.15-16.93 (80-430) | 4.25 (108) | 5.91-23.62 (150-600) |
| **1640** | 4.41 (112) | 1.97-23.62 (50-600) | 3.31-24.96 (84-634) | 5.51 (140) | 7.87-23.62 (200-600) |

## Crossbars every 2nd link
for almost all applications

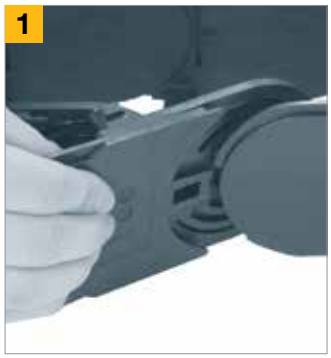
| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) |
|---|---|---|---|---|---|
| **14140** | 2.20 (56) | 1.97-23.62 (50-600) | 2.99-24.65 (76-626) | 3.31 (84) | 5.31-19.69 (135-500) |
| **14340** | 2.44 (62) | 1.97-15.75 (50-400) | 2.99-16.77 (76-426) | 3.31 (84) | 5.31-19.69 (135-500) |
| **14650** | 2.76 (70) | 1.97-23.62 (50-600) | 3.03-24.69 (77-627) | 3.86 (98) | 5.91-23.62 (150-600) |
| **15150** | 3.15 (80) | 1.97-23.62 (50-600) | 3.15-24.80 (80-630) | 4.25 (108) | 5.91-19.69 (150-500) |
| **15350** | 3.39 (86) | 1.97-23.62 (50-400) | 3.15-16.93 (80-430) | 4.25 (108) | 5.91-23.62 (150-600) |

## E-Tubes
fully enclosed, excellent cable protection
Available for certain widths and radii

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) |
|---|---|---|---|---|---|
| **R18840** | 2.20 (56) | 2.95-18.19 (75-462) | 3.98-19.25 (101-489) | 3.31 (84) | 5.91-19.69 (150-500) |
| **R19050** | 2.76 (70) | 2.95-18.19 (75-462) | 4.01-19.25 (102-489) | 3.86 (98) | 7.87-23.62 (200-600) |
| **R19850** | 3.15 (80) | 2.95-18.19 (75-462) | 4.13-19.41 (105-493) | 4.25 (108) | 7.87-19.69 (200-500) |
| **R1608** | 4.25 (108) | 7.87-19.69 (200-500) | 9.21-17.09 (234-434) | 5.51 (140) | 9.84-23.62 (250-600) |

# E-Chain System® E4 Light
# Assembly instructions

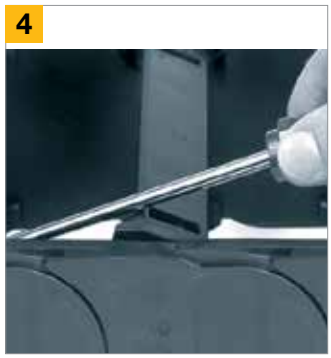
## E-Chains® and E-Tubes - Assembling




Position at one side ...

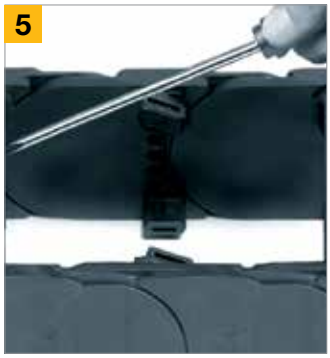
... and snap in

Position opposite side.
Press together and snap in




Assemble crossbars - push down and snap in using a screwdriver

## Assembling continued

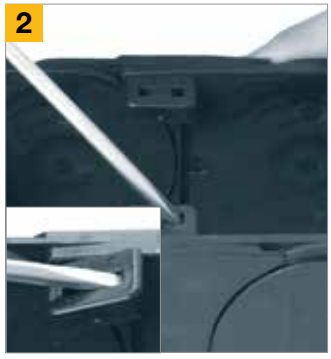



Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screwdriver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

## E-Chains® - Opening

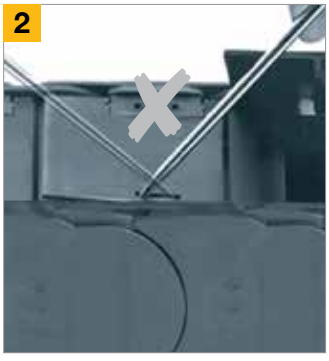
Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.




Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

## E-Tube - Opening

Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release




Release only **one side** to open the lid

## E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

14040
14140
R18840

# E-Chain System® E4 Light
# Series 14040/14140/R18840

2.20” 2.20”

## Price Index

Series 14040

Series 14140

Series R18840

## Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

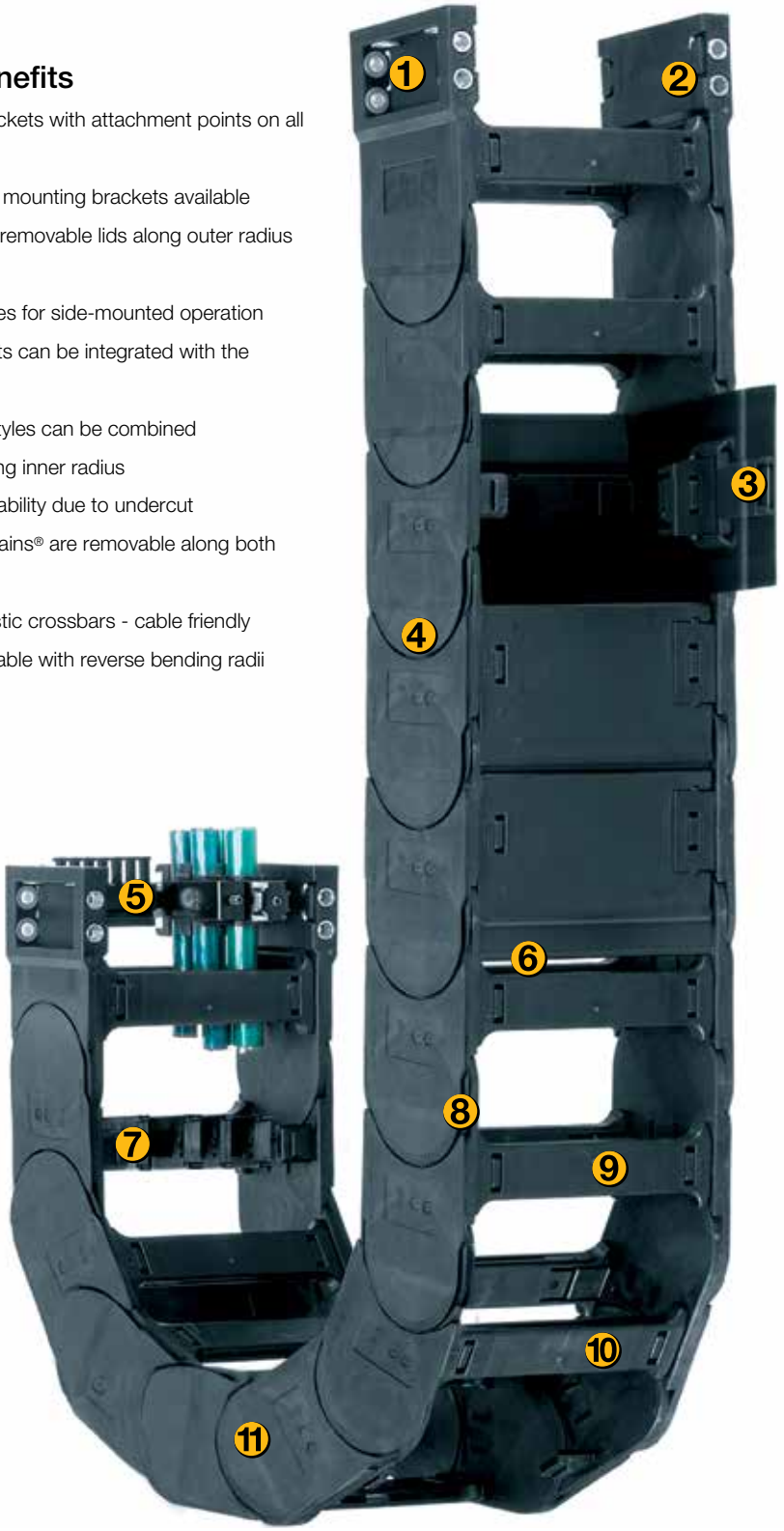
## Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-52**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Closed and open styles can be combined
7. Removable lids along inner radius
8. High side-mount stability due to undercut
9. Crossbars on E-Chains® are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

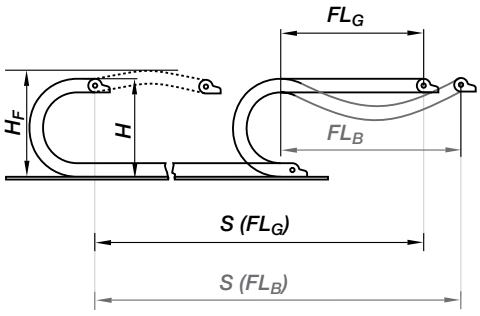
| | |
|---|---|
| 16.4 ft (5 m) **14040-30-300-0** | **E-Chain®** |
| With 2 separators **411** assembled every 2nd link | **Interior Separation** |
| 1 Set **141400-30-12P** | **Mounting Bracket** |

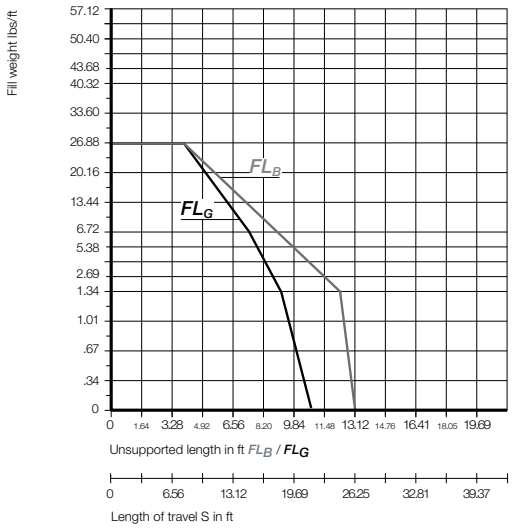
# E-Chain System® E4 Light Series 14040/14140/R18840 Installation Dimensions

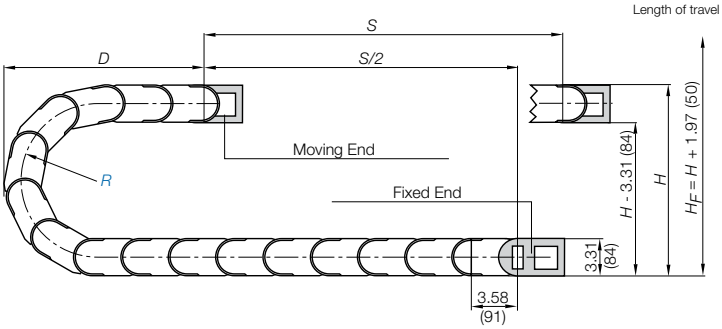
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

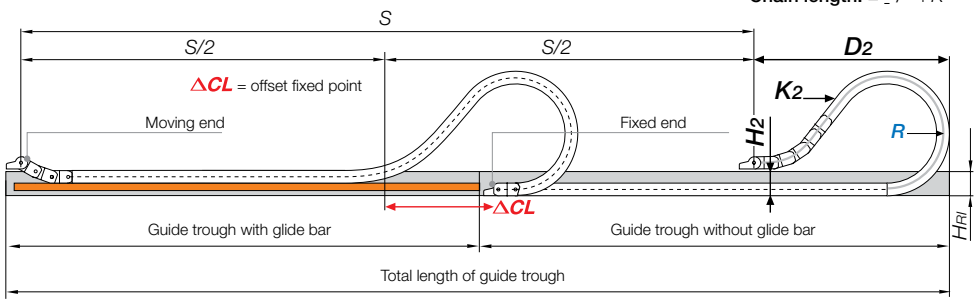
The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|
| $H^{-0}_{+25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 23.03 (585) | 26.97 (685) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 41.34 (1050) | 48.23 (1225) | 57.09 (1450) | 69.88 (1775) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)**

**For center mount applications:**
**Chain length =** $^{S}/_{2} + K_2$




| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2^{+25}$ | 15.35 (390) | 17.72 (450) | 20.87 (530) | 27.95 (710) | 36.22 (920) | 44.09 (1120) | 60.24 (1530) | 72.05 (1830) |
| $K_2$ | 28.66 (728) | 32.24 (819) | 39.41 (1001) | 50.16 (1274) | 64.49 (1638) | 75.23 (1911) | 100.31 (2548) | 125.39 (3185) |
| ΔCL | 4.88 (124) | 6.26 (159) | 8.22 (209) | 14.13 (359) | 20.04 (509) | 25.94 (659) | 37.76 (959) | 45.63 (1159) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties ➤ **Chapter 1**

14040
14140
R18840

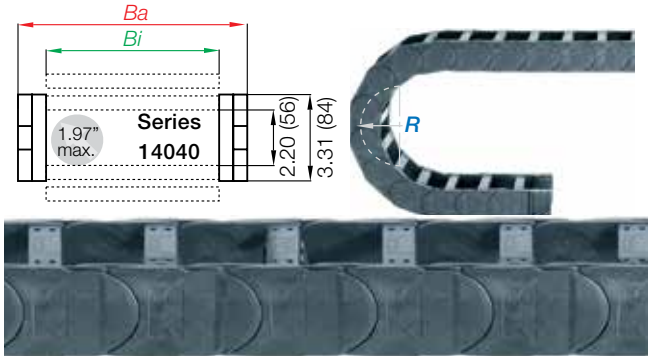
2.20"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14040/14140/R18840

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 14040 - E-Chain® with crossbars every link

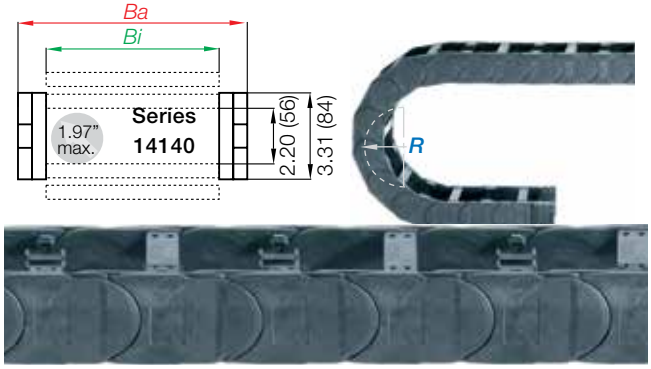



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 14040- | 30- | 250- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## Series 14140 - E-Chain® with crossbars every other link

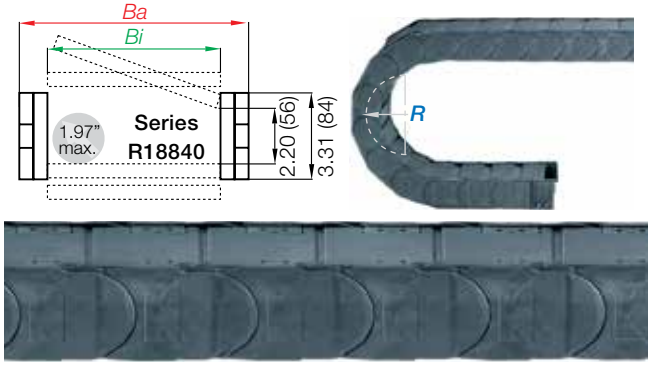



- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 14140- | 30- | 250- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## Series R18840 - fully enclosed E-Tube

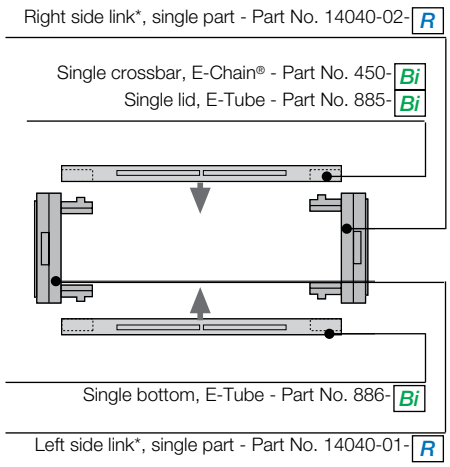


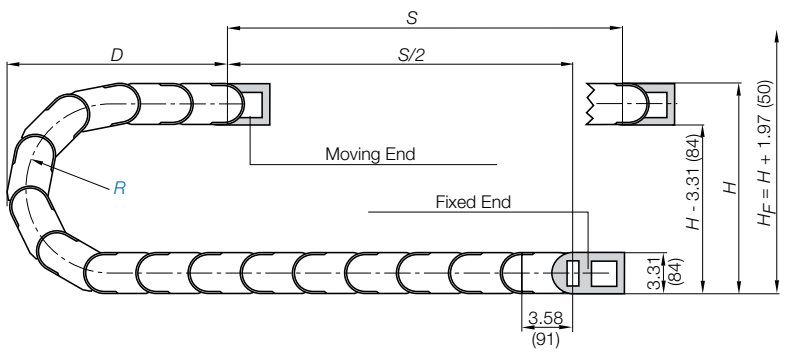

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 18840- | 30- | 250- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4 Light
# Series 14040/14140/R18840

Supplement part number with required radius. Example: 14040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | Bi in. (mm) | Ba in. (mm) | 14040 lbs/ft (kg/m) | 14140 lbs/ft (kg/m) | R18840 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 14040-05- | 14140-05- | | -0 | 1.97 (50) | 2.99 (76) | ≈ 1.79 (2.66) | ≈ 1.67 (2.48) | – |
| 14040-06- | 14140-06- | | -0 | 2.56 (65) | 3.58 (91) | ≈ 1.66 (2.47) | ≈ 1.69 (2.51) | – |
| 14040-07- | 14140-07- | 18840-07- | -0* | 2.95 (75) | 3.98 (101) | ≈ 1.85 (2.75) | ≈ 1.51 (2.25) | ≈ 2.15 (3.20) |
| 14040-08- | 14140-08- | | -0 | 3.43 (87) | 4.45 (113) | ≈ 1.91 (2.84) | ≈ 1.61 (2.44) | – |
| 14040-10- | 14140-10- | 18840-10- | -0 | 3.94 (100) | 4.96 (126) | ≈ 1.97 (2.93) | ≈ 1.75 (2.61) | ≈ 2.35 (3.49) |
| 14040-11- | 14140-11- | | -0 | 4.41 (112) | 5.47 (139) | ≈ 2.06 (3.06) | ≈ 1.79 (2.67) | – |
| 14040-12- | 14140-12- | 18840-12- | -0 | 4.92 (125) | 5.94 (151) | ≈ 2.10 (3.12) | ≈ 1.82 (2.71) | ≈ 2.59 (3.85) |
| 14040-13- | 14140-13- | | -0 | 5.39 (137) | 6.46 (164) | ≈ 2.19 (3.26) | ≈ 1.86 (2.77) | – |
| 14040-15- | 14140-15- | 18840-15- | -0 | 5.91 (150) | 6.93 (176) | ≈ 2.23 (3.32) | ≈ 1.89 (2.81) | ≈ 2.88 (4.28) |
| 14040-16- | 14140-16- | | -0 | 6.38 (162) | 7.44 (189) | ≈ 2.30 (3.43) | ≈ 1.92 (2.86) | – |
| 14040-17- | 14140-17- | 18840-17- | -0 | 6.89 (175) | 7.91 (201) | ≈ 2.38 (3.54) | ≈ 1.96 (2.92) | ≈ 3.05 (4.54) |
| 14040-18- | 14140-18- | | -0 | 7.36 (187) | 8.43 (214) | ≈ 2.45 (3.65) | ≈ 2.00 (2.97) | – |
| 14040-20- | 14140-20- | 18840-20- | -0 | 7.87 (200) | 8.90 (226) | ≈ 2.47 (3.67) | ≈ 2.00 (2.98) | ≈ 3.26 (4.85) |
| 14040-21- | 14140-21- | | -0 | 8.35 (212) | 9.41 (239) | ≈ 2.54 (3.78) | ≈ 2.04 (3.04) | – |
| 14040-22- | 14140-22- | | -0 | 8.86 (225) | 9.88 (251) | ≈ 2.59 (3.85) | ≈ 2.06 (3.07) | – |
| 14040-23- | 14140-23- | | -0 | 9.33 (237) | 10.39 (264) | ≈ 2.67 (3.98) | ≈ 2.11 (3.14) | – |
| 14040-25- | 14140-25- | 18840-25- | -0 | 9.84 (250) | 10.87 (276) | ≈ 2.73 (4.07) | ≈ 2.14 (3.18) | ≈ 3.75 (5.58) |
| 14040-26- | 14140-26- | | -0 | 10.31 (262) | 11.38 (289) | ≈ 2.80 (4.16) | ≈ 2.16 (3.22) | – |
| 14040-27- | 14140-27- | 18840-27- | -0 | 10.83 (275) | 11.85 (301) | ≈ 2.87 (4.27) | ≈ 2.20 (3.28) | ≈ 3.93 (5.85) |
| 14040-28- | 14140-28- | | -0 | 11.30 (287) | 12.36 (314) | ≈ 2.88 (4.29) | ≈ 2.21 (3.29) | – |
| 14040-30- | 14140-30- | 18840-30- | -0 | 11.81 (300) | 12.83 (326) | ≈ 3.03 (4.51) | ≈ 2.28 (3.40) | ≈ 4.19 (6.24) |
| 14040-31- | 14140-31- | | -0 | 12.28 (312) | 13.35 (339) | ≈ 3.07 (4.57) | ≈ 2.30 (3.42) | – |
| 14040-32- | 14140-32- | | -0 | 12.79 (325) | 13.82 (351) | ≈ 3.09 (4.60) | ≈ 2.31 (3.44) | – |
| 14040-33- | 14140-33- | | -0 | 13.27 (337) | 14.33 (364) | ≈ 3.21 (4.77) | ≈ 2.37 (3.53) | – |
| 14040-35- | 14140-35- | 18840-35- | -0 | 13.78 (350) | 14.80 (376) | ≈ 3.31 (4.93) | ≈ 2.43 (3.61) | ≈ 4.70 (6.99) |
| 14040-36- | 14140-36- | | -0 | 14.25 (362) | 15.31 (389) | ≈ 3.32 (4.94) | ≈ 2.43 (3.61) | – |
| 14040-37- | 14140-37- | | -0 | 14.76 (375) | 15.79 (401) | ≈ 3.33 (4.95) | ≈ 2.43 (3.62) | – |
| 14040-38- | 14140-38- | | -0 | 15.24 (387) | 16.30 (414) | ≈ 3.39 (5.04) | ≈ 2.46 (3.66) | – |
| 14040-40- | 14140-40- | 18840-40- | -0 | 15.75 (400) | 16.77 (426) | ≈ 3.52 (5.24) | ≈ 2.53 (3.76) | ≈ 5.34 (7.94) |
| 14040-41- | 14140-41- | | -0 | 16.22 (412) | 17.28 (439) | ≈ 3.62 (5.39) | ≈ 2.58 (3.84) | – |
| 14040-42- | 14140-42- | | -0 | 16.73 (425) | 17.76 (451) | ≈ 3.72 (5.54) | ≈ 2.63 (3.92) | – |
| 14040-43- | 14140-43- | | -0 | 17.20 (437) | 18.27 (464) | ≈ 3.77 (5.61) | ≈ 2.65 (3.95) | – |
| 14040-45- | 14140-45- | | -0 | 17.72 (450) | 18.74 (476) | ≈ 3.82 (5.68) | ≈ 2.67 (3.98) | – |
| 14040-46- | 14140-46- | 18840-46- | -0 | 18.19 (462) | 19.25 (489) | ≈ 3.83 (5.70) | ≈ 2.68 (3.99) | ≈ 5.64 (8.40) |
| 14040-47- | 14140-47- | | -0 | 18.70 (475) | 19.72 (501) | ≈ 3.92 (5.83) | ≈ 2.73 (4.06) | – |
| 14040-48- | 14140-48- | | -0 | 19.17 (487) | 20.24 (514) | ≈ 3.94 (5.86) | ≈ 2.74 (4.08) | – |
| 14040-50- | 14140-50- | | -0 | 19.69 (500) | 20.71 (526) | ≈ 4.00 (5.96) | ≈ 2.78 (4.13) | – |
| 14040-51- | 14140-51- | | -0 | 20.16 (512) | 21.22 (539) | ≈ 4.02 (5.98) | ≈ 2.78 (4.14) | – |
| 14040-52- | 14140-52- | | -0 | 20.67 (525) | 21.69 (551) | ≈ 4.05 (6.03) | ≈ 2.80 (4.16) | – |
| 14040-53- | 14140-53- | | -0 | 21.14 (537) | 22.20 (564) | ≈ 4.15 (6.18) | ≈ 2.85 (4.24) | – |
| 14040-55- | 14140-55- | | -0 | 21.65 (550) | 22.68 (576) | ≈ 4.48 (6.67) | ≈ 3.01 (4.48) | – |
| 14040-60- | 14140-60- | | -0 | 23.62 (600) | 24.65 (626) | ≈ 4.69 (6.98) | ≈ 3.08 (4.58) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 14040-30-300-0

| | 135** | 150 | 175 | 200 | 250 | 300 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|
| *R* | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
| $H^{0}_{+25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 23.03 (585) | 26.97 (685) | 34.84 (885) | 42.72 (1085) |
| *D* | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 21.06 (535) | 25.00 (635) |
| *K* | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 41.34 (1050) | 48.23 (1225) | 57.09 (1450) | 69.88 (1775) |

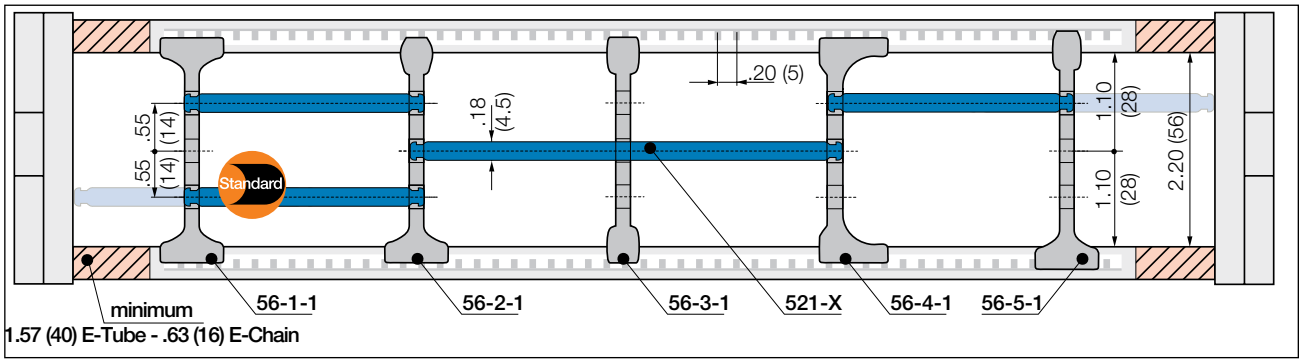
** This radius is not available for the R18840 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.124. For large diameter hoses see page 6.124

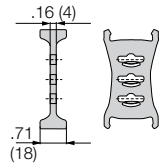
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



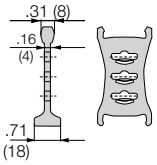

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 56-1** |
| Assembled | **Part No. 56-1-1** |

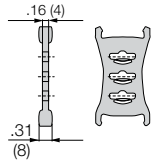
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 56-2** |
| Assembled | **Part No. 56-2-1** |

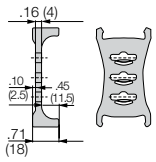
- **Separator 56-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 56-3** |
| Assembled | **Part No. 56-3-1** |

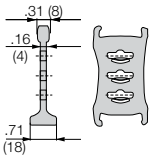
- **Separator 56-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-4** |
| Assembled | **Part No. 56-4-1** |

- **Separator 56-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

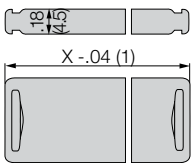



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-5** |
| Assembled | **Part No. 56-5-1** |

- **Separator 56-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

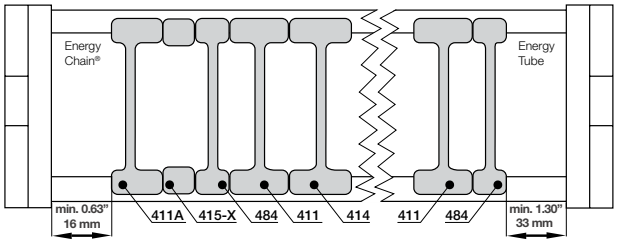
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.72 (450) | **520-450** | **521-450** |

# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Interior Separation - Previous Generation

## Option 1: Vertical separators and spacers

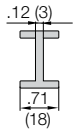
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Standard

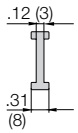
**STANDARD Vertical separator 401**




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 401** |
| Assembled | **Part No. 411** |

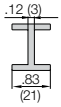
**Vertical separator 483**




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 483** |
| Assembled | **Part No. 484** |

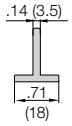
**Locking separator 404**




**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 404** |
| Assembled | **Part No. 414** |

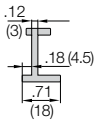
**Locking separator 406**




**Locking separator (tube only)**

| | |
|---|---|
| Unassembled | **Part No. 406** |
| Assembled | **Part No. 416** |

**Asymmetric separator 401A**




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 401A** |
| Assembled | **Part No. 411A** |

**Spacers 405-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39” | (10) |
| **405 -15** | **415 -15** | .59” | (15) |
| **405 -20** | **415 -20** | 79” | (20) |
| **405 -30** | **415 -30** | 1.18” | (30) |
| **405 -40** | **415 -40** | 1.57” | (40) |

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.
- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.
- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar
- **Asymmetrical separator 401A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

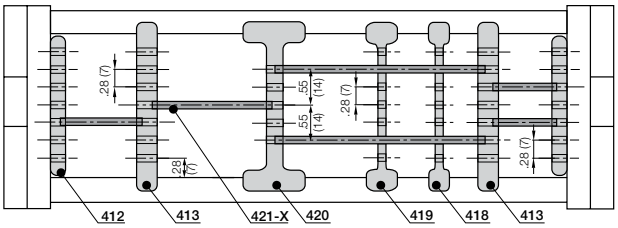
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

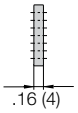
# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Interior Separation - Previous Generation

## Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

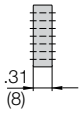





**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 402** |
| Assembled | **Part No. 412** |

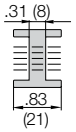
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 403** |
| Assembled | **Part No. 413** |

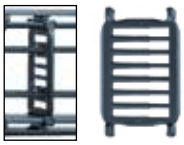
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

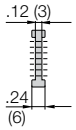



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 410** |
| Assembled | **Part No. 420** |

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

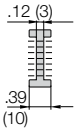





**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 408** |
| Assembled | **Part No. 418** |

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 409** |
| Assembled | **Part No. 419** |

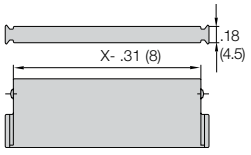
- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 (18) | .39 (10) | **420-18** | **421-18** |
| .91 (23) | .59 (15) | **420-23** | **421-23** |
| .98 (25) | .67 (17) | **420-25** | **421-25** |
| 1.10 (28) | .79 (20) | **420-28** | **421-28** |
| 1.30 (33) | .98 (25) | **420-33** | **421-33** |
| 1.69 (43) | 1.38 (35) | **420-43** | **421-43** |
| 1.97 (50) | 1.65 (42) | **420-50** | **421-50** |
| 2.44 (62) | 2.13 (54) | **420-62** | **421-62** |

| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.95 (75) | 2.64 (67) | **420-75** | **421-75** |
| 3.46 (88) | 3.15 (80) | **420-88** | **421-88** |
| 3.94 (100) | 3.62 (92) | **420-100** | **421-100** |
| 4.92 (125) | 4.61(117) | **420-125** | **421-125** |
| 5.91 (150) | 5.59(142) | **420-150** | **421-150** |
| 6.89 (175) | 6.57(167) | **420-175** | **421-175** |
| 7.36 (187) | 7.05(179) | **420-187** | **421-187** |
| 7.87 (200) | 7.56(192) | **420-200** | **421-200** |



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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

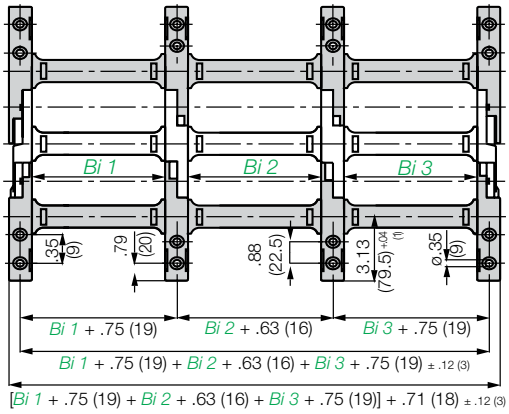
# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Special Accessories

Part number example for E-Chain®
**14040-10/20/10-** 200 **-0**
**14040-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

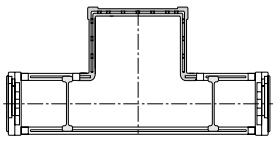
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



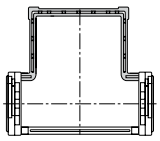
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

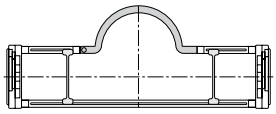
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



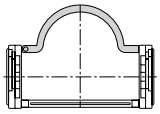
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.09 (180) | Square | Yes | No |
| **450-35-D250** | 7.68 (195) | Square | Yes | No |
| **450-40-D300** | 9.65 (245) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.09 (180) | Square | No | Yes |
| **450-30-HD250** | 7.68 (195) | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

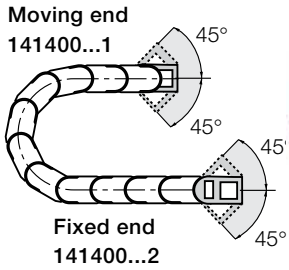
# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Mounting Brackets

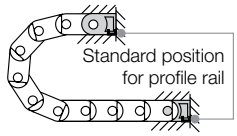
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: KMA pivoting

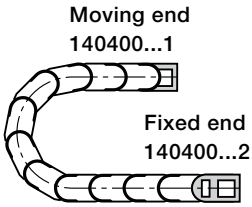
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

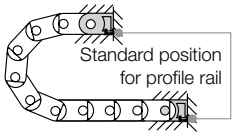





## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

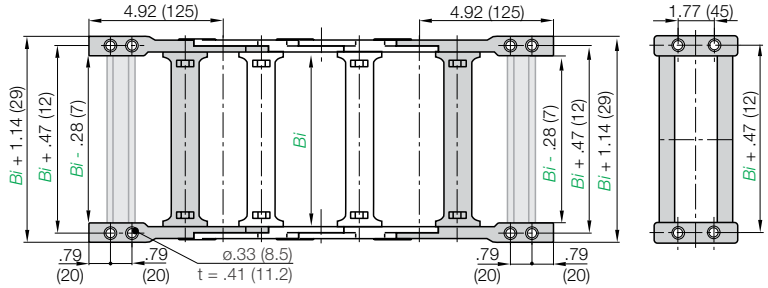





### Part Number Structure

140400- 07- 12 T P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 140400 = Locking
  141400 = Pivoting




**Full set, for both ends:**
140400- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**
140400- 05- 1 Mounting bracket **with bore**
140400- 05- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 140400**

**Part No. Full Set** (pivoting)
**Series 14040 or 14140:**
**141400-Width-12**

| Width | Part No. Full Set Locking | Pivoting | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05 | 140400 | 141400 | -05-12 | | P | 1.97 (50) |
| -06 | 140400 | 141400 | -06-12 | | P | 2.56 (65) |
| -07 | 140400 | 141400 | -07-12 | T | P | 2.95 (75) |
| -08 | 140400 | 141400 | -08-12 | | P | 3.43 (87) |
| -10 | 140400 | 141400 | -10-12 | T | P | 3.94 (100) |
| -11 | 140400 | 141400 | -11-12 | | P | 4.41 (112) |
| -12 | 140400 | 141400 | -12-12 | T | P | 4.92 (125) |
| -13 | 140400 | 141400 | -13-12 | | P | 5.39 (137) |
| -15 | 140400 | 141400 | -15-12 | T | P | 5.91 (150) |
| -16 | 140400 | 141400 | -16-12 | | P | 6.38 (162) |
| -17 | 140400 | 141400 | -17-12 | T | P | 6.89 (175) |
| -18 | 140400 | 141400 | -18-12 | | P | 7.36 (187) |
| -20 | 140400 | 141400 | -20-12 | T | P | 7.87 (200) |
| -21 | 140400 | 141400 | -21-12 | | P | 8.35 (212) |
| -22 | 140400 | 141400 | -22-12 | | P | 8.86 (225) |
| -23 | 140400 | 141400 | -23-12 | | P | 9.33 (237) |
| -25 | 140400 | 141400 | -25-12 | T | P | 9.84 (250) |
| -26 | 140400 | 141400 | -26-12 | | P | 10.31 (262) |
| -27 | 140400 | 141400 | -27-12 | T | P | 10.83 (275) |
| -28 | 140400 | 141400 | -28-12 | | P | 11.30 (287) |
| -30 | 140400 | 141400 | -30-12 | T | P | 11.81 (300) |

**Part No. Full Set** (pivoting)
**with profile rail**
**Series 14040 or 14140**
**141400-Width-12P**

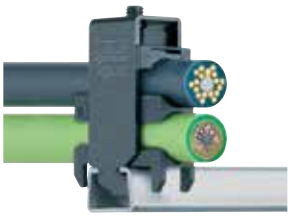
**Part No. Full Set** (pivoting)
**Tube Series R18840**
**141400-Width-12T**

| Width | Part No. Full Set Locking | Pivoting | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -31 | 140400 | 141400 | -31-12 | | P | 12.28 (312) |
| -32 | 140400 | 141400 | -32-12 | | P | 12.79 (325) |
| -33 | 140400 | 141400 | -33-12 | | P | 13.27 (337) |
| -35 | 140400 | 141400 | -35-12 | T | P | 13.78 (350) |
| -36 | 140400 | 141400 | -36-12 | | P | 14.25 (362) |
| -37 | 140400 | 141400 | -37-12 | | P | 14.76 (375) |
| -38 | 140400 | 141400 | -38-12 | | P | 15.24 (387) |
| -40* | 140400 | 141400 | -40-12 | T | P | 15.75 (400) |
| -41 | 140400 | 141400 | -41-12 | | P | 16.22 (412) |
| -42 | 140400 | 141400 | -42-12 | | P | 16.73 (425) |
| -43 | 140400 | 141400 | -43-12 | | P | 17.20 (437) |
| -45 | 140400 | 141400 | -45-12 | | P | 17.72 (450) |
| -46 | 140400 | 141400 | -46-12 | T | P | 18.19 (462) |
| -47 | 140400 | 141400 | -47-12 | | P | 18.70 (475) |
| -48 | 140400 | 141400 | -48-12 | | P | 19.17 (487) |
| -50 | 140400 | 141400 | -50-12 | | P | 19.69 (500) |
| -51 | 140400 | 141400 | -51-12 | | P | 20.16 (512) |
| -52 | 140400 | 141400 | -52-12 | | P | 20.67 (525) |
| -53 | 140400 | 141400 | -53-12 | | P | 21.14 (537) |
| -55 | 140400 | 141400 | -55-12 | | P | 21.65 (550) |
| -60 | 140400 | 141400 | -60-12 | | P | 23.62 (600) |

**Part No. Full Set** (pivoting)
**with Profile Rail**
**Tube Series R18840**
**141400-Width-12TP**

# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

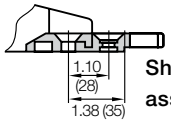
## Chainfix Clip

### Modular snap-on strain relief device

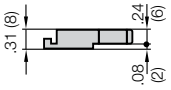
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

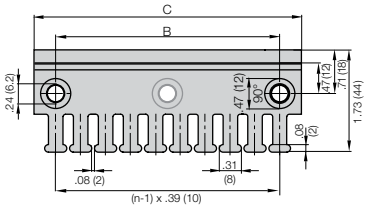



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14040/14140/R18840
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
14040-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.19 (81) | * |
| **-06** | 3.78 (96) | * |
| **-07** | 4.17 (106) | **94-50-225** |
| **-10** | 5.16 (131) | **94-50-250** |
| **-11** | 5.63 (143) | **94-50-275** |
| **-12** | 6.14 (156) | **94-50-275** |
| **-13** | 6.61 (168) | **94-50-300** |
| **-15** | 7.13 (181) | **94-50-300** |
| **-16** | 7.60 (193) | **94-50-325** |
| **-17** | 8.11 (206) | **94-50-325** |
| **-18** | 8.58 (218) | **94-50-350** |
| **-20** | 9.09 (231) | **94-50-350** |
| **-21** | 9.57 (243) | **94-50-375** |
| **-22** | 10.08 (256) | **94-50-375** |
| **-23** | 10.55 (268) | **94-50-400** |
| **-25** | 11.06 (281) | **94-50-400** |
| **-26** | 11.54 (293) | **94-50-425** |
| **-27** | 12.05 (306) | **94-50-425** |
| **-28** | 12.52 (318) | **94-50-450** |
| **-30** | 13.03 (331) | **94-50-450** |
| **-31** | 13.50 (343) | **94-50-475** |
| **-32** | 14.02 (356) | **94-50-475** |
| **-33** | 14.49 (368) | **94-50-500** |
| **-35** | 15.00 (381) | **94-50-500** |
| **-36** | 15.47 (393) | **94-50-525** |
| **-37** | 15.98 (406) | **94-50-525** |
| **-38** | 16.46 (418) | **94-50-550** |
| **-40** | 16.97 (431) | **94-50-550** |
| **-41** | 17.44 (443) | **94-50-575** |
| **-42** | 17.95 (456) | **94-50-575** |
| **-43** | 18.43 (468) | **94-50-600** |
| **-45** | 18.94 (481) | **94-50-600** |
| **-46** | 19.41 (493) | **94-50-625** |
| **-47** | 19.92 (506) | **94-50-625** |
| **-48** | 20.59 (518) | **94-50-650** |
| **-50** | 20.91 (531) | **94-50-650** |
| **-51** | 21.38 (543) | **94-50-675** |
| **-52** | 21.89 (556) | **94-50-675** |
| **-53** | 22.36 (568) | **94-50-700** |
| **-55** | 22.87 (581) | **94-50-700** |
| **-60** | 24.84 (631) | **94-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

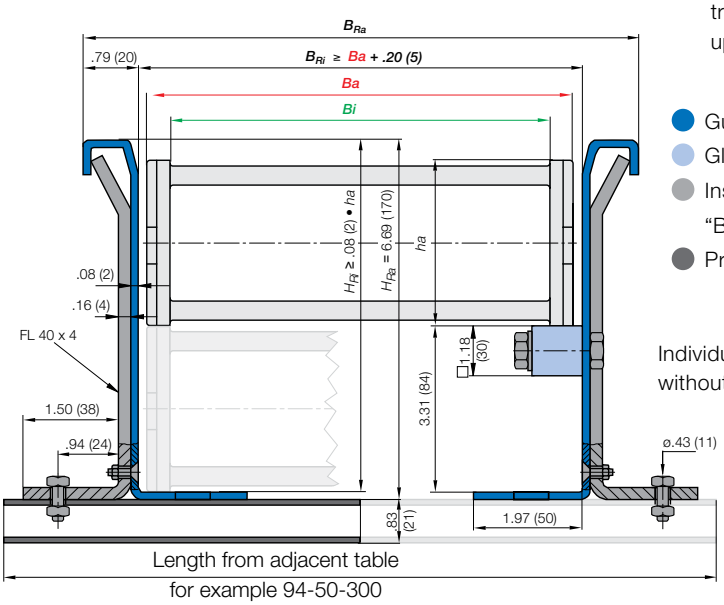
**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**
= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

Installation sets as section connectors

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

* Specialized guide trough available upon request




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

# E-Chain System® E4 Light
# Series 14240/14340

2.44"

## Price Index

Series 14240 | Series 14340

## Special Features / Options

- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity
- Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

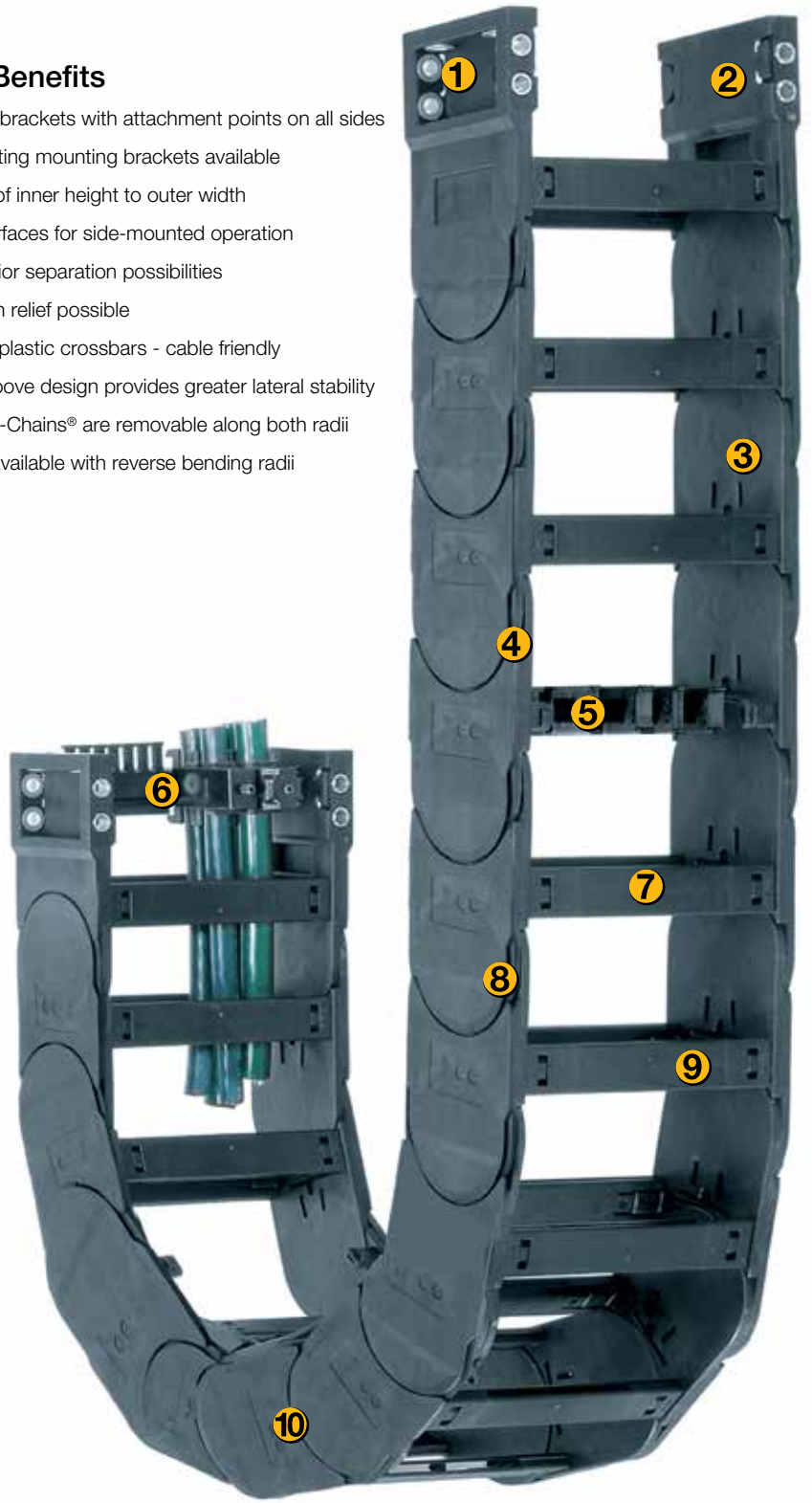
## Usage Guidelines

- If a simpler low-cost solution is required
- If optimized interior space is required
- If the Series 400 is too large

- If a quieter version is required
  ➤ **Series E6-62**
- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-56/H4-56/R4-56**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-56/H4-56/R4-56**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series 14040**
- If chip protection is necessary
  ➤ **Series 18840**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Optimum ratio of inner height to outer width
4. Lateral glide surfaces for side-mounted operation
5. Numerous interior separation possibilities
6. Integrated strain relief possible
7. Wide, rounded plastic crossbars - cable friendly
8. Tongue and groove design provides greater lateral stability
9. Crossbars on E-Chains® are removable along both radii
10. E-Chain® also available with reverse bending radii




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 19.69 ft (6 m) **14240-30-300-0** | **E-Chain®** |
| With 2 separators **417** assembled every 2nd link | **Interior Separation** |
| 1 Set **142400-30-12P** | **Mounting Bracket** |

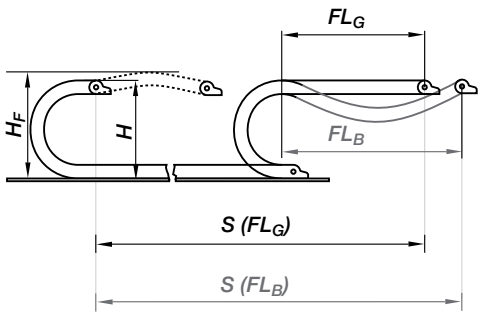
# E-Chain System® E4 Light
# Series 14240/14340
# Installation Dimensions

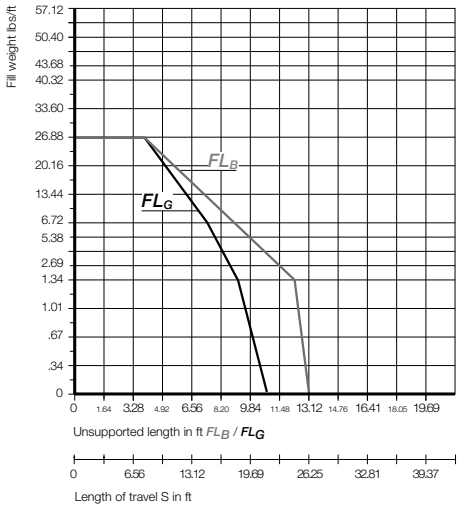
**Short travel, unsupported length**

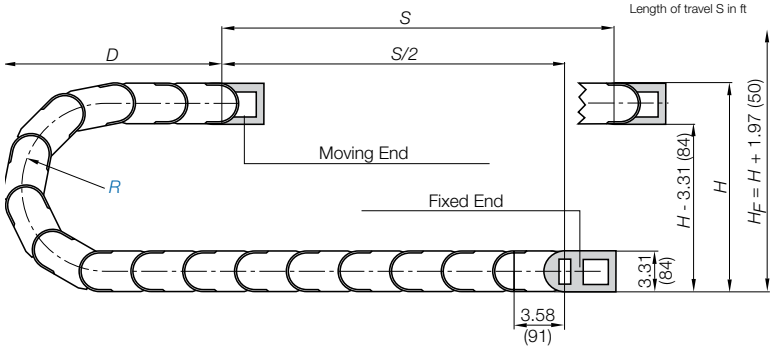
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

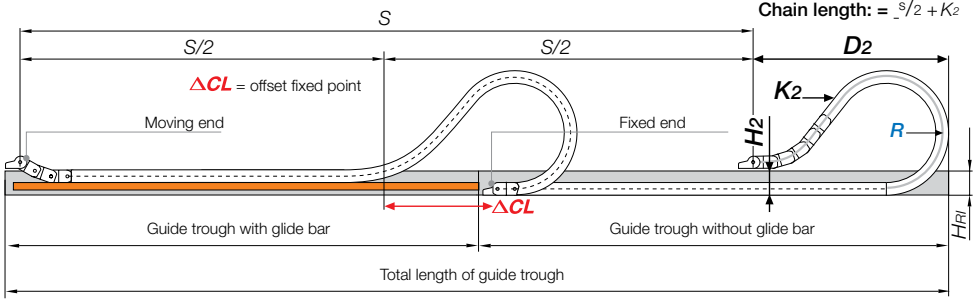
The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|
| $H^{0}_{+25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 23.03 (585) | 26.97 (685) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 41.34 (1050) | 48.23 (1225) | 57.09 (1450) | 69.88 (1775) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2$ +25 | 15.35 (390) | 17.72 (450) | 20.87 (530) | 27.95 (710) | 36.22 (920) | 44.09 (1120) | 60.24 (1530) | 72.05 (1830) |
| $K_2$ | 28.66 (728) | 32.24 (819) | 39.41 (1001) | 50.16 (1274) | 64.49 (1638) | 75.23 (1911) | 100.31 (2548) | 125.39 (3185) |
| ΔCL | 4.88 (124) | 6.26 (159) | 8.22 (209) | 14.13 (359) | 20.04 (509) | 25.94 (659) | 37.76 (959) | 45.63 (1159) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties
**➤ Chapter 1**

14240
14340

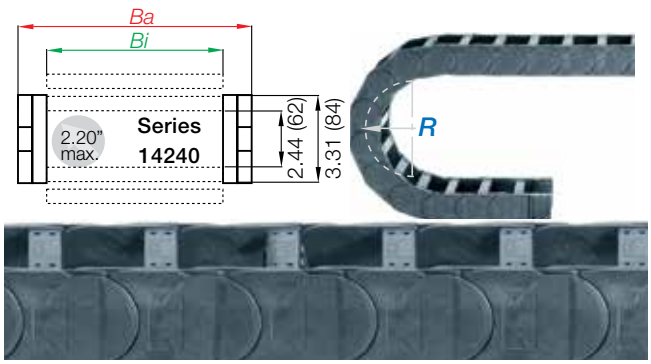
2.44"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14240/14340

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 14240 - E-Chain® with crossbars every link

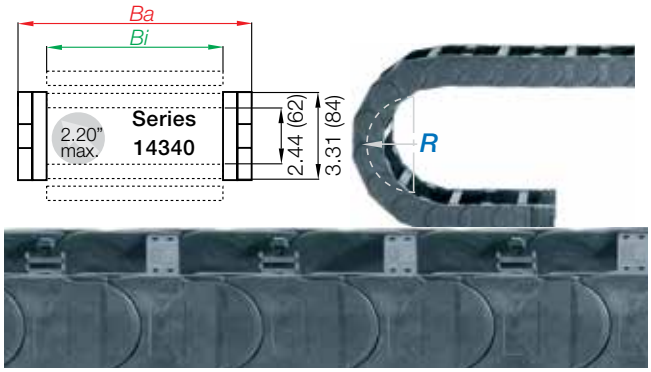



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 14240- | 12- | 250- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series 14340 - E-Chain® with crossbars every other link

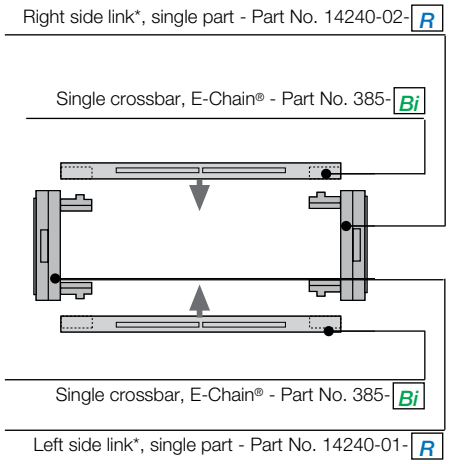


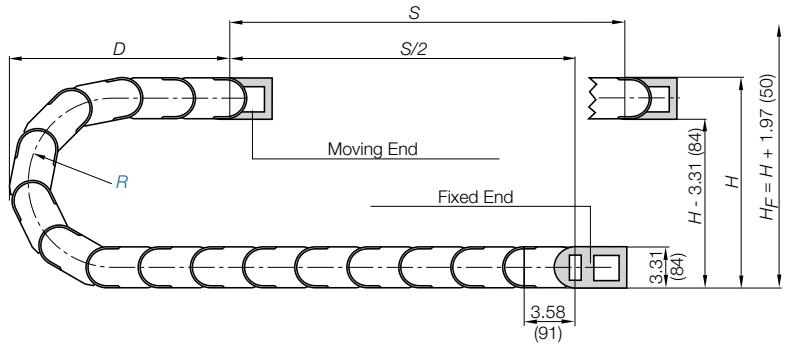

- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 14340- | 12- | 250- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4 Light
# Series 14240/14340

Supplement part number with required radius. Example: 14040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)



| Part Number. Crossbars Every link | Crossbars Every other | | | *Bi* in. (mm) | *Ba* in. (mm) | 14240 lbs/ft (kg/m) | 14340 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|
| 14240-05- | 14340-05- | | -0 | 1.97 (50) | 2.99 (76) | ≈1.59 (2.37) | ≈ 1.56 (2.32) |
| 14240-06- | 14340-06- | | -0 | 2.68 (68) | 3.70 (94) | ≈ 1.61 (2.40) | ≈ 1.57 (2.33) |
| 14240-07- | 14340-07- | | -0 | 2.95 (75) | 3.98 (101) | ≈ 1.63 (2.42) | ≈ 1.57 (2.34) |
| 14240-087- | 14340-087- | | -0 | 3.43 (87) | 4.49 (114) | ≈ 1.66 (2.47) | ≈ 1.59 (2.36) |
| 14240-10- | 14340-10- | | -0 | 3.94 (100) | 4.96 (126) | ≈ 1.69 (2.52) | ≈ 1.61 (2.39) |
| 14240-11- | 14340-11- | | -0 | 4.25 (108) | 5.28 (134) | ≈ 1.71 (2.55) | ≈ 1.61 (2.40) |
| 14240-112- | 14340-112- | | -0 | 4.41 (112) | 5.47 (139) | ≈ 1.71 (2.55) | ≈ 1.62 (2.41) |
| 14240-12- | 14340-12- | | -0 | 4.92 (125) | 5.94 (151) | ≈ 1.76 (2.62) | ≈ 1.64 (2.44) |
| 14240-137- | 14340-137- | | -0 | 5.39 (137) | 6.46 (164) | ≈ 1.79 (2.66) | ≈ 1.65 (2.46) |
| 14240-15- | 14340-15- | | -0 | 5.91 (150) | 6.93 (176) | ≈ 1.83 (2.72) | ≈ 1.67 (2.49) |
| 14240-162- | 14340-162- | | -0 | 6.38 (162) | 7.44 (189) | ≈ 1.83 (2.73) | ≈ 1.67 (2.49) |
| 14240-17- | 14340-17- | | -0 | 6.61 (168) | 7.64 (194) | ≈ 1.88 (2.79) | ≈ 1.69 (2.52) |
| 14240-18- | 14340-18- | | -0 | 6.89 (175) | 7.91 (201) | ≈ 1.90 (2.82) | ≈ 1.70 (2.53) |
| 14240-187- | 14340-187- | | -0 | 7.36 (187) | 8.43 (214) | ≈ 1.91 (2.84) | ≈ 1.71 (2.55) |
| 14240-20- | 14340-20- | | -0 | 7.87 (200) | 8.90 (226) | ≈ 1.94 (2.89) | ≈ 1.73 (2.58) |
| 14240-212- | 14340-212- | | -0 | 8.35 (212) | 9.41 (239) | ≈ 1.98 (2.95) | ≈ 1.75 (2.60) |
| 14240-23- | 14340-23- | | -0 | 8.86 (225) | 9.88 (251) | ≈ 2.02 (3.01) | ≈ 1.77 (2.63) |
| 14240-237- | 14340-237- | | -0 | 9.33 (237) | 10.39 (264) | ≈ 2.04 (3.04) | ≈ 1.78 (2.65) |
| 14240-25- | 14340-25- | | -0 | 9.84 (250) | 10.87 (276) | ≈ 2.08 (3.10) | ≈ 1.80 (2.68) |
| 14240-262- | 14340-262- | | -0 | 10.31 (262) | 11.38 (289) | ≈ 2.09 (3.11) | ≈ 1.81 (2.69) |
| 14240-28- | 14340-28- | | -0 | 10.83 (275) | 11.85 (301) | ≈ 2.14 (3.19) | ≈ 1.83 (2.72) |
| 14240-29- | 14340-29- | | -0 | 11.30 (287) | 12.36 (314) | ≈ 2.15 (3.20) | ≈ 1.83 (2.73) |
| 14240-30- | 14340-30- | | -0 | 11.81 (300) | 12.83 (326) | ≈ 2.22 (3.30) | ≈ 1.87 (2.78) |
| 14240-312- | 14340-312- | | -0 | 12.28 (312) | 13.35 (339) | ≈ 2.22 (3.31) | ≈ 1.88 (2.79) |
| 14240-325- | 14340-325- | | -0 | 12.79 (325) | 13.82 (351) | ≈ 2.26 (3.37) | ≈ 1.89 (2.81) |
| 14240-337- | 14340-337- | | -0 | 13.27 (337) | 14.33 (364) | ≈ 2.28 (3.40) | ≈ 1.90 (2.83) |
| 14240-350- | 14340-350- | | -0 | 13.78 (350) | 14.80 (376) | ≈ 2.39 (3.56) | ≈ 1.96 (2.91) |
| 14240-362- | 14340-362- | | -0 | 14.25 (362) | 15.31 (389) | ≈ 2.43 (3.61) | ≈ 1.97 (2.93) |
| 14240-375- | 14340-375- | | -0 | 14.76 (375) | 15.79 (401) | ≈ 2.45 (3.64) | ≈ 1.98 (2.95) |
| 14240-387- | 14340-387- | | -0 | 15.24 (387) | 16.30 (414) | ≈ 2.48 (3.69) | ≈ 2.00 (2.97) |
| 14240-400- | 14340-400- | | -0 | 15.75 (400) | 16.77 (426) | ≈ 2.51 (3.73) | ≈ 2.00 (2.99) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 14240-30-300-0

| | 135 | 150 | 175 | 200 | 250 | 300 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|
| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.68 (500) |
| H $^{0}_{\pm 25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 23.03 (585) | 26.97 (685) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 15.16 (385) | 17.13 (435) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 41.34 (1050) | 48.23 (1225) | 57.09 (1450) | 69.88 (1775) |

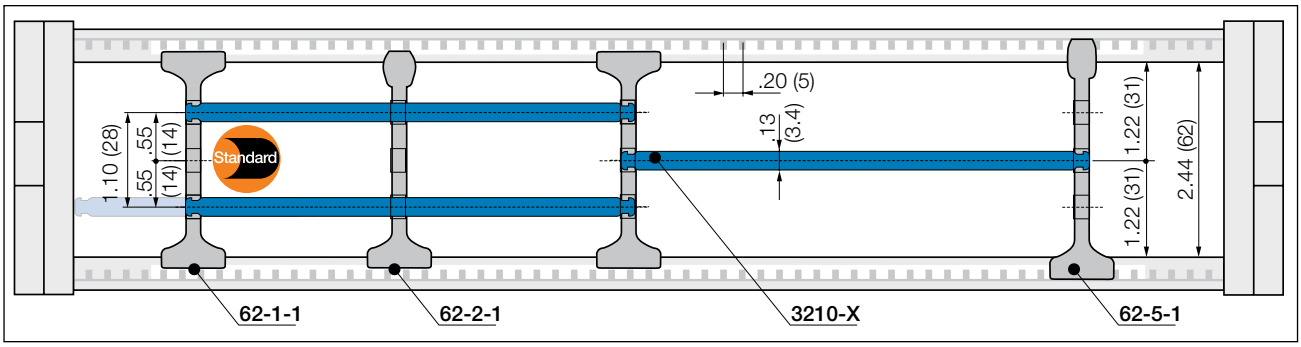
*Removable lid only, no hinged option
0=Standard color black. For other colors see Chapter 1

For large diameter hoses see page 6.136

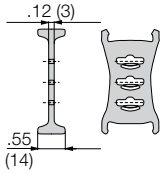
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14240/14340
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



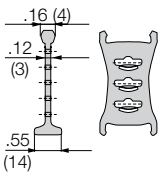

**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 62-1** |
| Assembled | **Part No. 62-1-1** |

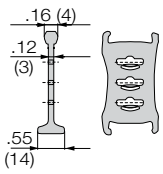
- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator for QuickLock crossbar**

| | |
|---|---|
| Unassembled | **Part No. 62-2** |
| Assembled | **Part No. 62-2-1** |

- **Separator 62-2**
  **For even faster installation**
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

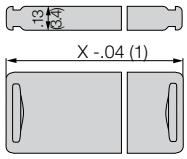



**Notch separator for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 62-5** |
| Assembled | **Part No. 62-5-1** |

- **Separator 62-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

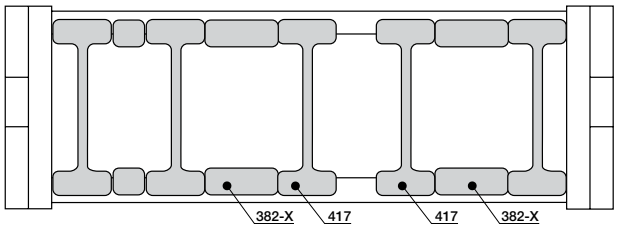
- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

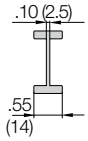
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

# E-Chain System® E4 Light
# Series 14240/14340
# Interior Separation - Previous Generation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates






**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 407** |
| Assembled | **Part No. 417** |

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381-10** | **382-10** | .39” | (10) |
| **381-15** | **382-15** | .59” | (15) |
| **381-20** | **382-20** | 79” | (20) |

- **Standard separator 407 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

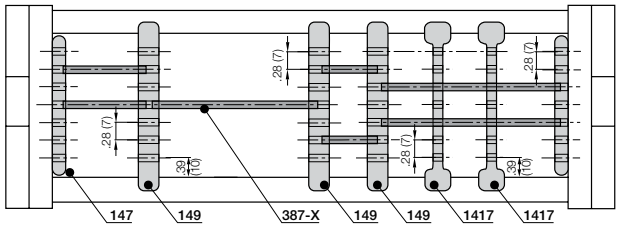
# E-Chain System® E4 Light
# Series 14240/14340
# Interior Separation - Previous Generation

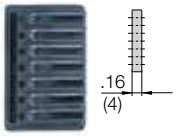
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

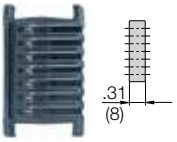



**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 146** |
| Assembled | **Part No. 147** |

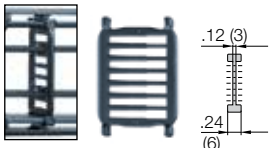
- **Side plates 146**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 148** |
| Assembled | **Part No. 149** |

- **Vertical separator 148**
  This component is used to form the basic pattern of a shelf system.



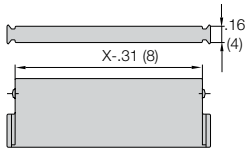

**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 1407** |
| Assembled | **Part No. 1417** |

- **Slotted separators 1407**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

**Shelves 420-XX**

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments



| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |

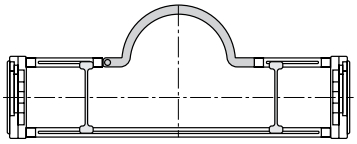
| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.11 | (79) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |

# E-Chain System® E4 Light
# Series 14240/14340
# Special Accessories

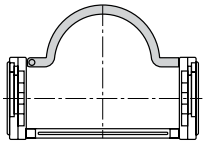
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

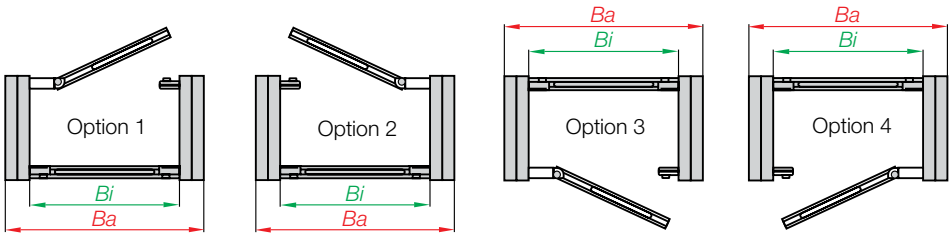


Attached directly to the side link.

| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.53 (115) | Round | No | Yes |
| **385-18-RD115** | 4.53 (115) | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

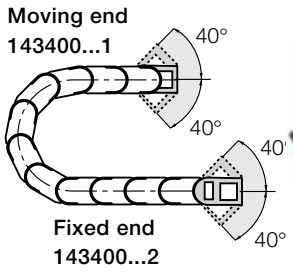
# E-Chain System® E4 Light
# Series 14240/14340
# Mounting Brackets - KMA

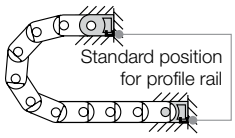
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: KMA pivoting

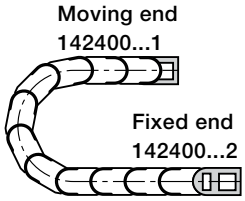
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

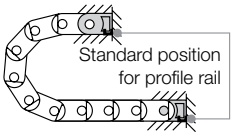





## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

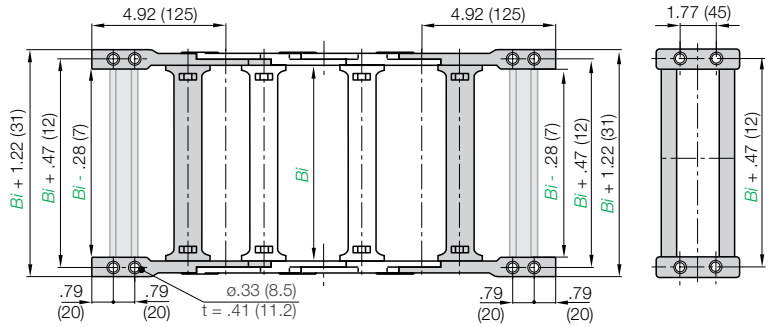





### Part Number Structure

143400- 07- 12 P

- P: With Profile Rail
- 12: Complete Set
- 07-: Width
- 143400 = Pivoting, 142400 = Locking




**Full set, for both ends:**

143400- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

143400- 05- 1 Mounting bracket **with bore**

143400- 05- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 142400**

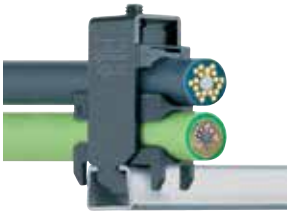
**Part No. Full Set** (pivoting)
Series 14240 or 14340:
143400-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 14240 or 14340
143400-Width-12P

| Width | Part No. Full Set Pivoting | Locking | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -05 | 143400 | 142400 | -05-12 | P | 1.97 (50) |
| -06 | 143400 | 142400 | -06-12 | P | 2.68 (68) |
| -07 | 143400 | 142400 | -07-12 | P | 2.95 (75) |
| -087 | 143400 | 142400 | -087-12 | P | 3.43 (87) |
| -10 | 143400 | 142400 | -10-12 | P | 3.94 (100) |
| -11 | 143400 | 142400 | -11-12 | P | 4.25 (108) |
| -112 | 143400 | 142400 | -112-12 | P | 4.41 (112) |
| -12 | 143400 | 142400 | -12-12 | P | 4.92 (125) |
| -137 | 143400 | 142400 | -137-12 | P | 5.39 (137) |
| -15 | 143400 | 142400 | -15-12 | P | 5.91 (150) |
| -162 | 143400 | 142400 | -162-12 | P | 6.38 (162) |
| -17 | 143400 | 142400 | -17-12 | P | 6.61 (168) |
| -18 | 143400 | 142400 | -18-12 | P | 6.89 (175) |
| -187 | 143400 | 142400 | -187-12 | P | 7.36 (187) |
| -20 | 143400 | 142400 | -20-12 | P | 7.87 (200) |
| -212 | 143400 | 142400 | -212-12 | P | 8.35 (212) |

| Width | Part No. Full Set Pivoting | Locking | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -23 | 143400 | 142400 | -23-12 | P | 8.86 (225) |
| -237 | 143400 | 142400 | -237-12 | P | 9.33 (237) |
| -25 | 143400 | 142400 | -25-12 | P | 9.84 (250) |
| -262 | 143400 | 142400 | -262-12 | P | 10.31 (262) |
| -28 | 143400 | 142400 | -28-12 | P | 10.83 (275) |
| -29 | 143400 | 142400 | -29-12 | P | 11.30 (287) |
| -30 | 143400 | 142400 | -30-12 | P | 11.81 (300) |
| -312 | 143400 | 142400 | -312-12 | P | 12.28 (312) |
| -325 | 143400 | 142400 | -325-12 | P | 12.79 (325) |
| -337 | 143400 | 142400 | -337-12 | P | 13.27 (337) |
| -350 | 143400 | 142400 | -350-12 | P | 13.78 (350) |
| -362 | 143400 | 142400 | -362-12 | P | 14.25 (362) |
| -375 | 143400 | 142400 | -375-12 | P | 14.76 (375) |
| -387 | 143400 | 142400 | -387-12 | P | 15.24 (387) |
| -400 | 143400 | 142400 | -400-12 | P | 15.75 (400) |

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

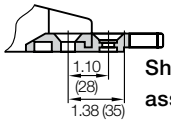
## Chainfix Clip

### Modular snap-on strain relief device

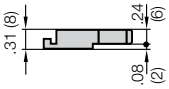
Chainfix clip is available for cable diameters ranging from .16" (4 mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

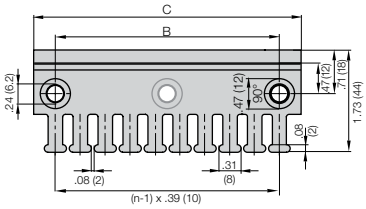



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

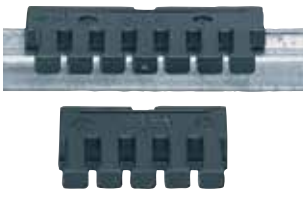
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**



### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14240/14340
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



Width of Crossbar
14240-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.19 (81) | * |
| **-06** | 3.90 (99) | * |
| **-07** | 4.17 (106) | **94-50-225** |
| **-087** | 4.65 (118) | **94-50-250** |
| **-10** | 5.16 (131) | **94-50-250** |
| **-11** | 5.47 (139) | **94-50-250** |
| **-112** | 5.63 (143) | **94-50-275** |
| **-12** | 6.14 (156) | **94-50-275** |
| **-137** | 6.61 (168) | **94-50-300** |
| **-15** | 7.12 (181) | **94-50-300** |
| **-162** | 7.60 (193) | **94-50-325** |
| **-17** | 7.83 (199) | **94-50-325** |
| **-18** | 8.11 (206) | **94-50-325** |
| **-187** | 8.58 (218) | **94-50-350** |
| **-20** | 9.09 (231) | **94-50-350** |
| **-212** | 9.57 (243) | **94-50-375** |
| **-23** | 10.08 (256) | **94-50-375** |
| **-237** | 10.55 (268) | **94-50-400** |
| **-25** | 11.06 (281) | **94-50-400** |
| **-262** | 11.54 (293) | **94-50-425** |
| **-28** | 12.05 (306) | **94-50-425** |
| **-29** | 12.52 (318) | **94-50-450** |
| **-30** | 13.03 (331) | **94-50-450** |
| **-312** | 13.50 (343) | **94-50-475** |
| **-325** | 14.02 (356) | **94-50-475** |
| **-337** | 14.49 (368) | **94-50-500** |
| **-350** | 15.00 (381) | **94-50-500** |
| **-362** | 15.47 (393) | **94-50-525** |
| **-375** | 15.98 (406) | **94-50-525** |
| **-387** | 16.46 (418) | **94-50-550** |
| **-400** | 16.97 (431) | **94-50-550** |

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

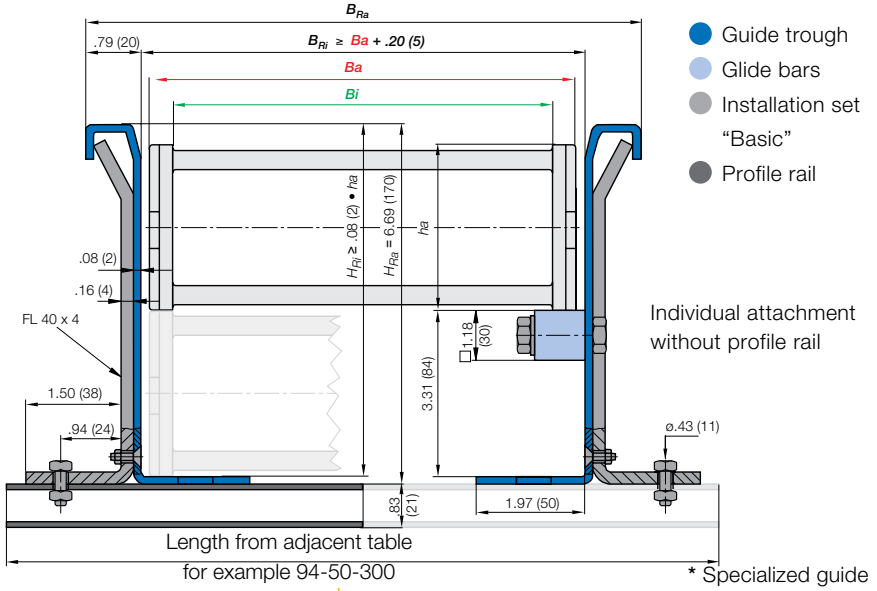
**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**
= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

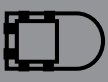
**Left: Guide trough with glide bars Right: Guide troughs without glide bars**

**Installation sets as section connectors**




* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E4 Light
# Series 14550/14650/R19050

2.76 2.76

## Price Index

Series 14550 Series 14650

Series R18840

## Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If weight and price reduction is needed
- If an E-Chain®/E-Tube with an inner height of 2.76” (70 mm) is required

- If an extremely low-noise version is required
  ➤ **Series E6-80**
- If side-mounted chain/tube with a longer unsupported travel is required
  ➤ **Series E4-80, Series 15050**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80, Series 15050**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. 25% faster assembly with QuickLock Crossbar
6. High stability due to undercut design
7. Notch crossbar with visual scale
8. No camber: no rework due to special design

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **14550-30-300-0** | **E-Chain®** |
| With 2 separators **70-1-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **145500-30-12P** | **Mounting Bracket** |

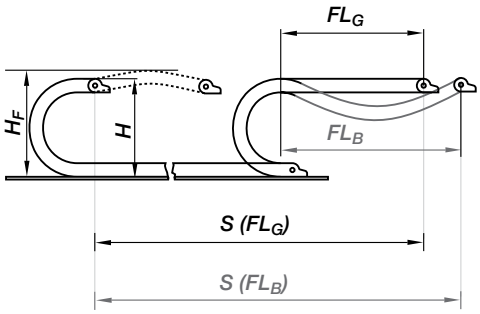
# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Installation Dimensions

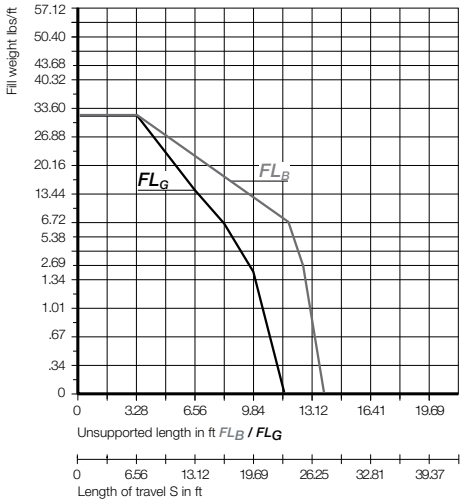


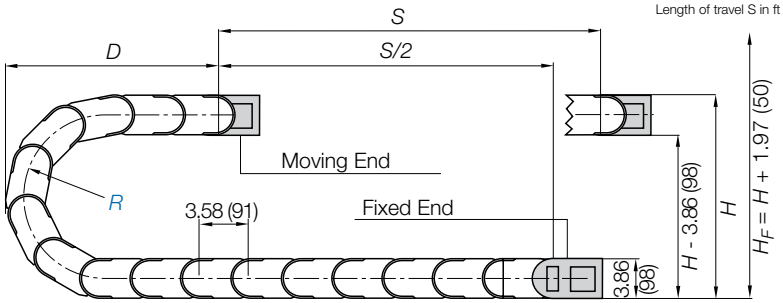
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: $H_F = H + 1.97$ **in. (50 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.91 (150*) | 6.89 (175*) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|---|---|
| H | 15.67 (398) | 17.64 (448) | 19.61 (498) | 23.54 (598) | 27.48 (698) | 31.42 (798) | 35.35 (898) | 39.29 (998) | 43.23(1098) | 51.10 (1298) |
| D | 13.23 (336) | 14.21 (361) | 15.19 (386) | 17.17 (436) | 19.13 (486) | 21.10 (536) | 23.07 (586) | 25.04 (636) | 27.01 (686) | 30.94 (786) |
| K | 25.79 (655) | 28.94 (735) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.29 (1440) | 62.99 (1600) | 69.09 (1755) | 81.50 (2070) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

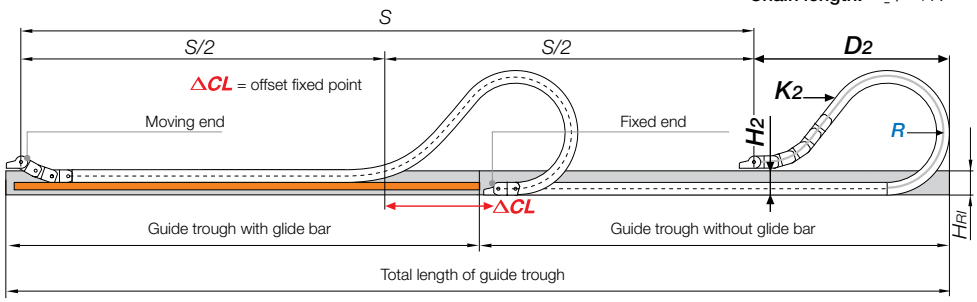
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 492 ft. (150m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




| R | 5.91 (150*) | 6.89 (175*) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 2) |
| $D_{2^{+25}}$ | 17.72 (450) | 20.87 (530) | 27.95 (710) | 36.22 (920) | 44.09 (1120) | 52.76 (1340) | 60.24 (1530) | 1) | 72.05 (1830) | 2) |
| $K_2$ | 32.24 (819) | 39.41 (1001) | 50.16 (1274) | 64.49 (1638) | 75.24 (1911) | 85.98 (2184) | 100.31 (2548) | 1) | 125.39 (3185) | 2) |
| ΔCL | 4.88 (124) | 6.26 (159) | 8.22 (209) | 14.13 (359) | 20.04 (509) | 25.94 (659) | 32.64 (829) | 37.76 (959) | 45.63 (1159) | 2) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

*Radius not available for E-Tubes

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

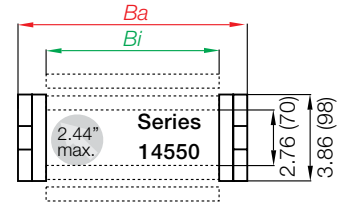
Details of material properties ➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14550/14650/R19050

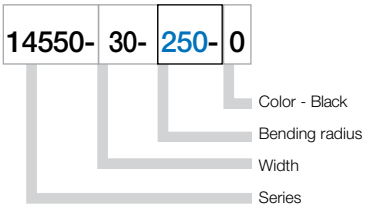
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 14550 - E-Chain® with crossbars every link

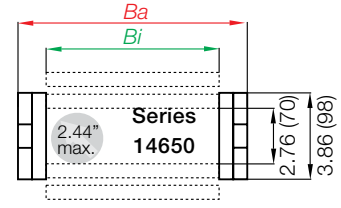


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

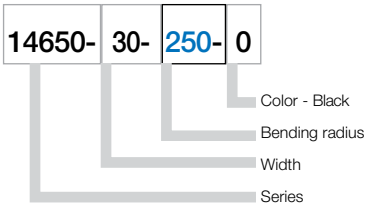



## Series 14650 - E-Chain® with crossbars every other link

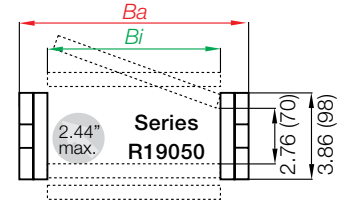


- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

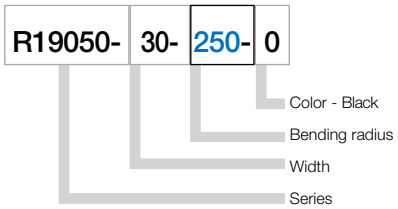



## Series R19050 - fully enclosed E-Tube

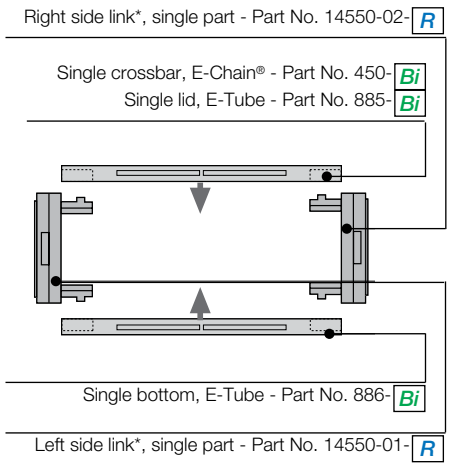


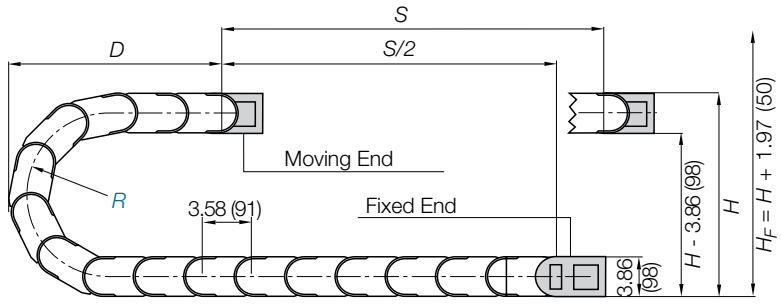
- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4 Light
# Series 14550/14650/R19050

Supplement part number with required radius. Example: 14550-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number Crossbars Every link | Crossbars Every other | Tube Version | | Bi in. (mm) | Ba in. (mm) | 14550 lbs/ft (kg/m) | 14650 lbs/ft (kg/m) | R19050 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 14550-05- | 14650-05- | | -0 | 1.97 (50) | 3.03 (77) | ≈ 2.41 (3.28) | ≈ 2.49 (3.27) | – |
| 14550-06- | 14650-06- | | -0 | 2.56 (65) | 3.62 (92) | ≈ 2.26 (3.37) | ≈ 2.22 (3.31) | – |
| 14550-07- | 14650-07- | 19050-07- | -0 | 2.95 (75) | 4.02 (102) | ≈ 2.31 (3.44) | ≈ 2.25 (3.35) | ≈ 2.69 (4.00) |
| 14550-08- | 14650-08- | | -0 | 3.43 (87) | 4.49 (114) | ≈ 2.37 (3.52) | ≈ 2.27 (3.38) | – |
| 14550-10- | 14650-10- | 19050-10- | -0 | 3.94 (100) | 5.00 (127) | ≈ 2.43 (3.61) | ≈ 2.30 (3.43) | ≈ 2.91 (4.33) |
| 14550-11- | 14650-11- | | -0 | 4.41 (112) | 5.47 (139) | ≈ 2.51 (3.73) | ≈ 2.35 (3.49) | – |
| 14550-12- | 14650-12- | 19050-12- | -0 | 4.92 (125) | 5.98 (152) | ≈ 2.56 (3.81) | ≈ 2.37 (3.53) | ≈ 3.16 (4.70) |
| 14550-13- | 14650-13- | | -0 | 5.39 (137) | 6.46 (164) | ≈ 2.65 (3.94) | ≈ 2.42 (3.60) | – |
| 14550-15- | 14650-15- | 19050-15- | -0 | 5.91 (150) | 6.97 (177) | ≈ 2.67 (3.98) | ≈ 2.43 (3.62) | ≈ 3.39 (5.04) |
| 14550-16- | 14650-16- | | -0 | 6.38 (162) | 7.44 (189) | ≈ 2.75 (4.09) | ≈ 2.47 (3.67) | – |
| 14550-17- | 14650-17- | 19050-17- | -0 | 6.89 (175) | 7.95 (202) | ≈ 2.84 (4.23) | ≈ 2.51 (3.74) | ≈ 3.64 (5.41) |
| 14550-18- | 14650-18- | | -0 | 7.36 (187) | 8.43 (214) | ≈ 2.92 (4.34) | ≈ 2.55 (3.80) | – |
| 14550-20- | 14650-20- | 19050-20- | -0 | 7.87 (200) | 8.94 (227) | ≈ 2.95 (4.39) | ≈ 2.57 (3.82) | ≈ 3.79 (5.64) |
| 14550-21- | 14650-21- | | -0 | 8.35 (212) | 9.41 (239) | ≈ 3.00 (4.46) | ≈ 2.59 (3.86) | – |
| 14550-22- | 14650-22- | | -0 | 8.86 (225) | 9.92 (252) | ≈ 3.04 (4.53) | ≈ 2.61 (3.89) | – |
| 14550-23- | 14650-23- | | -0 | 9.33 (237) | 10.39 (264) | ≈ 3.12 (4.64) | ≈ 2.84 (3.95) | – |
| 14550-25- | 14650-25- | 19050-25- | -0 | 9.84 (250) | 10.91 (277) | ≈ 3.20 (4.76) | ≈ 2.69 (4.00) | ≈ 4.25 (6.32) |
| 14550-26- | 14650-26- | | -0 | 10.31 (262) | 11.38 (289) | ≈ 3.26 (4.85) | ≈ 2.72 (4.05) | – |
| 14550-27- | 14650-27- | 19050-27- | -0 | 10.83 (275) | 11.89 (302) | ≈ 3.33 (4.95) | ≈ 2.76 (4.10) | ≈ 4.47 (6.65) |
| 14550-28- | 14650-28- | | -0 | 11.30 (287) | 12.36 (314) | ≈ 3.37 (5.01) | ≈ 2.78 (4.13) | – |
| 14550-30- | 14650-30- | 19050-30- | -0 | 11.81 (300) | 12.87 (327) | ≈ 3.47 (5.16) | ≈ 2.83 (4.21) | ≈ 4.70 (6.99) |
| 14550-31- | 14650-31- | | -0 | 12.28 (312) | 13.35 (339) | ≈ 3.49 (5.20) | ≈ 2.84 (4.23) | – |
| 14550-32- | 14650-32- | | -0 | 12.79 (325) | 13.86 (352) | ≈ 3.56 (5.30) | ≈ 2.88 (4.28) | – |
| 14550-33- | 14650-33- | | -0 | 13.27 (337) | 14.33 (364) | ≈ 3.64 (5.42) | ≈ 2.92 (4.34) | – |
| 14550-35- | 14650-35- | 19050-35- | -0 | 13.78 (350) | 14.84 (377) | ≈ 3.78 (5.62) | ≈ 2.98 (4.44) | ≈ 5.16 (7.68) |
| 14550-36- | 14650-36- | | -0 | 14.25 (362) | 15.31 (389) | ≈ 3.72 (5.53) | ≈ 2.95 (4.39) | – |
| 14550-37- | 14650-37- | | -0 | 14.76 (375) | 15.83 (402) | ≈ 3.78 (5.63) | ≈ 2.98 (4.44) | – |
| 14550-38- | 14650-38- | | -0 | 15.24 (387) | 16.30 (414) | ≈ 3.86 (5.74) | ≈ 3.02 (4.50) | – |
| 14550-40- | 14650-40- | 19050-40- | -0 | 15.75 (400) | 16.81 (427) | ≈ 4.04 (6.01) | ≈ 3.11 (4.63) | ≈ 5.62 (8.36) |
| 14550-41- | 14650-41- | | -0 | 16.22 (412) | 17.28 (439) | ≈ 3.99 (5.94) | ≈ 3.09 (4.60) | – |
| 14550-42- | 14650-42- | | -0 | 16.73 (425) | 17.79 (452) | ≈ 4.19 (6.23) | ≈ 3.19 (4.74) | – |
| 14550-43- | 14650-43- | | -0 | 17.20 (437) | 18.27 (464) | ≈ 4.08 (6.07) | ≈ 3.13 (4.66) | – |
| 14550-45- | 14650-45- | | -0 | 17.72 (450) | 18.78 (477) | ≈ 4.30 (6.40) | ≈ 3.25 (4.83) | – |
| 14550-46- | 14650-46- | 19050-46- | -0 | 18.19 (462) | 19.25 (489) | ≈ 4.27 (6.35) | ≈ 3.23 (4.80) | ≈ 6.19 (9.21) |
| 14550-47- | 14650-47- | | -0 | 18.70 (475) | 19.76 (502) | ≈ 4.29 (6.39) | ≈ 3.24 (4.82) | – |
| 14550-48- | 14650-48- | | -0 | 19.17 (487) | 20.24 (514) | ≈ 4.46 (6.64) | ≈ 3.33 (4.95) | – |
| 14550-50- | 14650-50- | | -0 | 19.69 (500) | 20.75 (527) | ≈ 4.53 (6.74) | ≈ 3.36 (5.00) | – |
| 14550-51- | 14650-51- | | -0 | 20.16 (512) | 21.22 (539) | ≈ 4.47 (6.65) | ≈ 3.33 (4.95) | – |
| 14550-52- | 14650-52- | | -0 | 20.67 (525) | 21.73 (552) | ≈ 4.58 (6.82) | ≈ 3.39 (5.04) | – |
| 14550-53- | 14650-53- | | -0 | 21.14 (537) | 22.20 (564) | ≈ 4.65 (6.92) | ≈ 3.42 (5.09) | – |
| 14550-55- | 14650-55- | | -0 | 21.65 (550) | 22.72 (577) | ≈ 4.93 (7.34) | ≈ 3.56 (5.30) | – |
| 14550-60- | 14650-60- | | -0 | 23.62 (600) | 24.69 (627) | ≈ 5.09 (7.57) | ≈ 3.64 (5.41) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 14550-30-300-0

| | 150* | 175* | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 600 |
|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.68 (500) | 23.62 (600) |
| *H* | 15.67 (398) | 17.64 (448) | 19.61 (498) | 23.54 (598) | 27.48 (698) | 31.42 (798) | 35.35 (898) | 39.29 (998) | 43.23(1098) | 51.10 (1298) |
| *D* | 13.23 (336) | 14.21 (361) | 15.19 (386) | 17.17 (436) | 19.13 (486) | 21.10 (536) | 23.07 (586) | 25.04 (636) | 27.01 (686) | 30.94 (786) |
| *K* | 25.79 (655) | 28.94 (735) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.29 (1440) | 62.99 (1600) | 69.09 (1755) | 81.50 (2070) |

* This radius is not available for the Tube Series
[1] Values upon request
[2] Note: for using *R 600* for long travels (gliding) please consult igus® first.

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.146. For large diameter hoses see page 6.146



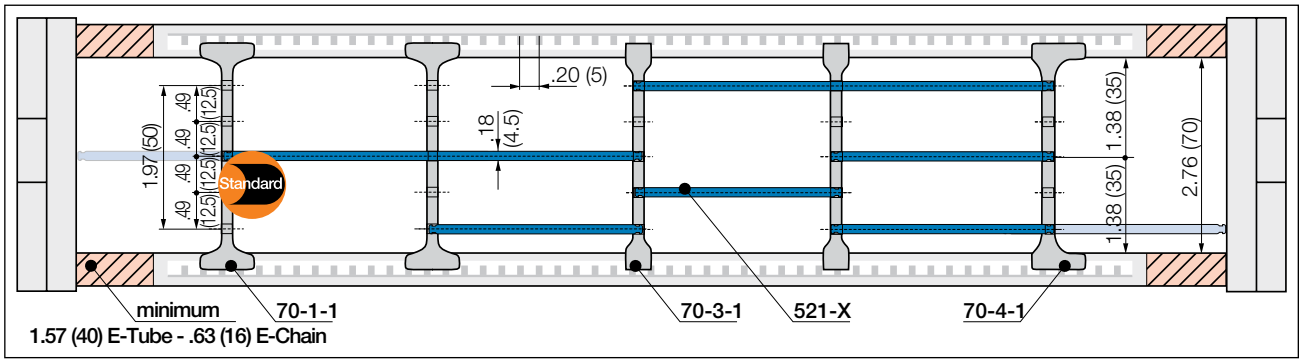
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Interior Separation

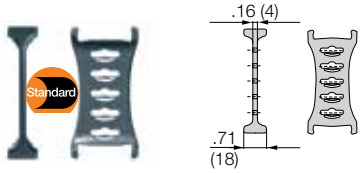


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



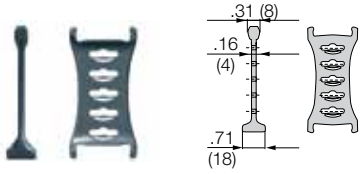

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 70-1** |
| Assembled | **Part No. 70-1-1** |

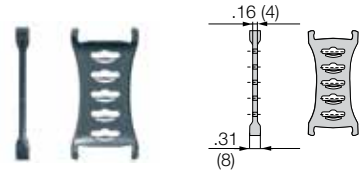
- **Standard separator 70-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 70-2** |
| Assembled | **Part No. 70-2-1** |

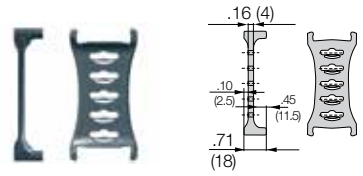
- **Separator 70-2**
  **For even faster installation**
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 70-3** |
| Assembled | **Part No. 70-3-1** |

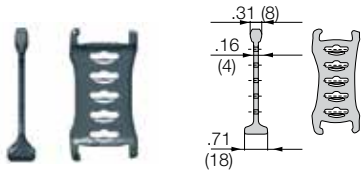
- **Separator 70-3**
  **For many thin cables**
  Separator with a narrow base for many thin cables side by side. Saves space in E-Chains® and E-Tubes.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 70-4** |
| Assembled | **Part No. 70-4-1** |

- **Separator 70-4**
  **For side mounted applications**
  Asymmetrical separator, for defined distance. No additional spacers necessary for E-Chains® and E-Tubes.

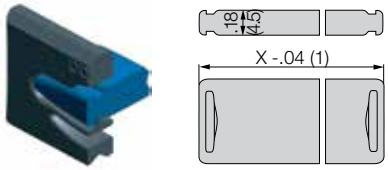



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 70-5** |
| Assembled | **Part No. 70-5-1** |

- **Separator 70-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

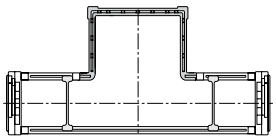
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.723 (450) | **520-450** | **521-450** |

# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Special Accessories

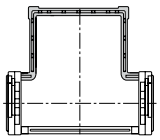
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

## Extender crossbars - For careful guiding of large diameter cables and hoses

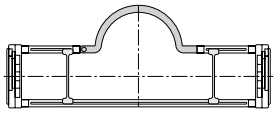
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



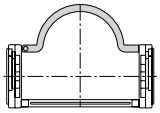
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.09 (180) | Square | Yes | No |
| **450-35-D250** | 7.68 (195) | Square | Yes | No |
| **450-40-D300** | 9.65 (245) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.09 (180) | Square | No | Yes |
| **450-30-HD250** | 7.68 (195) | Square | No | Yes |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Mounting Brackets

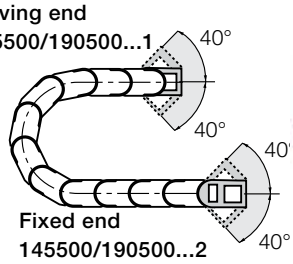
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

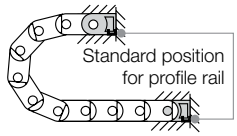
## Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

Moving end
145500/190500...1



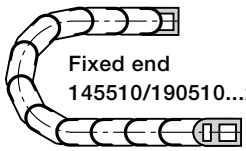

Fixed end
145500/190500...2



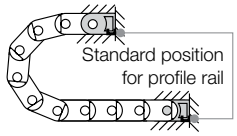

## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

Moving end
145510/190510...1



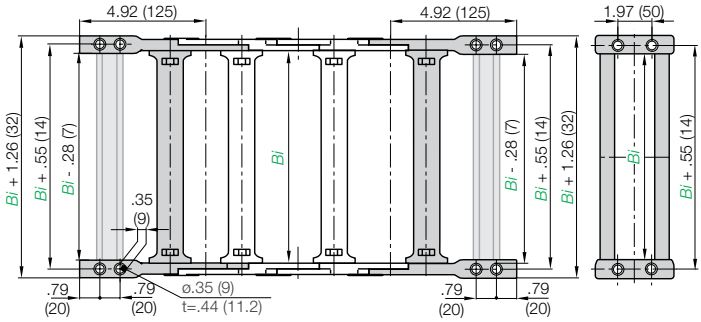
Fixed end
145510/190510...2




### Part Number Structure

| 145500 | 05- | 12 | P |
|---|---|---|---|

- P: With Profile Rail
- 12: Complete Set
- 05-: Width
- 145500: 145500/190500 = Locking, 145510/190510 = Pivoting




**Full set, for both ends:**

145500- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

145500- 05- 1 Mounting bracket **with bore**

145500- 05- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 145510**

**Part No. Full Set** (pivoting for Chain)
Series 14550 or 14650:
145500-Width-12

**Part No. Full Set** (pivoting for Chain)
with profile rail
Series 14550 or 14650
145550-Width-12P

**Part No. Full Set** (pivoting for Tube)
Tube Series R19050
190500-Width-12

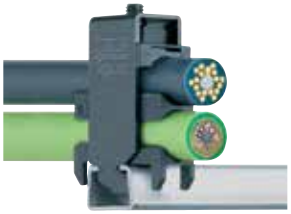
**Part No. Full Set** (pivoting for Tube)
with Profile Rail
Tube Series R19050
190510-Width-12P

| Width | Part No. Full Set Pivoting Chain/Tube | Part No. Full Set Locking Chain/Tube | | With Profile | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -05 | 145500- | 145510- | 05-12 | P | 1.97 (50) |
| -06 | 145500- | 145510- | 06-12 | P | 2.56 (65) |
| -07 | 145500-/190500- | 145510-/190510- | 07-12 | P | 2.95 (75) |
| -08 | 145500- | 145510- | 08-12 | P | 3.43 (87) |
| -10 | 145500-/190500- | 145510-/190510- | 10-12 | P | 3.94 (100) |
| -11 | 145500- | 145510- | 11-12 | P | 4.41 (112) |
| -12 | 145500-/190500- | 145510-/190510- | 12-12 | P | 4.92 (125) |
| -13 | 145500- | 145510- | 13-12 | P | 5.39 (137) |
| -15 | 145500-/190500- | 145510-/190510- | 15-12 | P | 5.91 (150) |
| -16 | 145500- | 145510- | 16-12 | P | 6.38 (162) |
| -17 | 145500-/190500- | 145510-/190510- | 17-12 | P | 6.89 (175) |
| -18 | 145500- | 145510- | 18-12 | P | 7.36 (187) |
| -20 | 145500-/190500- | 145510-/190510- | 20-12 | P | 7.87 (200) |
| -21 | 145500- | 145510- | 21-12 | P | 8.35 (212) |
| -22 | 145500- | 145510- | 22-12 | P | 8.86 (225) |
| -23 | 145500- | 145510- | 23-12 | P | 9.33 (237) |
| -25 | 145500-/190500- | 145510-/190510- | 25-12 | P | 9.84 (250) |
| -26 | 145500- | 145510- | 26-12 | P | 10.31 (262) |
| -27 | 145500-/190500- | 145510-/190510- | 27-12 | P | 10.83 (275) |
| -28 | 145500- | 145510- | 28-12 | P | 11.30 (287) |
| -30 | 145500-/190500- | 145510-/190510- | 30-12 | P | 11.81 (300) |

| Width | Part No. Full Set Pivoting Chain/Tube | Part No. Full Set Locking Chain/Tube | | With Profile | *Bi* in. (mm) |
|---|---|---|---|---|---|
| -31 | 145500- | 145510- | 31-12 | P | 12.28 (312) |
| -32 | 145500- | 145510- | 32-12 | P | 12.79 (325) |
| -33 | 145500- | 145510- | 33-12 | P | 13.27 (337) |
| -35 | 145500-/190500- | 145510-/190510- | 35-12 | P | 13.78 (350) |
| -36 | 145500- | 145510- | 36-12 | P | 14.25 (362) |
| -37 | 145500- | 145510- | 37-12 | P | 14.76 (375) |
| -38 | 145500- | 145510- | 38-12 | P | 15.24 (387) |
| -40 | 145500-/190500- | 145510-/190510- | 40-12 | P | 15.75 (400) |
| -41 | 145500- | 145510- | 41-12 | P | 16.22 (412) |
| -42 | 145500- | 145510- | 42-12 | P | 16.73 (425) |
| -43 | 145500- | 145510- | 43-12 | P | 17.20 (437) |
| -45 | 145500- | 145510- | 45-12 | P | 17.72 (450) |
| -46 | 145500-/190500- | 145510-/190510- | 46-12 | P | 18.19 (462) |
| -47 | 145500- | 145510- | 47-12 | P | 18.70 (475) |
| -48 | 145500- | 145510- | 48-12 | P | 19.17 (487) |
| -50 | 145500- | 145510- | 50-12 | P | 19.69 (500) |
| -51 | 145500- | 145510- | 51-12 | P | 20.16 (512) |
| -52 | 145500- | 145510- | 52-12 | P | 20.67 (525) |
| -53 | 145500- | 145510- | 53-12 | P | 21.14 (537) |
| -55 | 145500- | 145510- | 55-12 | P | 21.65 (550) |
| -60 | 145500- | 145510- | 60-12 | P | 23.62 (600) |

# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

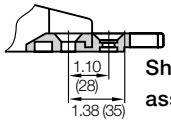
## Chainfix Clip

### Modular snap-on strain relief device

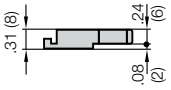
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

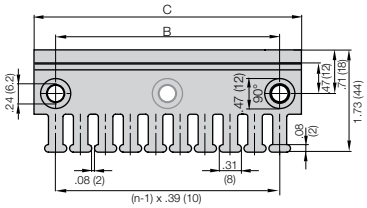



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

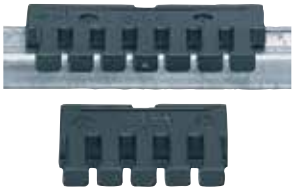
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**



### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 14550/14650/R19050
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
14550-**10**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.23 (82) | * |
| **-06** | 3.82 (97) | * |
| **-07** | 4.21 (107) | **94-50-225** |
| **-08** | 4.69 (119) | **94-50-250** |
| **-10** | 5.20 (132) | **94-50-250** |
| **-11** | 5.67 (144) | **94-50-275** |
| **-12** | 6.18 (157) | **94-50-275** |
| **-13** | 6.65 (169) | **94-50-300** |
| **-15** | 7.17 (182) | **94-50-300** |
| **-16** | 7.64 (194) | **94-50-325** |
| **-17** | 8.15 (207) | **94-50-325** |
| **-18** | 8.62 (219) | **94-50-350** |
| **-20** | 9.13 (232) | **94-50-350** |
| **-21** | 9.61 (244) | **94-50-375** |
| **-22** | 10.12 (257) | **94-50-375** |
| **-23** | 10.59 (269) | **94-50-400** |
| **-25** | 11.10 (282) | **94-50-400** |
| **-26** | 11.57 (294) | **94-50-425** |
| **-27** | 12.09 (307) | **94-50-425** |
| **-28** | 12.56 (319) | **94-50-450** |
| **-30** | 13.07 (332) | **94-50-450** |
| **-31** | 13.54 (344) | **94-50-475** |
| **-32** | 14.06 (357) | **94-50-475** |
| **-33** | 14.53 (369) | **94-50-500** |
| **-35** | 15.04 (382) | **94-50-500** |
| **-36** | 15.51 (394) | **94-50-525** |
| **-37** | 16.02 (407) | **94-50-525** |
| **-38** | 16.50 (419) | **94-50-550** |
| **-40** | 17.01 (432) | **94-50-550** |
| **-41** | 17.48 (444) | **94-50-575** |
| **-42** | 17.99 (457) | **94-50-575** |
| **-43** | 18.46 (469) | **94-50-600** |
| **-45** | 18.98 (482) | **94-50-600** |
| **-46** | 19.45 (494) | **94-50-625** |
| **-47** | 19.96 (507) | **94-50-625** |
| **-48** | 20.43 (519) | **94-50-650** |
| **-50** | 20.94 (532) | **94-50-650** |
| **-51** | 21.42 (544) | **94-50-675** |
| **-52** | 21.93 (557) | **94-50-675** |
| **-53** | 22.40 (569) | **94-50-700** |
| **-55** | 22.91 (582) | **94-50-700** |
| **-60** | 24.88 (632) | **94-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 94-14550-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

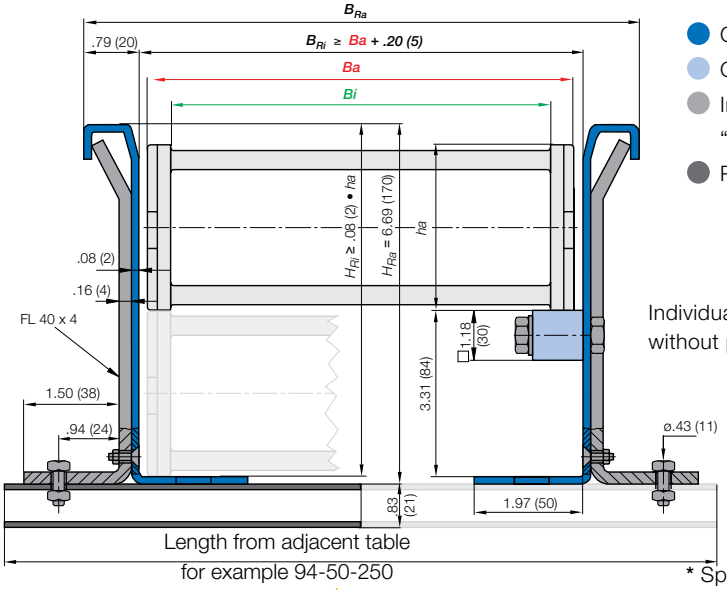
**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**
= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

Left: Guide trough with glide bars
Right: Guide troughs without glide bars

Installation sets as section connectors




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15050/15150/R19850

3.15" 3.15"

## Price Index

Series 15050

Series 15150

Series R19850

## Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

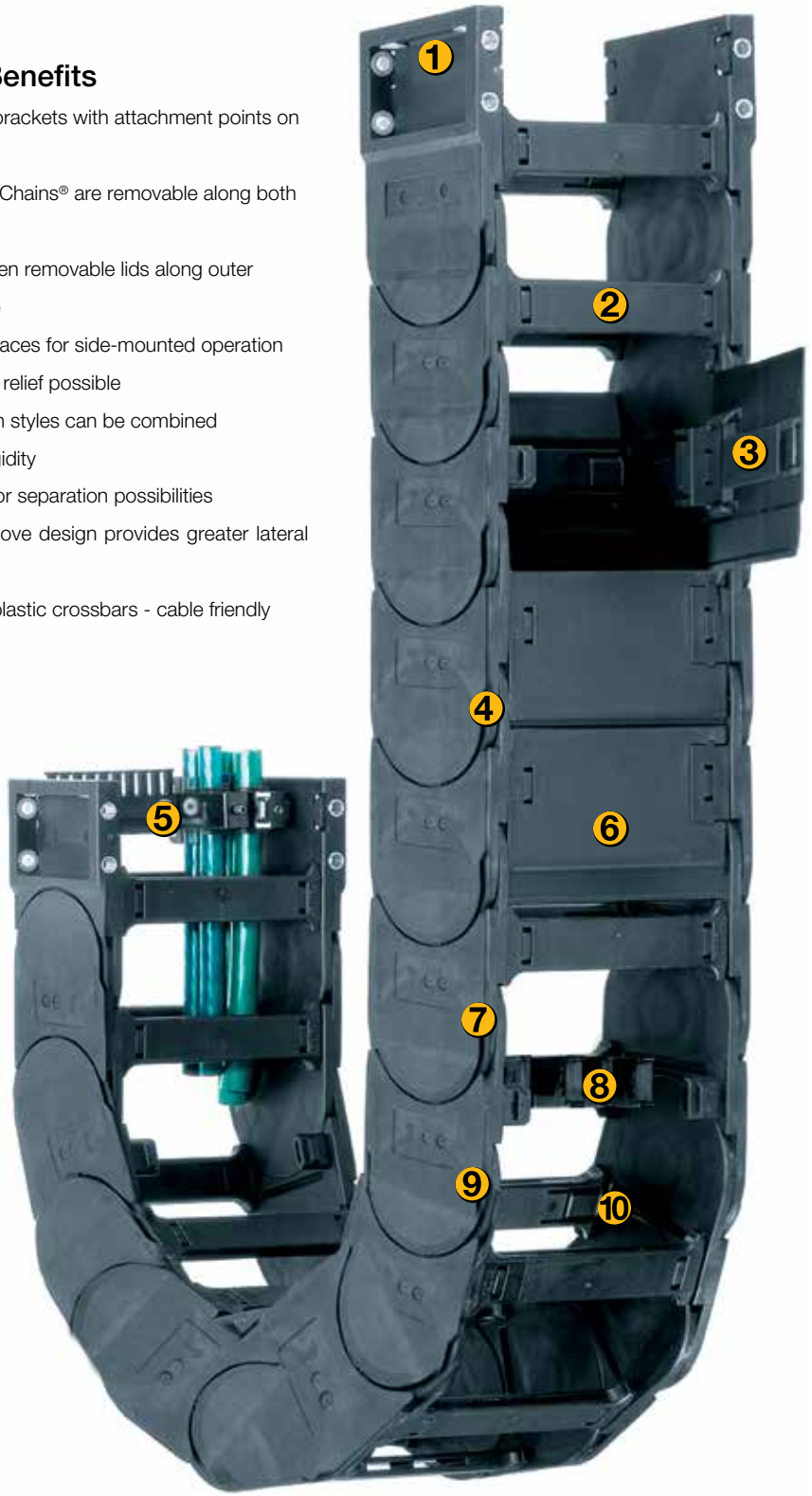
## Usage Guidelines

- If a simpler low-cost solution is required
- For maximum inner width with minimal outer width
- If the Series 5050 is too large

- If side-mounted chain/tube with a long unsupported travel is required
  ➤ **Series E4-80/H4-80/R4-80**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Integrated strain relief possible
6. Closed and open styles can be combined
7. High torsional rigidity
8. Numerous interior separation possibilities
9. Tongue and groove design provides greater lateral stability
10. Wide, rounded plastic crossbars - cable friendly




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **15050-30-300-0** | **E-Chain®** |
| With 2 separators **511** assembled every 2nd link | **Interior Separation** |
| 1 Set **150500-30-12P** | **Mounting Bracket** |

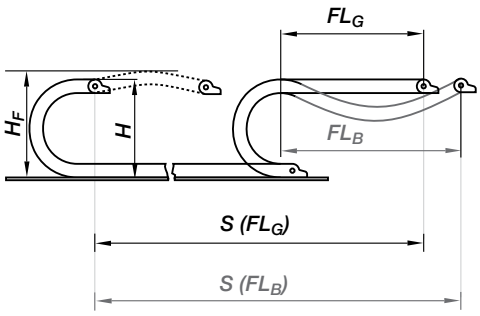
# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Installation Dimensions

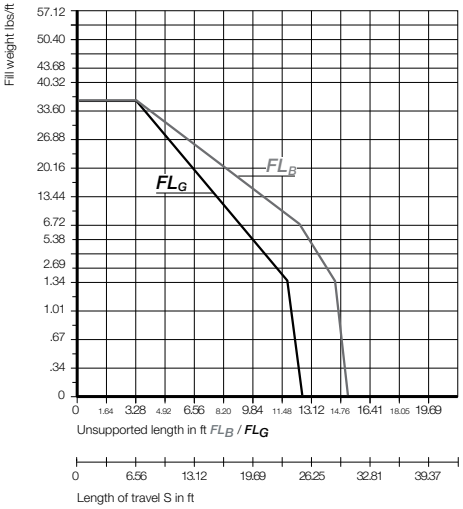
**Short travel, unsupported length**

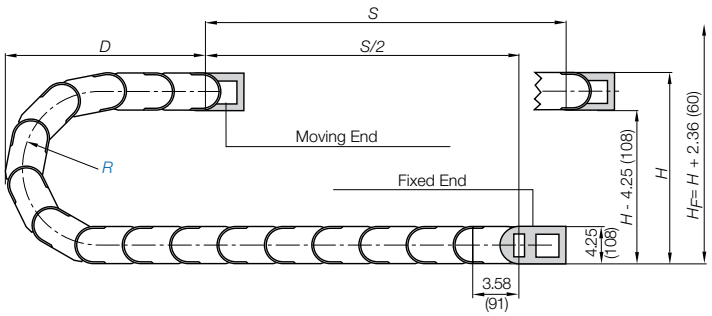
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H$ **+ 2.36 in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|
| $H^{-0}_{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 51.50 (1308) |
| D | 13.43 (341) | 15.39 (391) | 17.36 (441) | 19.33 (491) | 21.30 (541) | 23.27 (591) | 27.20 (691) | 31.14 (791) |
| K | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) | 81.50 (2070) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

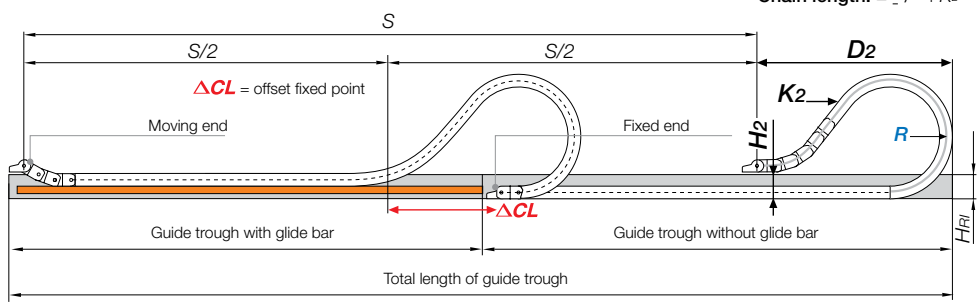
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 5.91 (150*) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 23.62 (600[1]) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | * |
| $D_2$ +25 | 21.65 (550) | 31.50 (800) | 37.40 (950) | 47.24 (1200) | 61.02 (1550) | 66.93 (1700) | 85.63 (2175) | * |
| $K_2$ | 35.83 (910) | 50.16 (1274) | 64.49 (1638) | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 136.14 (3458) | * |
| ΔCL | 8.23 (209) | 16.10 (409) | 20.04 (509) | 27.91 (709) | 39.72 (1009) | 43.66 (1109) | 58.42 (1484) | * |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

[1] ***R 600*** not suitable for long travel applications.
Please consult igus®

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties ➤ **Chapter 1**

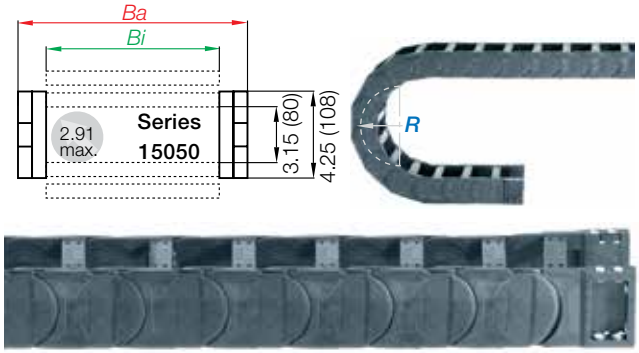


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15050/15150/R19850

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 15050 - E-Chain® with crossbars every link

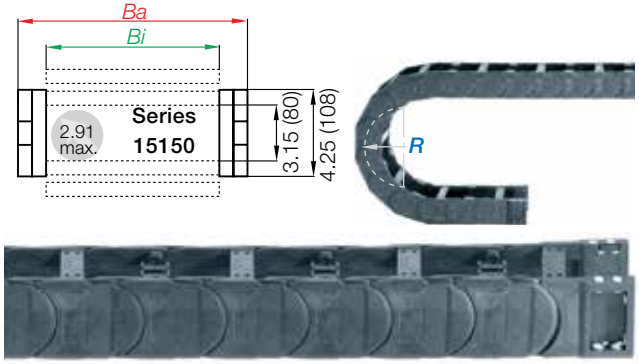



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 15050- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series 15150 - E-Chain® with crossbars every other link

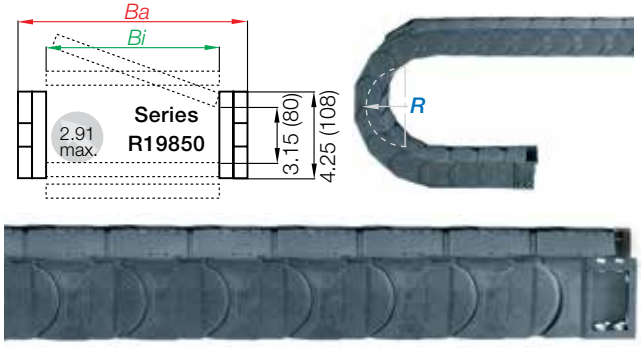



- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 15150- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series R19850 - fully enclosed E-Tube

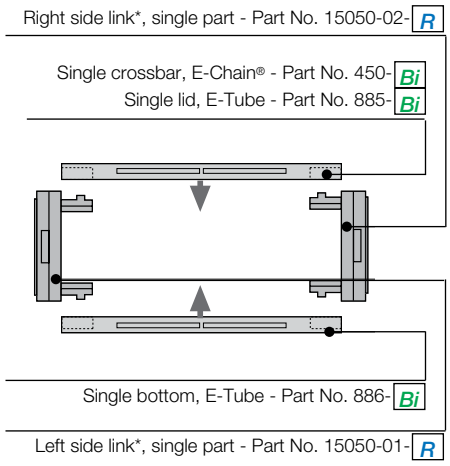


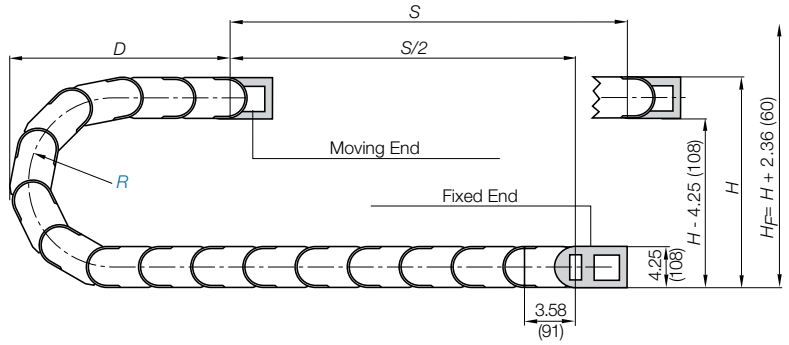

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 19850- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4 Light
# Series 15050/15150/R19850

Supplement part number with required radius. Example: 15050-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | Bi in. (mm) | Ba in. (mm) | 15050 lbs/ft (kg/m) | 15150 lbs/ft (kg/m) | R19850 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 15050-05- | 15150-05- | | -0 | 1.97 (50) | 3.15 (80) | ≈2.59 (3.85) | ≈ 2.58 (3.84) | – |
| 15050-06- | 15150-06- | | -0 | 2.56 (65) | 3.74 (95) | ≈2.65 (3.95) | ≈ 2.61 (3.88) | – |
| 15050-07- | 15150-07- | 19850-07- | -0* | 2.95 (75) | 4.13 (105) | ≈2.69 (4.00) | ≈ 2.63 (3.92) | ≈ 3.00 (4.46) |
| 15050-08- | 15150-08- | | -0 | 3.43 (87) | 4.61 (117) | ≈ 2.72 (4.05) | ≈ 2.66 (3.96) | – |
| 15050-10- | 15150-10- | 19850-10- | -0 | 3.94 (100) | 5.12 (130) | ≈ 2.81 (4.18) | ≈ 2.69 (4.00) | ≈ 3.18 (4.74) |
| 15050-11- | 15150-11- | | -0 | 4.41 (112) | 5.63 (143) | ≈ 2.90 (4.31) | ≈ 2.73 (4.07) | – |
| 15050-12- | 15150-12- | 19850-12- | -0 | 4.92 (125) | 6.10 (155) | ≈ 2.94 (4.38) | ≈ 2.76 (4.10) | ≈ 3.43 (5.10) |
| 15050-13- | 15150-13- | | -0 | 5.39 (137) | 6.61 (168) | ≈ 3.03 (4.51) | ≈ 2.80 (4.17) | – |
| 15050-15- | 15150-15- | 19850-15- | -0 | 5.91 (150) | 7.09 (180) | ≈ 3.08 (4.58) | ≈ 2.82 (4.20) | ≈ 3.72 (5.53) |
| 15050-16- | 15150-16- | | -0 | 6.38 (162) | 7.60 (193) | ≈ 3.15 (4.69) | ≈ 2.86 (4.26) | – |
| 15050-17- | 15150-17- | 19850-17- | -0 | 6.89 (175) | 8.07 (205) | ≈ 3.23 (4.80) | ≈ 2.90 (4.31) | ≈ 3.95 (5.80) |
| 15050-18- | 15150-18- | | -0 | 7.36 (187) | 8.58 (218) | ≈ 3.30 (4.91) | ≈ 2.94 (4.37) | – |
| 15050-20- | 15150-20- | 19850-20- | -0 | 7.87 (200) | 9.06 (230) | ≈ 3.31 (4.93) | ≈ 2.94 (4.38) | ≈ 4.11 (6.11) |
| 15050-21- | 15150-21- | | -0 | 8.35 (212) | 9.57 (243) | ≈ 3.39 (5.04) | ≈ 2.98 (4.43) | – |
| 15050-22- | 15150-22- | | -0 | 8.86 (225) | 10.04 (255) | ≈ 3.43 (5.10) | ≈ 3.00 (4.47) | – |
| 15050-23- | 15150-23- | | -0 | 9.33 (237) | 10.55 (268) | ≈ 3.52 (5.24) | ≈ 3.04 (4.53) | – |
| 15050-25- | 15150-25- | 19850-25- | -0 | 9.84 (250) | 11.02 (280) | ≈ 3.57 (5.32) | ≈ 3.08 (4.58) | ≈ 4.59 (6.83) |
| 15050-26- | 15150-26- | | -0 | 10.31 (262) | 11.54 (293) | ≈ 3.64 (5.41) | ≈ 3.10 (4.62) | – |
| 15050-27- | 15150-27- | 19850-27- | -0 | 10.83 (275) | 12.01 (305) | ≈ 3.71 (5.52) | ≈ 3.14 (4.68) | ≈ 4.87 (7.26) |
| 15050-28- | 15150-28- | | -0 | 11.30 (287) | 12.52 (318) | ≈ 3.72 (5.54) | ≈ 3.15 (4.69) | – |
| 15050-30- | 15150-30- | 19850-30- | -0 | 11.81 (300) | 12.99 (330) | ≈ 3.87 (5.76) | ≈ 3.23 (4.80) | ≈ 5.03 (7.49) |
| 15050-31- | 15150-31- | | -0 | 12.28 (312) | 13.50 (343) | ≈ 3.90 (5.80) | ≈ 3.24 (4.82) | – |
| 15050-32- | 15150-32- | | -0 | 12.79 (325) | 13.98 (355) | ≈ 3.93 (5.85) | ≈ 3.25 (4.84) | – |
| 15050-33- | 15150-33- | | -0 | 13.27 (337) | 14.49 (368) | ≈ 4.05 (6.03) | ≈ 3.31 (4.93) | – |
| 15050-35- | 15150-35- | 19850-35- | -0 | 13.78 (350) | 14.96 (380) | ≈ 4.15 (6.18) | ≈ 3.37 (5.01) | ≈ 5.54 (8.24) |
| 15050-36- | 15150-36- | | -0 | 14.25 (362) | 15.47 (393) | ≈ 4.16 (6.19) | ≈ 3.37 (5.02) | – |
| 15050-37- | 15150-37- | | -0 | 14.76 (375) | 15.94 (405) | ≈ 4.17 (6.20) | ≈ 3.37 (5.02) | – |
| 15050-38- | 15150-38- | | -0 | 15.24 (387) | 16.46 (418) | ≈ 4.23 (6.29) | ≈ 3.40 (5.06) | – |
| 15050-40- | 15150-40- | 19850-40- | -0 | 15.75 (400) | 16.93 (430) | ≈ 4.36 (6.49) | ≈ 3.47 (5.16) | ≈ 6.18 (9.20) |
| 15050-41- | 15150-41- | | -0 | 16.22 (412) | 17.44 (443) | ≈ 4.46 (6.64) | ≈ 3.52 (5.24) | – |
| 15050-42- | 15150-42- | | -0 | 16.73 (425) | 17.91 (455) | ≈ 4.57 (6.80) | ≈ 3.57 (5.31) | – |
| 15050-43- | 15150-43- | | -0 | 17.20 (437) | 18.43 (468) | ≈ 4.61 (6.86) | ≈ 3.60 (5.35) | – |
| 15050-45- | 15150-45- | | -0 | 17.72 (450) | 18.90 (480) | ≈ 4.66 (6.93) | ≈ 3.62 (5.38) | – |
| 15050-46- | 15150-46- | 19850-46- | -0 | 18.19 (462) | 19.41 (493) | ≈ 4.67 (6.95) | ≈ 3.62 (5.39) | ≈ 6.49 (9.66) |
| 15050-47- | 15150-47- | | -0 | 18.70 (475) | 19.88 (505) | ≈ 4.76 (7.08) | ≈ 3.67 (5.46) | – |
| 15050-48- | 15150-48- | | -0 | 19.17 (487) | 20.39 (518) | ≈ 4.81 (7.16) | ≈ 3.69 (5.49) | – |
| 15050-50- | 15150-50- | | -0 | 19.69 (500) | 20.87 (530) | ≈ 4.85 (7.22) | ≈ 3.71 (5.52) | – |
| 15050-51- | 15150-51- | | -0 | 20.16 (512) | 21.38 (543) | ≈ 4.87 (7.24) | ≈ 3.72 (5.53) | – |
| 15050-52- | 15150-52- | | -0 | 20.67 (525) | 21.85 (555) | ≈ 4.89 (7.28) | ≈ 3.74 (5.56) | – |
| 15050-53- | 15150-53- | | -0 | 21.14 (537) | 22.36 (568) | ≈ 5.00 (7.44) | ≈ 3.78 (5.63) | – |
| 15050-55- | 15150-55- | | -0 | 21.65 (550) | 22.83 (580) | ≈ 5.32 (7.92) | ≈ 3.94 (5.87) | – |
| 15050-60- | 15150-60- | | -0 | 23.62 (600) | 24.80 (630) | ≈ 5.46 (8.12) | ≈ 4.01 (5.97) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm)Example: 15050-30-300-0

| | 150** | 200 | 250 | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|---|---|
| *R* | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
| *H* $^{-0}_{+25}$ | 16.14 (410) | 20.08 (510) | 24.02 (610) | 27.95 (710) | 31.89 (810) | 35.83 (910) | 43.70 (1110) |
| *D* | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 25.59 (650) |
| *K* | 29.53 (750) | 35.43 (900) | 41.34 (1050) | 48.23 (1225) | 54.13 (1375) | 57.09 (1450) | 65.94 (1675) |

** This radius is not available for the R19850 Series
* Removable lid only, no hinged option

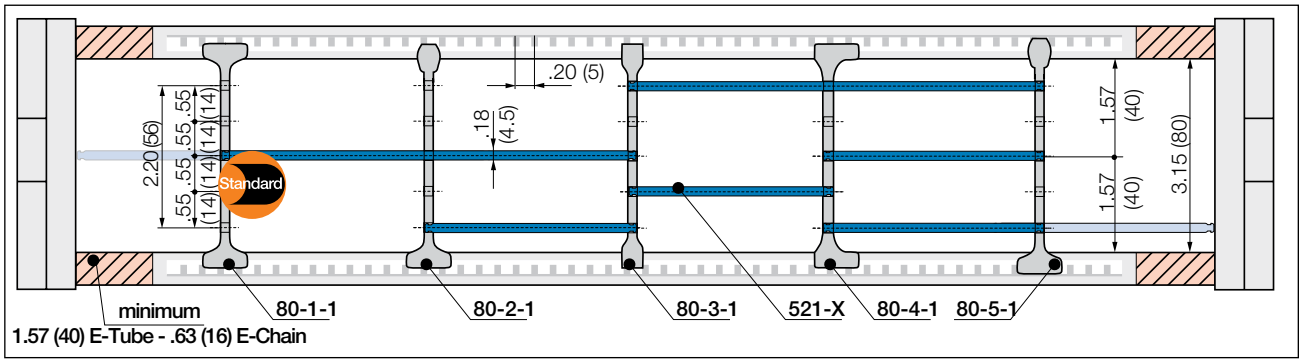
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.158. For large diameter hoses see page 6.158



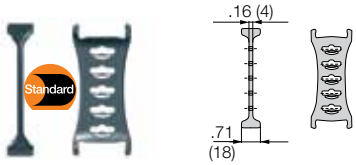
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



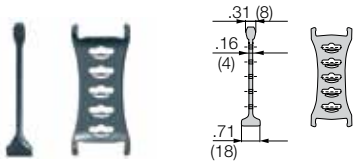

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

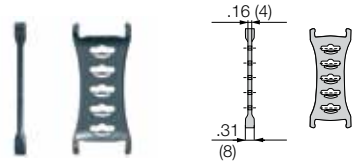
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

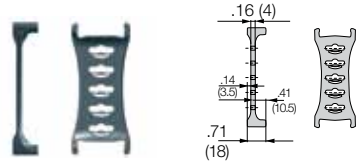
- **Separator 80-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

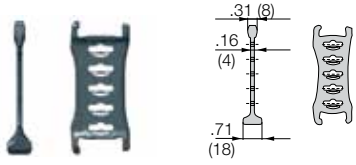
- **Separator 80-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-4** |
| Assembled | **Part No. 80-4-1** |

- **Separator 80-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

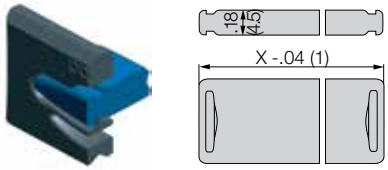



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

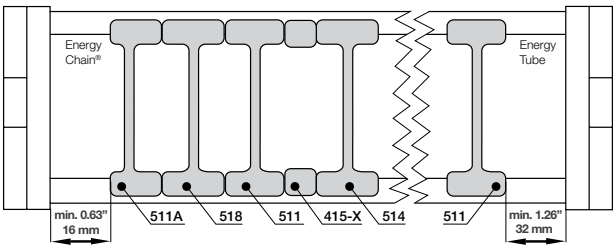
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.723 (450) | **520-450** | **521-450** |

# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Interior Separation - Previous Generation

## Option 1: Vertical separators and spacers

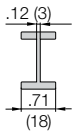
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Standard

**STANDARD Vertical separator 501**




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

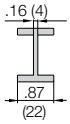
**Locking separator 504**

**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

**Locking separator 508**

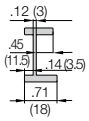



**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

**Asymmetric separator 501A**




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 405-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

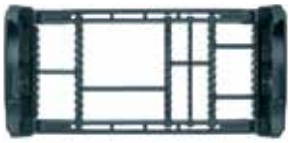
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

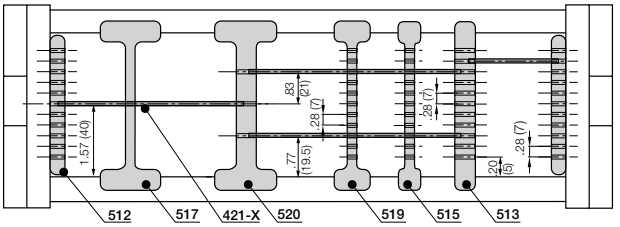
# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Interior Separation - Previous Generation



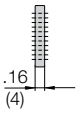
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



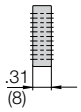

- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.




| Side plate | |
|---|---|
| Unassembled | **Part No. 502** |
| Assembled | **Part No. 512** |

Side plate 502

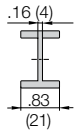
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

Vertical separator 503

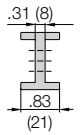
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.




| Locking vertical separator | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

Locking vertical separator 507

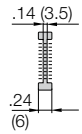
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.




| Locking vertical separator | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

Locking vertical separator 510

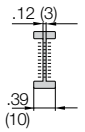
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




| Slotted separators, closed | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

Closed slotted separator 505

- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots




| Slotted separators, open | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

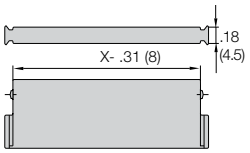
Open slotted separator 509

### Shelves 420-XX

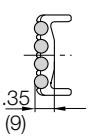
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



**Rollclip** - minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables




| Rollclip | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

igus® E-Chain System®
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Special Accessories

Part number example for E-Chain®

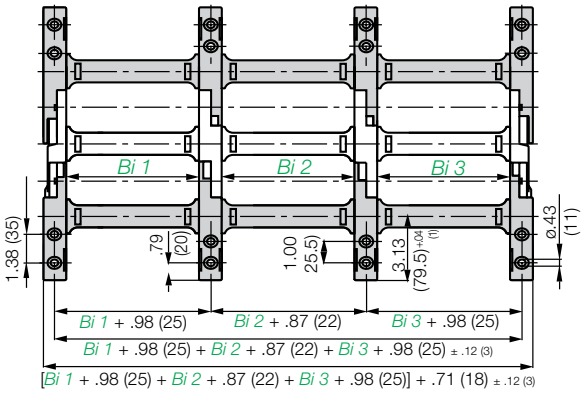
**15050-10/20/10-** 200 **-0**

**15050-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

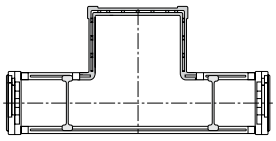
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



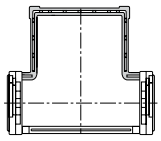
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

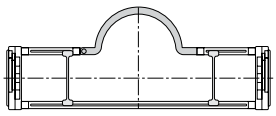
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



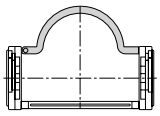
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.09 (180) | Square | Yes | No |
| **450-35-D250** | 7.68 (195) | Square | Yes | No |
| **450-40-D300** | 9.65 (245) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.09 (180) | Square | No | Yes |
| **450-30-HD250** | 7.68 (195) | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

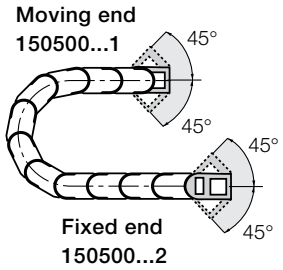
# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Mounting Brackets - KMA

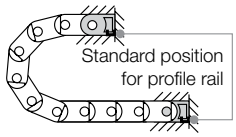
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: KMA pivoting

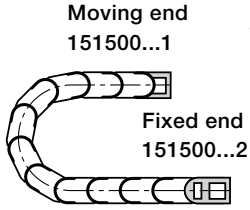
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

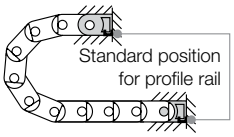





## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

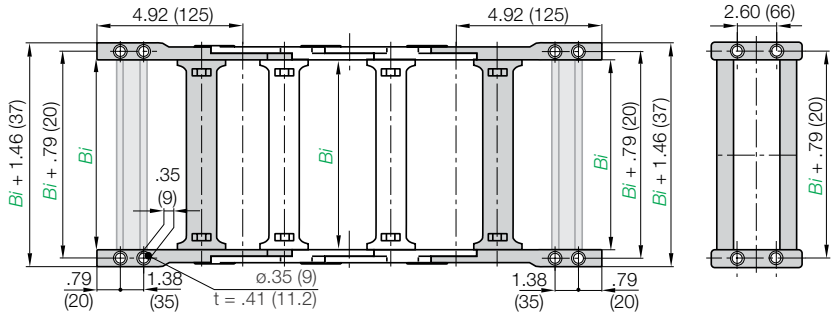





### Part Number Structure

| 150500- | 07- | 12 | T | P |
|---|---|---|---|---|

- With Profile Rail
- Tube version
- Complete Set
- Width
- 150500 = Pivoting
  151500 = Locking




**Full set, for both ends:**

150500- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

150500 - 05- 1 Mounting bracket **with bore**

150500 - 05- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 151500**

**Part No. Full Set** (pivoting)
Series 15050 or 15150:
150500-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 15050 or 15150
150500-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R19850
150500-Width-12T

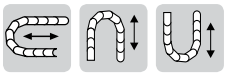
**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R19850
150500-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05 | 150500 | 151500 | -05-12 | | P | 1.97 (50) |
| -06 | 150500 | 151500 | -06-12 | | P | 2.56 (65) |
| -07 | 150500 | 151500 | -07-12 | T | P | 2.95 (75) |
| -10 | 150500 | 151500 | -10-12 | T | P | 3.94 (100) |
| -11 | 150500 | 151500 | -11-12 | | P | 4.41 (112) |
| -12 | 150500 | 151500 | -12-12 | T | P | 4.92 (125) |
| -13 | 150500 | 151500 | -13-12 | | P | 5.39 (137) |
| -15 | 150500 | 151500 | -15-12 | T | P | 5.91 (150) |
| -16 | 150500 | 151500 | -16-12 | | P | 6.38 (162) |
| -17 | 150500 | 151500 | -17-12 | T | P | 6.89 (175) |
| -18 | 150500 | 151500 | -18-12 | | P | 7.36 (187) |
| -20 | 150500 | 151500 | -20-12 | T | P | 7.87 (200) |
| -21 | 150500 | 151500 | -21-12 | | P | 8.35 (212) |
| -22 | 150500 | 151500 | -22-12 | | P | 8.86 (225) |
| -23 | 150500 | 151500 | -23-12 | | P | 9.33 (237) |
| -25 | 150500 | 151500 | -25-12 | T | P | 9.84 (250) |
| -26 | 150500 | 151500 | -26-12 | | P | 10.31 (262) |
| -27 | 150500 | 151500 | -27-12 | T | P | 10.83 (275) |
| -28 | 150500 | 151500 | -28-12 | | P | 11.30 (287) |
| -30 | 150500 | 151500 | -30-12 | T | P | 11.81 (300) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -31 | 150500 | 151500 | -31-12 | | P | 12.28 (312) |
| -32 | 150500 | 151500 | -32-12 | | P | 12.79 (325) |
| -33 | 150500 | 151500 | -33-12 | | P | 13.27 (337) |
| -35 | 150500 | 151500 | -35-12 | T | P | 13.78 (350) |
| -36 | 150500 | 151500 | -36-12 | | P | 14.25 (362) |
| -37 | 150500 | 151500 | -37-12 | | P | 14.76 (375) |
| -38 | 150500 | 151500 | -38-12 | | P | 15.24 (387) |
| -40 | 150500 | 151500 | -40-12 | T | P | 15.75 (400) |
| -41 | 150500 | 151500 | -41-12 | | P | 16.22 (412) |
| -42 | 150500 | 151500 | -42-12 | | P | 16.73 (425) |
| -43 | 150500 | 151500 | -43-12 | | P | 17.20 (437) |
| -45 | 150500 | 151500 | -45-12 | | P | 17.72 (450) |
| -46 | 150500 | 151500 | -46-12 | T | P | 18.19 (462) |
| -47 | 150500 | 151500 | -47-12 | | P | 18.70 (475) |
| -48 | 150500 | 151500 | -48-12 | | P | 19.17 (487) |
| -50 | 150500 | 151500 | -50-12 | | P | 19.69 (500) |
| -51 | 150500 | 151500 | -51-12 | | P | 20.16 (512) |
| -52 | 150500 | 151500 | -52-12 | | P | 20.67 (525) |
| -53 | 150500 | 151500 | -53-12 | | P | 21.14 (537) |
| -55 | 150500 | 151500 | -55-12 | | P | 21.65 (550) |
| -60 | 150500 | 151500 | -60-12 | | P | 23.62 (600) |

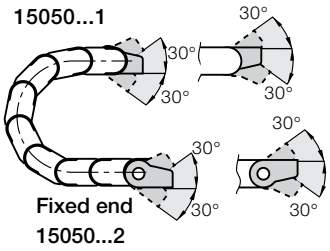
# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Mounting Brackets - Steel

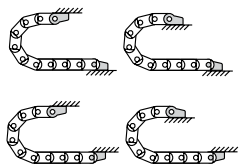




## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



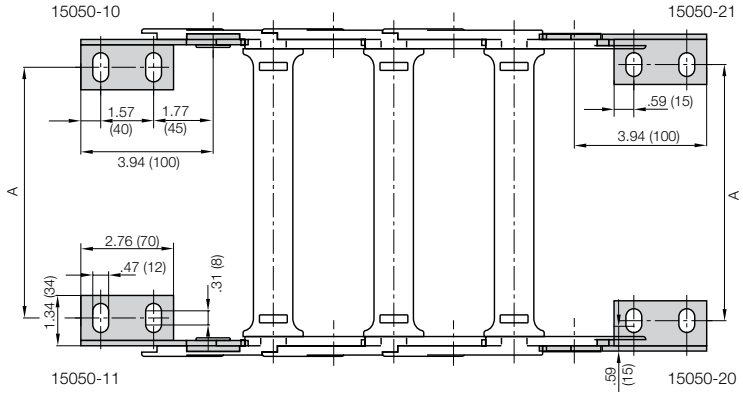


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 15050, 15150 or R19850:
**15050-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 15050, 15150 or R19850:
**15050-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 15050, 15150 or R19850:
**15050-2**




## Bracket Mounting Dimensions

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50) | 15050 | -12 | -1 | -2 | 1.02 (26) |
| 2.56 (65) | 15050 | -12 | -1 | -2 | 1.61 (41) |
| 2.95 (75) | 15050 | -12 | -1 | -2 | 2.01 (51) |
| 3.94 (100) | 15050 | -12 | -1 | -2 | 2.99 (76) |
| 4.41 (112) | 15050 | -12 | -1 | -2 | 3.46 (88) |
| 4.92 (125) | 15050 | -12 | -1 | -2 | 3.98 (101) |
| 5.39 (137) | 15050 | -12 | -1 | -2 | 4.45 (113) |
| 5.91 (150) | 15050 | -12 | -1 | -2 | 4.96 (126) |
| 6.38 (162) | 15050 | -12 | -1 | -2 | 5.43 (138) |
| 6.89 (175) | 15050 | -12 | -1 | -2 | 5.94 (151) |
| 7.36 (187) | 15050 | -12 | -1 | -2 | 6.42 (163) |
| 7.87 (200) | 15050 | -12 | -1 | -2 | 6.93 (176) |
| 8.35 (212) | 15050 | -12 | -1 | -2 | 7.40 (188) |
| 8.86 (225) | 15050 | -12 | -1 | -2 | 7.91 (201) |
| 9.33 (237) | 15050 | -12 | -1 | -2 | 8.39 (213) |
| 9.84 (250) | 15050 | -12 | -1 | -2 | 8.90 (226) |
| 10.31 (262) | 15050 | -12 | -1 | -2 | 9.37 (238) |
| 10.83 (275) | 15050 | -12 | -1 | -2 | 9.88 (251) |
| 11.30 (287) | 15050 | -12 | -1 | -2 | 10.35 (263) |
| 11.81 (300) | 15050 | -12 | -1 | -2 | 10.87 (276) |
| 12.28 (312) | 15050 | -12 | -1 | -2 | 11.34 (288) |

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 12.79 (325) | 15050 | -12 | -1 | -2 | 11.85 (301) |
| 13.27 (337) | 15050 | -12 | -1 | -2 | 12.32 (313) |
| 13.78 (350) | 15050 | -12 | -1 | -2 | 12.83 (326) |
| 14.25 (362) | 15050 | -12 | -1 | -2 | 15.28 (388) |
| 14.76 (375) | 15050 | -12 | -1 | -2 | 13.82 (351) |
| 15.24 (387) | 15050 | -12 | -1 | -2 | 14.29 (363) |
| 15.75 (400) | 15050 | -12 | -1 | -2 | 14.80 (376) |
| 16.22 (412) | 15050 | -12 | -1 | -2 | 15.28 (388) |
| 16.73 (425) | 15050 | -12 | -1 | -2 | 15.79 (401) |
| 17.20 (437) | 15050 | -12 | -1 | -2 | 16.26 (413) |
| 17.72 (450) | 15050 | -12 | -1 | -2 | 16.77 (426) |
| 18.19 (462) | 15050 | -12 | -1 | -2 | 17.24 (438) |
| 18.70 (475) | 15050 | -12 | -1 | -2 | 17.76 (451) |
| 19.17 (487) | 15050 | -12 | -1 | -2 | 18.23 (463) |
| 19.69 (500) | 15050 | -12 | -1 | -2 | 18.74 (476) |
| 20.16 (512) | 15050 | -12 | -1 | -2 | 19.21 (488) |
| 20.67 (525) | 15050 | -12 | -1 | -2 | 19.72 (501) |
| 21.14 (537) | 15050 | -12 | -1 | -2 | 20.20 (513) |
| 21.65 (550) | 15050 | -12 | -1 | -2 | 20.71 (526) |
| 23.62 (600) | 15050 | -12 | -1 | -2 | 22.68 (576) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

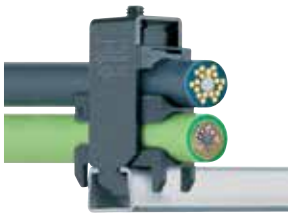
# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

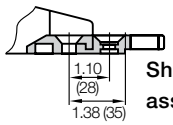
## Chainfix Clip

### Modular snap-on strain relief device

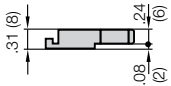
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

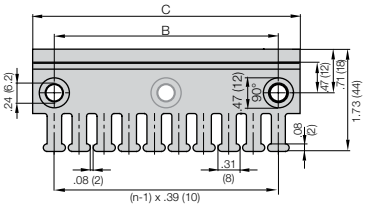



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Guide Trough



Width of Crossbar
15050-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.35 (85) | * |
| **-07** | 4.33 (110) | **96-50-225** |
| **-10** | 5.31 (135) | **96-50-250** |
| **-11** | 5.83 (148) | **96-50-275** |
| **-12** | 6.30 (160) | **96-50-275** |
| **-13** | 6.81 (173) | **96-50-300** |
| **-15** | 7.28 (185) | **96-50-300** |
| **-16** | 7.80 (198) | **96-50-325** |
| **-17** | 8.27 (210) | **96-50-325** |
| **-18** | 8.78 (223) | **96-50-350** |
| **-20** | 9.25 (235) | **96-50-350** |
| **-21** | 9.76 (248) | **96-50-375** |
| **-22** | 10.24 (260) | **96-50-375** |
| **-23** | 10.75 (273) | **96-50-400** |
| **-25** | 11.22 (285) | **96-50-400** |
| **-26** | 11.73 (298) | **96-50-425** |
| **-27** | 12.20 (310) | **96-50-425** |
| **-28** | 12.72 (323) | **96-50-450** |
| **-30** | 13.19 (335) | **96-50-450** |
| **-31** | 13.70 (348) | **96-50-475** |
| **-32** | 14.17 (360) | **96-50-475** |
| **-33** | 14.69 (373) | **96-50-500** |
| **-35** | 15.16 (385) | **96-50-500** |
| **-36** | 15.67 (398) | **96-50-525** |
| **-37** | 16.14 (410) | **96-50-525** |
| **-38** | 16.65 (423) | **96-50-550** |
| **-40** | 17.13 (435) | **96-50-550** |
| **-41** | 17.63 (448) | **96-50-575** |
| **-42** | 18.11 (460) | **96-50-575** |
| **-43** | 18.62 (473) | **96-50-600** |
| **-45** | 19.09 (485) | **96-50-600** |
| **-46** | 19.61 (498) | **96-50-625** |
| **-47** | 20.08 (510) | **96-50-625** |
| **-48** | 20.59 (523) | **96-50-650** |
| **-50** | 21.06 (535) | **96-50-650** |
| **-51** | 21.57 (548) | **96-50-675** |
| **-52** | 22.04 (560) | **96-50-675** |
| **-53** | 22.56 (573) | **96-50-700** |
| **-55** | 23.03 (585) | **96-50-700** |
| **-60** | 25.00 (635) | **96-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 99-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 96-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

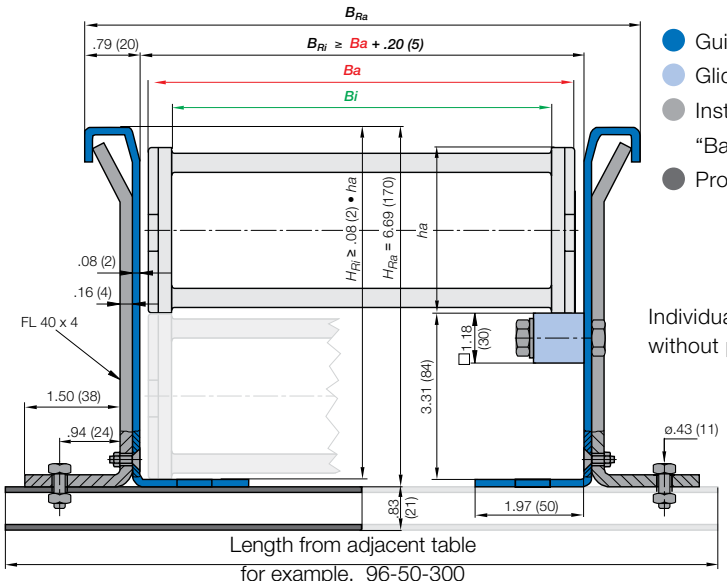
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 99-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15050/15150/R19850
# Application Example

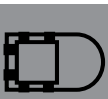
igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Spray-painting robot with System E4 E-Chain® used in an ATEX version made of igumid ESD. High accelerations of up to 19.69 f/s² (6 m/s²) and high braking rates with a weight of the robot of approximately one ton

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E4 Light
# Series 15250/15350



## Price Index

Series 15250 Series 15350

## Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

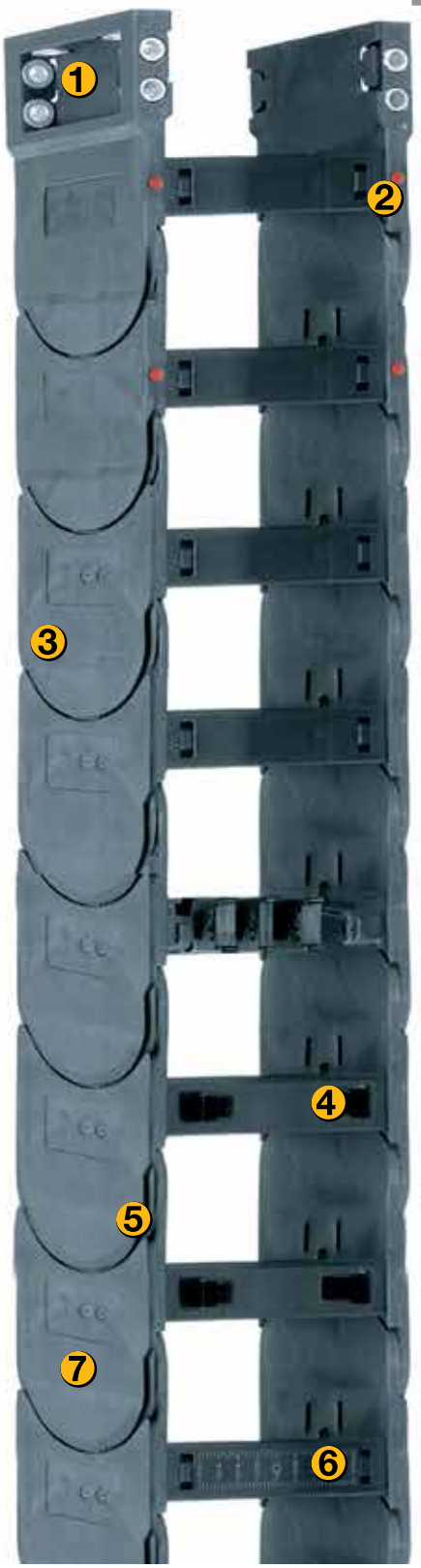
## Usage Guidelines

- If weight and price reduction is needed
- If an E-Chain®/E-Tube with an inner height of 3.39” (86 mm) is required

- If an extremely low-noise and low-vibration version is required
  ➤ **Series E6-80**
- If side-mounted chain with a longer unsupported travel is required
  ➤ **Series E4-80, Series 15050**
- If increased unsupported lengths and longer travels are required
  ➤ **Series E4-80, Series 15050**
- If high fill weights and/or stiff cables and hoses are used
  ➤ **Series 15050**
- If chip protection is necessary
  ➤ **Series 19850**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Noise dampening pads, optional = -10dB(A)
3. Lateral glide surfaces for side-mounted operation
4. 25% faster assembly with QuickLock Crossbar
5. High stability due to undercut design
6. Notch crossbar with visual scale
7. No camber: no rework due to special design




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **15250-12-250-0** | **E-Chain®** |
| With 2 separators **86-1-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **152500-12-12P** | **Mounting Bracket** |

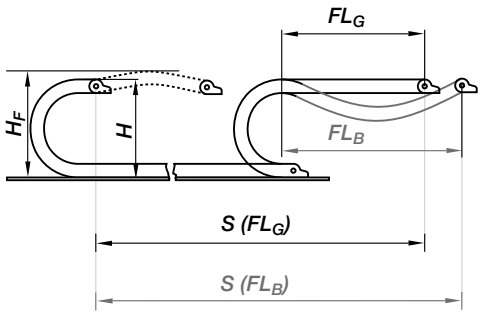
# E-Chain System® E4 Light Series 15250/15350 Installation Dimensions

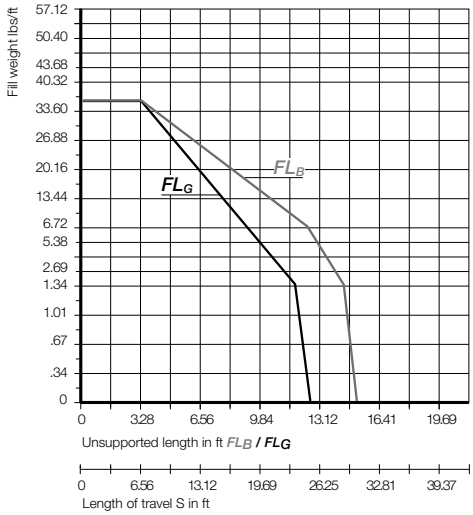


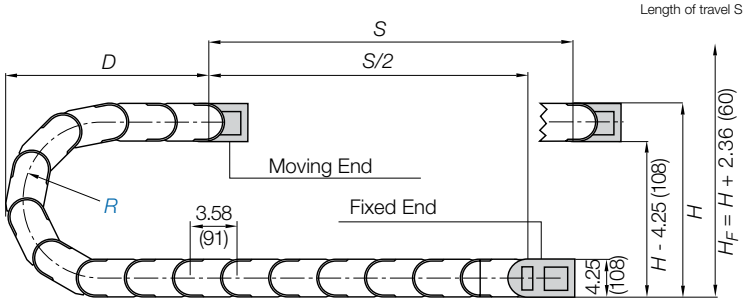
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H$ **+ 2.36 in. (60 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|
| $H^{-0}_{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 51.50 (1308) |
| D | 13.43 (341) | 15.39 (391) | 17.36 (441) | 19.33 (491) | 21.30 (541) | 23.27 (591) | 27.20 (691) | 31.14 (791) |
| K | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) | 81.50 (2070) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

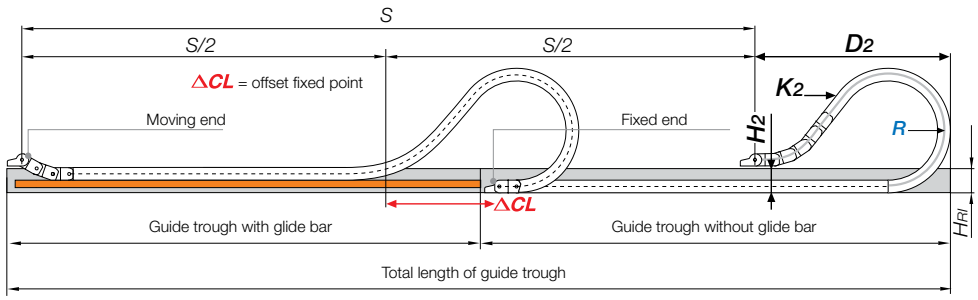
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 820 ft. (250m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 5.91 (150*) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 23.62 (600¹) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | * |
| $D_2$ +25 | 21.65 (550) | 31.50 (800) | 37.40 (950) | 47.24 (1200) | 61.02 (1550) | 66.93 (1700) | 85.63 (2175) | * |
| $K_2$ | 35.83 (910) | 50.16 (1274) | 64.49 (1638) | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 136.14 (3458) | * |
| ΔCL | 8.23 (209) | 16.10 (409) | 20.04 (509) | 27.91 (709) | 39.72 (1009) | 43.66 (1109) | 58.42 (1484) | * |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties ➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

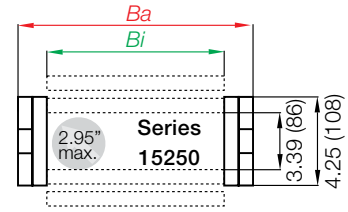
# E-Chain System® E4 Light
# Series 15250/15350

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

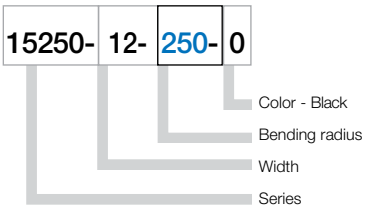
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 15250 - E-Chain® with crossbars every link

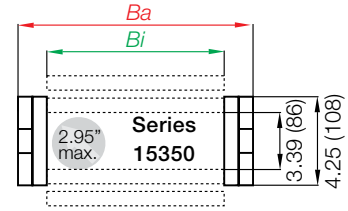


- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

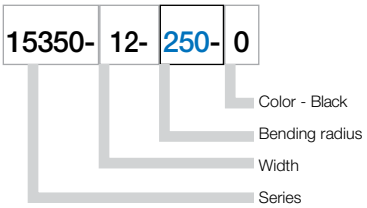



## Series 15350 - E-Chain® with crossbars every other link

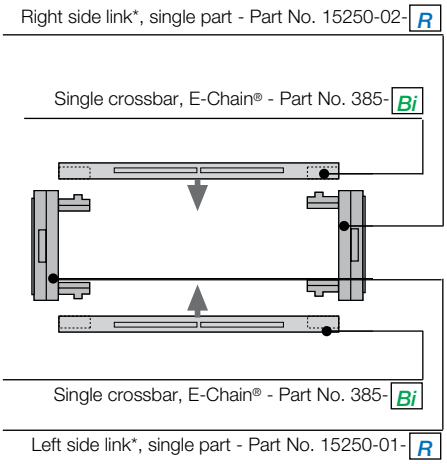


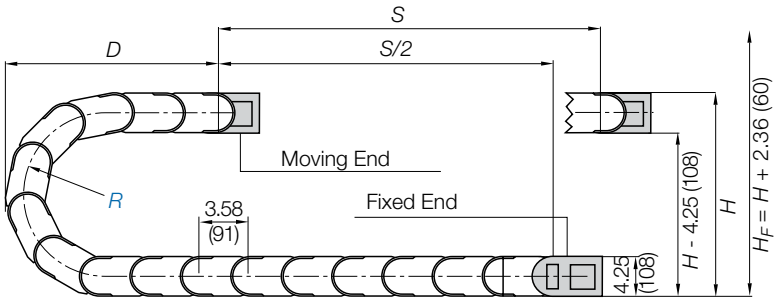
- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4 Light
# Series 15250/15350

Supplement part number with required radius. Example: 15250-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)



| Part Number. Crossbars Every link | Crossbars Every other | | | *Bi* in. (mm) | *Ba* in. (mm) | 15250 lbs/ft (kg/m) | 15350 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|
| 15250-05- | 15350-05- | | -0 | 1.97 (50) | 3.15 (80) | ≈ 2.45 (3.64) | ≈ 2.39 (3.56) |
| 15250-06- | 15350-06- | | -0 | 2.68 (68) | 3.86 (98) | ≈ 2.50 (3.72) | ≈ 2.42 (3.60) |
| 15250-07- | 15350-07- | | -0 | 2.95 (75) | 4.13 (105) | ≈ 2.51 (3.74) | ≈ 2.43 (3.61) |
| 15250-087- | 15350-087- | | -0 | 3.43 (87) | 4.61 (117) | ≈ 2.55 (3.79) | ≈ 2.44 (3.63) |
| 15250-097- | 15350-097- | | -0 | 3.82 (97) | 5.00 (127) | ≈ 2.57 (3.83) | ≈ 2.45 (3.65) |
| 15250-10- | 15350-10- | | -0 | 3.94 (100) | 5.12 (130) | ≈ 2.59 (3.85) | ≈ 2.46 (3.66) |
| 15250-11- | 15350-11- | | -0 | 4.25 (108) | 5.43 (138) | ≈ 2.60 (3.87) | ≈ 2.47 (3.67) |
| 15250-112- | 15350-112- | | -0 | 4.41 (112) | 5.63 (143) | ≈ 2.61 (3.88) | ≈ 2.47 (3.68) |
| 15250-12- | 15350-12- | | -0 | 4.92 (125) | 6.10 (155) | ≈ 2.65 (3.95) | ≈ 2.49 (3.71) |
| 15250-137- | 15350-137- | | -0 | 5.39 (137) | 6.57 (167) | ≈ 2.67 (3.98) | ≈ 2.51 (3.73) |
| 15250-15- | 15350-15- | | -0 | 5.91 (150) | 7.09 (180) | ≈ 2.71 (4.04) | ≈ 2.52 (3.75) |
| 15250-162- | 15350-162- | | -0 | 6.38 (162) | 7.60 (193) | ≈ 2.73 (4.06) | ≈ 2.53 (3.76) |
| 15250-17- | 15350-17- | | -0 | 6.61 (168) | 7.80 (198) | ≈ 2.76 (4.11) | ≈ 2.55 (3.79) |
| 15250-18- | 15350-18- | | -0 | 6.89 (175) | 8.07 (205) | ≈ 2.77 (4.12) | ≈ 2.55 (3.80) |
| 15250-187- | 15350-187- | | -0 | 7.36 (187) | 8.58 (218) | ≈ 2.79 (4.15) | ≈ 2.56 (3.81) |
| 15250-20- | 15350-20- | | -0 | 7.87 (200) | 9.05 (230) | ≈ 2.84 (4.23) | ≈ 2.59 (3.85) |
| 15250-212- | 15350-212- | | -0 | 8.35 (212) | 9.56 (243) | ≈ 2.86 (4.26) | ≈ 2.59 (3.86) |
| 15250-23- | 15350-23- | | -0 | 8.86 (225) | 10.04 (255) | ≈ 2.90 (4.32) | ≈ 2.61 (3.89) |
| 15250-237- | 15350-237- | | -0 | 9.33 (237) | 10.55 (268) | ≈ 2.92 (4.34) | ≈ 2.62 (3.90) |
| 15250-25- | 15350-25- | | -0 | 9.84 (250) | 11.02 (280) | ≈ 2.97 (4.42) | ≈ 2.65 (3.94) |
| 15250-262- | 15350-262- | | -0 | 10.31 (262) | 11.54 (293) | ≈ 3.00 (4.47) | ≈ 2.67 (3.97) |
| 15250-28- | 15350-28- | | -0 | 10.83 (275) | 12.01 (305) | ≈ 3.03 (4.51) | ≈ 2.68 (3.99) |
| 15250-29- | 15350-29- | | -0 | 11.30 (287) | 12.52 (318) | ≈ 3.04 (4.53) | ≈ 2.69 (4.00) |
| 15250-30- | 15350-30- | | -0 | 11.81 (300) | 12.99 (330) | ≈ 3.10 (4.61) | ≈ 2.71 (4.04) |
| 15250-312- | 15350-312- | | -0 | 12.28 (312) | 13.50 (343) | ≈ 3.11 (4.63) | ≈ 2.72 (4.05) |
| 15250-325- | 15350-325- | | -0 | 12.79 (325) | 13.98 (355) | ≈ 3.15 (4.69) | ≈ 2.73 (4.06) |
| 15250-337- | 15350-337- | | -0 | 13.27 (337) | 14.49 (368) | ≈ 3.18 (4.73) | ≈ 2.76 (4.10) |
| 15250-350- | 15350-350- | | -0 | 13.78 (350) | 14.96 (380) | ≈ 3.27 (4.87) | ≈ 2.80 (4.17) |
| 15250-362- | 15350-362- | | -0 | 14.25 (362) | 15.47 (393) | ≈ 3.31 (4.92) | ≈ 2.82 (4.20) |
| 15250-375- | 15350-375- | | -0 | 14.76 (375) | 15.94 (405) | ≈ 3.34 (4.97) | ≈ 2.84 (4.22) |
| 15250-387- | 15350-387- | | -0 | 15.24 (387) | 16.46 (418) | ≈ 3.37 (5.01) | ≈ 2.85 (4.24) |
| 15250-400- | 15350-400- | | -0 | 15.75 (400) | 16.93 (430) | ≈ 3.39 (5.05) | ≈ 2.86 (4.26) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 15250-30-300-0

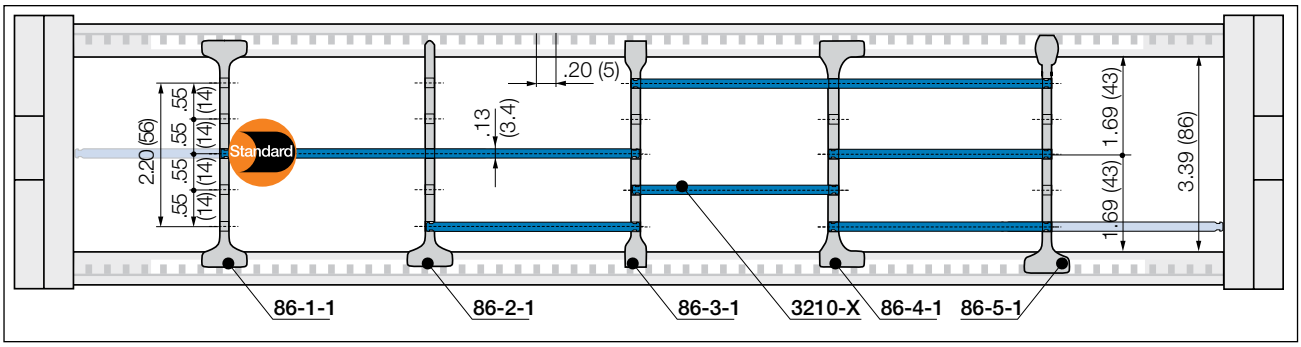
| | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 600 |
|---|---|---|---|---|---|---|---|---|
| *R* | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 23.62 (600) |
| $H^{0}_{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 51.50 (1308) |
| *D* | 13.43 (341) | 15.39 (391) | 17.36 (441) | 19.33 (491) | 21.30 (541) | 23.27 (591) | 27.20 (691) | 31.14 (791) |
| *K* | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) | 81.50 (2070) |

0=Standard color black. For other colors see Chapter 1
For large diameter hoses see page 6.170

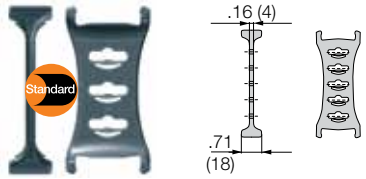
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15250/15350
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



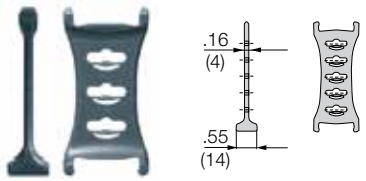

**In the standard configuration separators are assembled every 2nd E-Chain® link**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 86-1** |
| Assembled | **Part No. 86-1-1** |

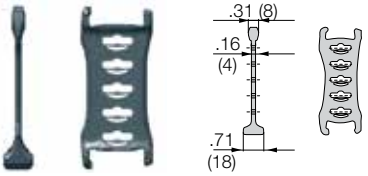
- **Standard separator 86-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator for QuickLock crossbar**

| | |
|---|---|
| Unassembled | **Part No. 86-2** |
| Assembled | **Part No. 86-2-1** |

- **Separator 86-2**
  **For even faster installation**
  Separator for igus® QuickLock crossbar 385-X-Q. Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

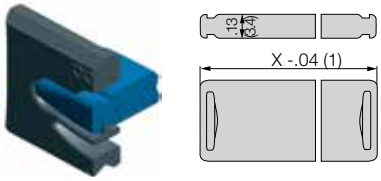



**Notch separator for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 86-5** |
| Assembled | **Part No. 86-5-1** |

- **Separator 86-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  Shelf locks into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

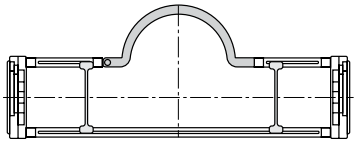
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

# E-Chain System® E4 Light
# Series 15250/15350
# Mounting Brackets - KMA

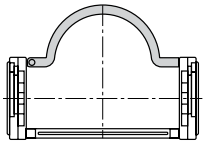
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



Round extender crossbar combined with standard snap-open crossbars.

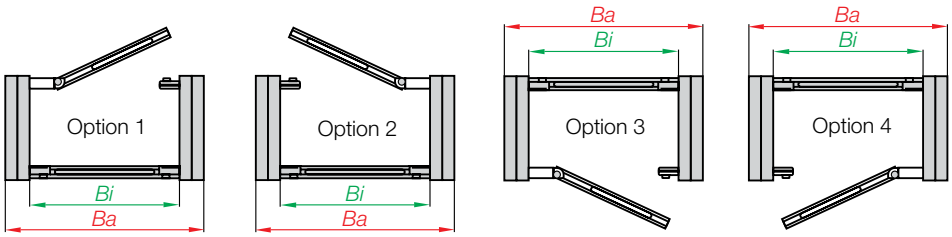


Attached directly to the side link.

| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.53 (115) | Round | No | Yes |
| **385-18-RD115** | 4.53 (115) | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

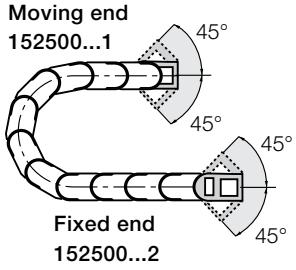
# E-Chain System® E4 Light
# Series 15250/15350
# Mounting Brackets - KMA

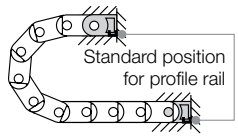
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: KMA pivoting

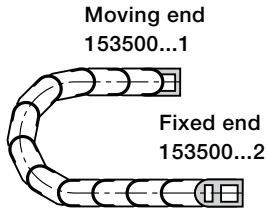
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

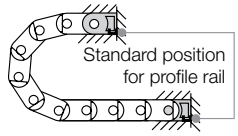





## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

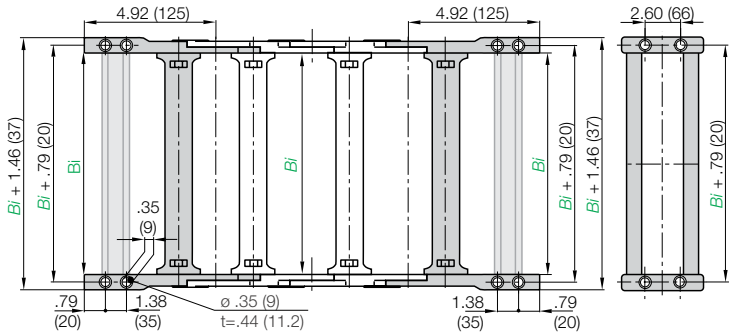





### Part Number Structure

| 152500 | 07- | 12 | P |
|---|---|---|---|

- P = With Profile Rail
- 12 = Complete Set
- 07- = Width
- 152500 = Pivoting
- 153500 = Locking




**Full set, for both ends:**

152500- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

152500- 05- 1 Mounting bracket **with bore**

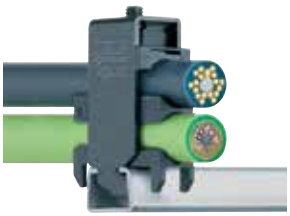
152500- 05- 2 Mounting bracket **with pin**

## Bracket Mounting Dimensions

| Width | Part No. Full Set Pivoting | Locking | | With Profile Rail | *Bi* in. (mm) | Width | Part No. Full Set Pivoting | Locking | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| -05 | 152500 | 153500 | -05-12 | P | 1.97 (50) | -212 | 152500 | 153500 | -212-12 | P | 8.35 (212) |
| -06 | 152500 | 153500 | -06-12 | P | 2.56 (65) | -23 | 152500 | 153500 | -23-12 | P | 8.86 (225) |
| -07 | 152500 | 153500 | -07-12 | P | 2.95 (75) | -237 | 152500 | 153500 | -237-12 | P | 9.33 (237) |
| -087 | 152500 | 153500 | -087-12 | P | 3.43 (87) | -25 | 152500 | 153500 | -25-12 | P | 9.84 (250) |
| -09 | 152500 | 153500 | -09-12 | P | 3.82 (97) | -262 | 152500 | 153500 | -262-12 | P | 10.31 (262) |
| -10 | 152500 | 153500 | -10-12 | P | 3.94 (100) | -28 | 152500 | 153500 | -28-12 | P | 10.83 (275) |
| -11 | 152500 | 153500 | -11-12 | P | 4.25 (108) | -29 | 152500 | 153500 | -29-12 | P | 11.30 (287) |
| -112 | 152500 | 153500 | -112-12 | P | 4.41 (112) | -30 | 152500 | 153500 | -30-12 | P | 11.81 (300) |
| -12 | 152500 | 153500 | -12-12 | P | 4.92 (125) | -312 | 152500 | 153500 | -312-12 | P | 12.28 (312) |
| -137 | 152500 | 153500 | -137-12 | P | 5.39 (137) | -325 | 152500 | 153500 | -325-12 | P | 12.79 (325) |
| -15 | 152500 | 153500 | -15-12 | P | 5.91 (150) | -337 | 152500 | 153500 | -337-12 | P | 13.27 (337) |
| -162 | 152500 | 153500 | -162-12 | P | 6.38 (162) | -350 | 152500 | 153500 | -350-12 | P | 13.78 (350) |
| -17 | 152500 | 153500 | -17-12 | P | 6.61 (168) | -362 | 152500 | 153500 | -362-12 | P | 14.25 (362) |
| -18 | 152500 | 153500 | -18-12 | P | 6.89 (175) | -375 | 152500 | 153500 | -375-12 | P | 14.76 (375) |
| -187 | 152500 | 153500 | -187-12 | P | 7.36 (187) | -387 | 152500 | 153500 | -387-12 | P | 15.24 (387) |
| -20 | 152500 | 153500 | -20-12 | P | 7.87 (200) | -400 | 152500 | 153500 | -400-12 | P | 15.75 (400) |

# E-Chain System® E4 Light
# Series 15250/15350
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (6 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

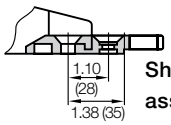
## Chainfix Clip

### Modular snap-on strain relief device

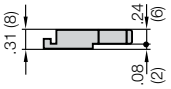
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (4-8) | CFC-08-M | CFC-08-C |
| .31-.47 | (8-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

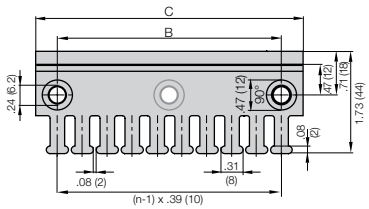



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

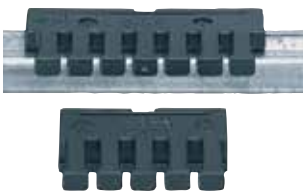
Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**



### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 15250/15350
# Guide Trough

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



Width of Crossbar
15250-**20**-300-0

$B_{Ri}$

Installation Part No.

| | | |
|---|---|---|
| **-05** | 3.35 (85) | * |
| **-06** | 4.06 (103) | **96-50-225** |
| **-07** | 4.33 (110) | **96-50-225** |
| **-087** | 4.80 (122) | **96-50-250** |
| **-09** | 5.20 (132) | **96-50-250** |
| **-10** | 5.31 (135) | **96-50-250** |
| **-11** | 5.63 (143) | **96-50-275** |
| **-112** | 5.83 (148) | **96-50-275** |
| **-12** | 6.30 (160) | **96-50-275** |
| **-13** | 6.77 (172) | **96-50-300** |
| **-15** | 7.28 (185) | **96-50-300** |
| **-16** | 7.80 (198) | **96-50-325** |
| **-17** | 7.99 (203) | **96-50-325** |
| **-17** | 8.27 (210) | **96-50-325** |
| **-18** | 8.78 (223) | **96-50-350** |
| **-20** | 9.25 (235) | **96-50-350** |
| **-21** | 9.76 (248) | **96-50-375** |
| **-22** | 10.24 (260) | **96-50-375** |
| **-23** | 10.75 (273) | **96-50-400** |
| **-25** | 11.22 (285) | **96-50-400** |
| **-26** | 11.73 (298) | **96-50-425** |
| **-27** | 12.20 (310) | **96-50-425** |
| **-28** | 12.72 (323) | **96-50-450** |
| **-30** | 13.19 (335) | **96-50-450** |
| **-31** | 13.70 (348) | **96-50-475** |
| **-32** | 14.17 (360) | **96-50-475** |
| **-33** | 14.69 (373) | **96-50-500** |
| **-35** | 15.16 (385) | **96-50-500** |
| **-36** | 15.67 (398) | **96-50-525** |
| **-37** | 16.14 (410) | **96-50-525** |
| **-38** | 16.65 (423) | **96-50-550** |
| **-40** | 17.13 (435) | **96-50-550** |

* Specialized guide trough available upon request

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 99-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 96-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

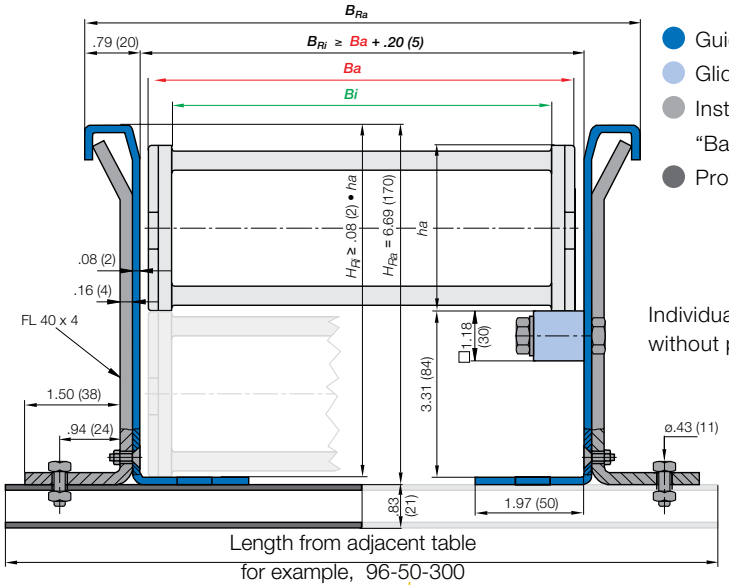
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 99-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example:
96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars Right: Guide troughs without glide bars**

**Installation sets as section connectors**



# E-Chain System® E4 Light
# Series 15250/15350
# Application Example

System E4 E-Chain® - can be filled with cables with diameters up to 3.94“ (100 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 1640/R1608

4.41” 4.41”

## Price Index

Series 1640 ●●●

Series R1608 ●●◑

## Special Features / Options

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

Side-mounted - unsupported

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ consult igus® |
| Vertical, standing ≤ 16.4 ft (5 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If a simpler, low-cost solution is required
- If optimized interior space is re-quired
- If the Series 400 is too large

- If maximum stability is required
  ➤ **Series 600/R608**

## Features & Benefits

1. Numerous interior separation possibilities
2. Hinged snap-open removable lids along outer radius of E-Tube
3. Lateral glide surfaces for side-mounted operation
4. Closed and open styles can be combined
5. Removable lids along inner radius
6. Wide, rounded plastic crossbars - cable friendly
7. Dirt repellant exterior
8. E-Chain® also available with reverse bending radii

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

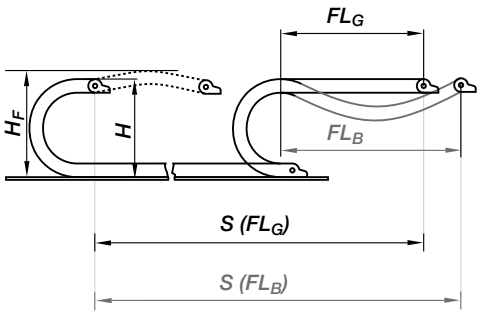
| | |
|---|---|
| 6.56 ft (2 m) **1640-30-300-0** | **E-Chain®** |
| With 2 separators **6411** assembled every 2nd link | **Interior Separation** |
| 1 Set **16000-12** | **Mounting Bracket** |

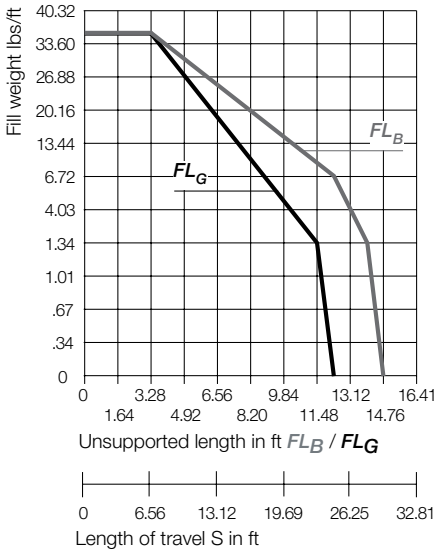
# E-Chain System® E4 Light Series 1640/R1608 Installation Dimensions

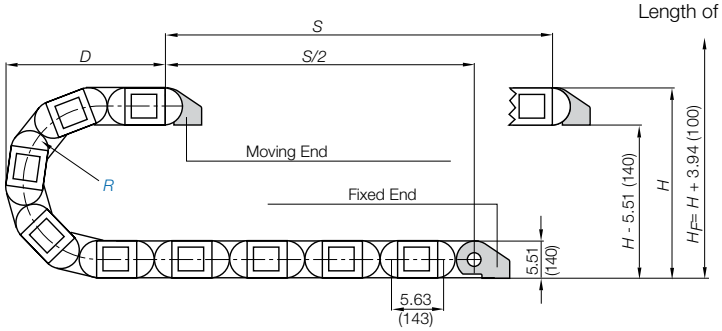
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 5.63" (143 mm)
**Links per ft (m): =** 2.13 (7)
**For center mount applications:**
**Chain length =** $S/2 + K$

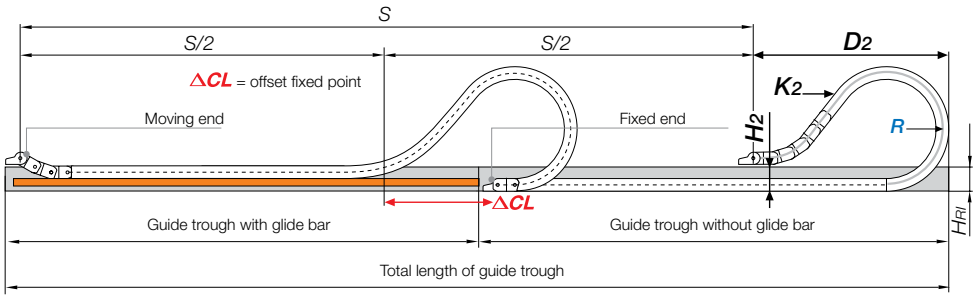
The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** with 3.36 lbs/ft (5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|---|
| H | 21.46 (545) | 25.39 (645) | 29.41 (747) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) |
| D | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) |
| K | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 1,312 ft. (400 m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) |
| $D_{2^{+25}}$ | 35.43 (900) | 39.37 (1000) | 43.31 (1100) | 49.21 (1200) | 57.09 (1450) | 62.99 (1600) | 66.93 (1700) | 74.80 (1900) | 80.71 (2050) |
| $K_2$ | 61.93 (1573) | 67.56 (1716) | 73.19 (1859) | 90.08 (2288) | 101.33 (2574) | 112.60 (2860) | 123.86 (3146) | 135.12 (3432) | 152.01 (3861) |
| ΔCL | 17.72 (450) | 19.69 (500) | 21.65 (550) | 25.59 (650) | 31.50 (800) | 35.43 (900) | 37.40 (950) | 43.31 (1100) | 47.24 (1200) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
$K$ = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties
➤ **Chapter 1**

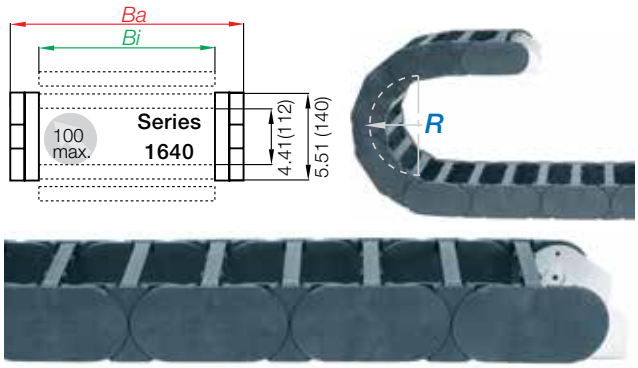


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 1640/R1608

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 1640 - E-Chain® with crossbars every link

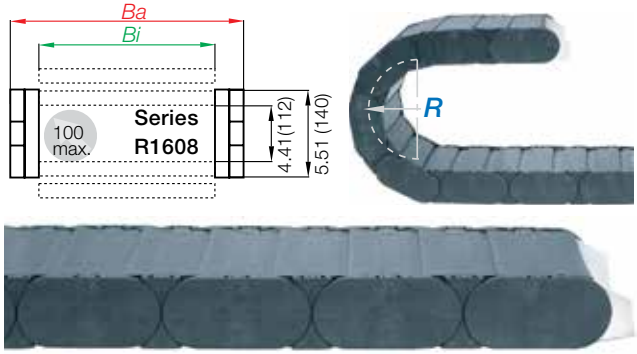



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 1640- | 30- | 300- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## Series R1608 - fully enclosed E-Tube

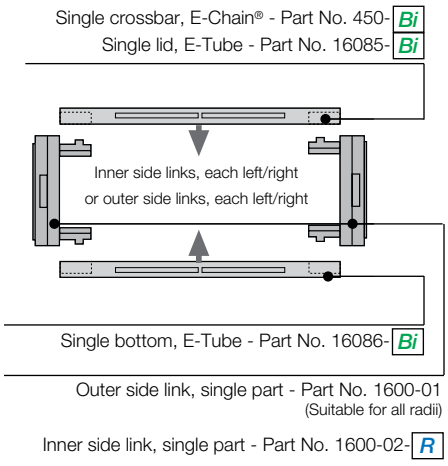


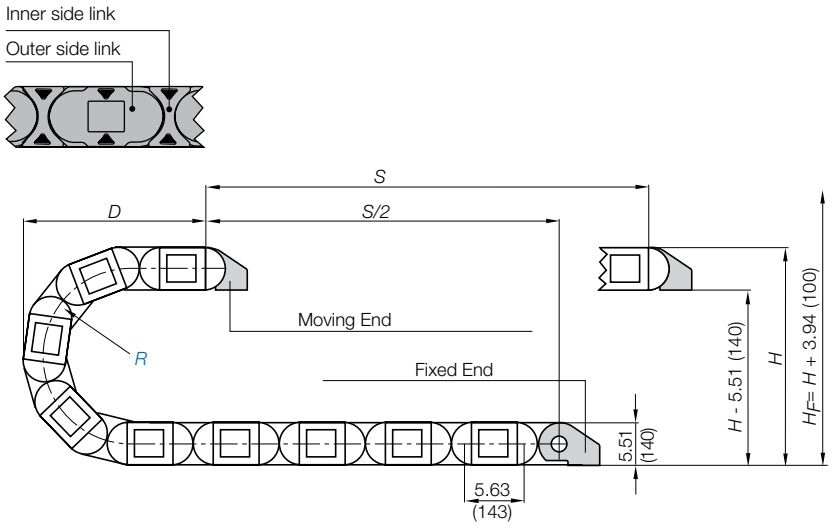

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 1608- | 30- | 300- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4 Light
# Series 1640/R1608

Supplement part number with required radius. Example: 1640-30-300-0
Pitch: 5.63 in. (143mm) per link links/ft (m) = 2.13 (7)



| Part Number. Crossbars Every link | Tube Version | | | Bi in. (mm) | Ba in. (mm) | 1640 lbs/ft (kg/m) | R1608 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|
| 1640-05- | | | -0 | 1.97 (50) | 3.31 (84) | ≈ 3.43 (5.10) | – |
| 1640-06- | | | -0 | 2.56 (65) | 3.90 (99) | ≈ 3.48 (5.18) | – |
| 1640-07- | | | -0 | 2.95 (75) | 4.29 (109) | ≈ 3.54 (5.27) | – |
| 1640-08- | | | -0 | 3.43 (87) | 4.76 (121) | ≈ 3.57 (5.31) | – |
| 1640-10- | | | -0 | 3.94 (100) | 5.28 (134) | ≈ 3.60 (5.36) | – |
| 1640-11- | | | -0 | 4.41 (112) | 5.75 (146) | ≈ 3.66 (5.45) | – |
| 1640-12- | | | -0 | 4.92 (125) | 6.26 (159) | ≈ 3.72 (5.54) | – |
| 1640-13- | | | -0 | 5.39 (137) | 6.73 (171) | ≈ 3.78 (5.63) | – |
| 1640-15- | | | -0 | 5.91 (150) | 7.24 (184) | ≈ 3.81 (5.67) | – |
| 1640-16- | | | -0 | 6.38 (162) | 7.72 (196) | ≈ 3.86 (5.74) | – |
| 1640-17- | | | -0 | 6.89 (175) | 8.23 (209) | ≈ 3.90 (5.81) | – |
| 1640-18- | | | -0 | 7.36 (187) | 8.70 (221) | ≈ 3.95 (5.88) | – |
| 1640-20- | 1608-20- | | -0 | 7.87 (200) | 9.21 (234) | ≈ 3.96 (5.89) | ≈ 5.17 (7.69) |
| 1640-21- | | | -0 | 8.35 (212) | 9.69 (246) | ≈ 4.00 (5.96) | – |
| 1640-22- | | | -0 | 8.86 (225) | 10.20 (259) | ≈ 4.04 (6.01) | – |
| 1640-23- | | | -0 | 9.33 (237) | 10.67 (271) | ≈ 4.09 (6.09) | – |
| 1640-25- | 1608-25- | | -0 | 9.84 (250) | 11.18 (284) | ≈ 4.13 (6.15) | ≈ 5.64 (8.39) |
| 1640-26- | | | -0 | 10.31 (262) | 11.65 (296) | ≈ 4.17 (6.20) | – |
| 1640-27- | | | -0 | 10.83 (275) | 12.17 (309) | ≈ 4.21 (6.27) | – |
| 1640-28- | | | -0 | 11.30 (287) | 12.64 (321) | ≈ 4.23 (6.29) | – |
| 1640-30- | 1608-30- | | -0 | 11.81 (300) | 13.15 (334) | ≈ 4.26 (6.34) | ≈ 6.11 (9.09) |
| 1640-31- | | | -0 | 12.28 (312) | 13.62 (346) | ≈ 4.31 (6.41) | – |
| 1640-32- | | | -0 | 12.79 (325) | 14.13 (359) | ≈ 4.35 (6.48) | – |
| 1640-33- | | | -0 | 13.27 (337) | 14.61 (371) | ≈ 4.43 (6.59) | – |
| 1640-35- | 1608-35- | | -0 | 13.78 (350) | 15.12 (384) | ≈ 4.44 (6.61) | ≈ 6.58 (9.79) |
| 1640-36- | | | -0 | 14.25 (362) | 15.59 (396) | ≈ 4.48 (6.67) | – |
| 1640-37- | | | -0 | 14.76 (375) | 16.10 (409) | ≈ 4.51 (6.71) | – |
| 1640-38- | | | -0 | 15.24 (387) | 16.57 (421) | ≈ 4.54 (6.76) | – |
| 1640-40- | 1608-40- | | -0 | 15.75 (400) | 17.09 (434) | ≈ 4.63 (6.89) | ≈ 7.05 (10.49) |
| 1640-41- | | | -0 | 16.22 (412) | 17.56 (446) | ≈ 4.70 (6.99) | – |
| 1640-42- | | | -0 | 16.73 (425) | 18.07 (459) | ≈ 4.76 (7.08) | – |
| 1640-43- | | | -0 | 17.20 (437) | 18.54 (471) | ≈ 4.79 (7.13) | – |
| 1640-45- | | | -0 | 17.72 (450) | 19.06 (484) | ≈ 4.82 (7.17) | – |
| 1640-46- | | | -0 | 18.19 (462) | 19.53 (496) | ≈ 4.82 (7.18) | - |
| 1640-47- | | | -0 | 18.70 (475) | 20.04 (509) | ≈ 4.85 (7.22) | – |
| 1640-48- | | | -0 | 19.17 (487) | 20.51 (521) | ≈ 4.89 (7.27) | – |
| 1640-50- | | | -0 | 19.69 (500) | 21.02 (534) | ≈ 4.94 (7.35) | – |
| 1640-51- | | | -0 | 20.16 (512) | 21.50 (546) | ≈ 4.95 (7.36) | – |
| 1640-52- | | | -0 | 20.67 (525) | 22.01 (559) | ≈ 4.97 (7.39) | – |
| 1640-53- | | | -0 | 21.14 (537) | 22.48 (571) | ≈ 5.03 (7.49) | – |
| 1640-55- | | | -0 | 21.65 (550) | 22.99 (584) | ≈ 5.24 (7.80) | – |
| 1640-60- | | | -0 | 23.62 (600) | 24.96 (634) | ≈ 5.32 (7.92) | – |

Choose from the radii below for all of the above sizes

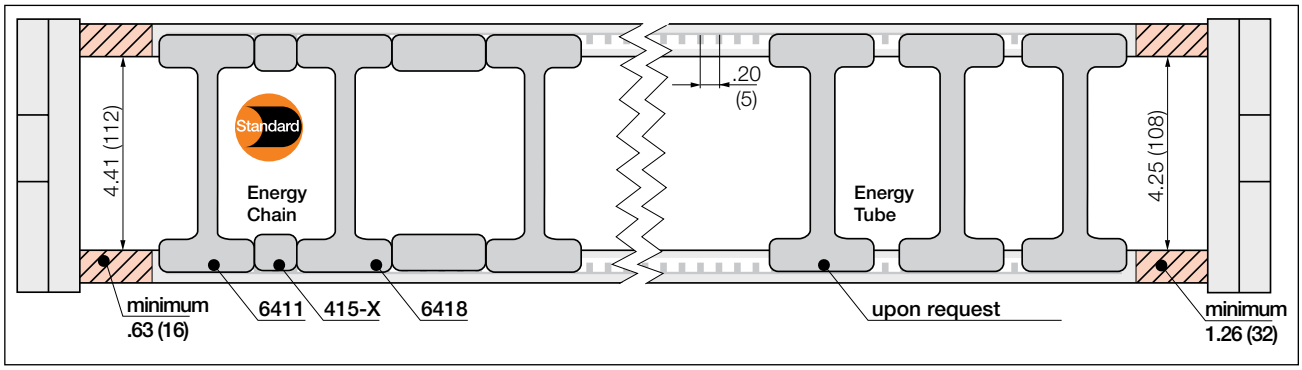
*Radius* (mm) Example: 1640-30-300-0

| | 200** | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 |
|---|---|---|---|---|---|---|---|---|---|
| *R* | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 9.84 (450) | 19.68 (500) | 21.65 (550) | 23.62 (600) |
| *H* | 21.46 (545) | 25.39 (645) | 29.41 (747) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) |
| *D* | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) |
| *K* | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) |

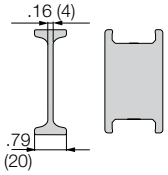
0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.181. For large diameter hoses see page 6.181

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4 Light
# Series 1640/R1608
# Interior Separation



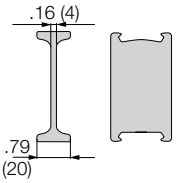

Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 6401** |
| Assembled | **Part No. 6411** |

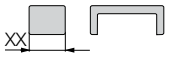
- **Standard separator 6401 for E-Chains®**
  For a vertical subdivision. Offers safe stability due to its wide base design, also when used with thick cables or hoses (Separator for E-Tubes 1608 upon request)




**Separator, locking (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 6408** |
| Assembled | **Part No. 6418** |

- **Separator 6408 for E-Chains®**
  For applications exposed to very high humidity (>85%). Locks with extra retention force.
  Tip: one locking separator per E-Chain® link for better mounting.




**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

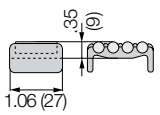
XX = width of the spacer

- **NOTE ON SPACERS for E-Chains®**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | Width in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | .79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

## Additional elements - interior separation



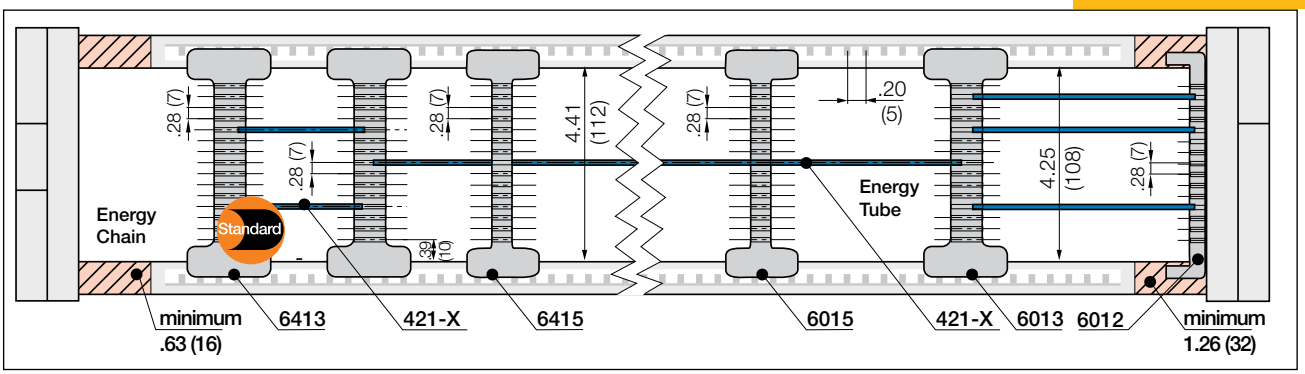

**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

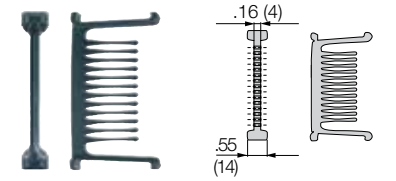
**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4 Light
# Series 1640/R1608
# Interior Separation



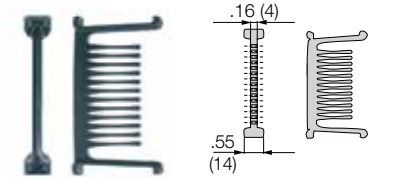

Note Please maintain a lateral spacing of 1.26" (32 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 6405** |
| Assembled | **Part No. 6415** |

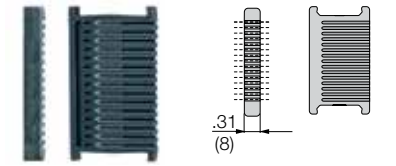
- **Open, slotted separator 6405**
  **For E-Chains® (unilateral open)**
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 6005** |
| Assembled | **Part No. 6015** |

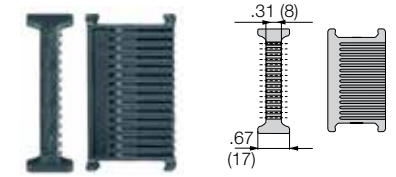
- **Open, slotted separator 6005**
  **For E-Tubes (unilateral open)**
  This separator can be retrofitted into an existing interior separation system without removing the shelves. The top and bottom botches cannot be occupied by shelves




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 6403** |
| Assembled | **Part No. 6413** |

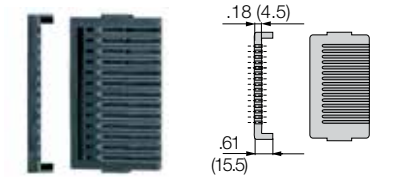
- **Vertical separator 6403**
  **For E-Chains®**
  This component is used to form the basic pattern of a shelf system. The shelf 420-X can be installed at 15 different heights in .28" (7 mm) increments




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 6003** |
| Assembled | **Part No. 6013** |

- **Locking vertical separator 6003**
  **For E-Tubes**
  This component is used to form the basic pattern of a shelf system.

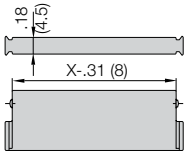



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 6002** |
| Assembled | **Part No. 6012** |

- **Side plate 6002**
  **For E-Chains® / Tubes**
  This component is used to form the basic pattern of a shelf system. Allows modular shelving close to the side links.

## Full-width shelves - for the standard interior separation




**Full width shelf**

| | |
|---|---|
| Unassembled | **Part No. 420-X** |
| Assembled | **Part No. 421-X** |

- **Full width shelf 420-X**
  These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **420-18** | **421-18** |
| .91 | (23) | **420-23** | **421-23** |
| .98 | (25) | **420-25** | **421-25** |
| 1.10 | (28) | **420-28** | **421-28** |
| 1.30 | (33) | **420-33** | **421-33** |
| 1.69 | (43 | **420-43** | **421-43** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.97 | (50) | **420-50** | **421-50** |
| 2.44 | (62) | **420-62** | **421-62** |
| 2.95 | (75) | **420-75** | **421-75** |
| 3.46 | (88) | **420-88** | **421-88** |
| 3.94 | (100) | **420-100** | **421-100** |
| 4.92 | (125) | **420-125** | **421-125** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 5.91 | (150) | **420-150** | **421-150** |
| 6.89 | (175) | **420-175** | **421-175** |
| 7.36 | (187) | **420-187** | **421-187** |
| 7.87 | (200) | **420-200** | **421-200** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®

Telephone 1-800-521-2747
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4 Light
# Series 1640/R1608
# Special Accessories

Part number example for E-Chain®

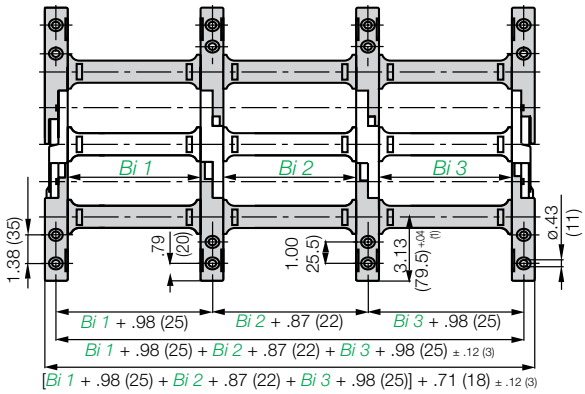
**1640-10/20/10-** 200 **-0**

**1640-*Bi1*/*Bi2*/*Bi3*-** R **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

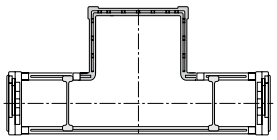
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



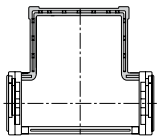
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

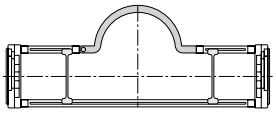
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



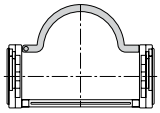
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | 4.52 (115) | Round | No | Yes |
| **450-17-RD115** | 4.52 (115) | Round | Yes | No |
| **450-25-D150** | 5.91 (150) | Square | Yes | No |
| **450-30-D200** | 7.09 (180) | Square | Yes | No |
| **450-35-D250** | 7.68 (195) | Square | Yes | No |
| **450-40-D300** | 9.65 (245) | Square | Yes | No |
| **450-20-HD150** | 5.91 (150) | Square | No | Yes |
| **450-25-HD200** | 7.09 (180) | Square | No | Yes |
| **450-30-HD250** | 7.68 (195) | Square | No | Yes |

## E4 clip on cable binder

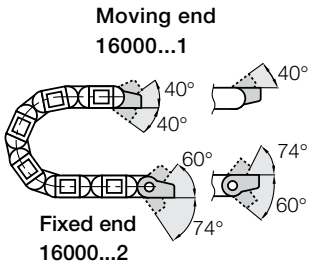
- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

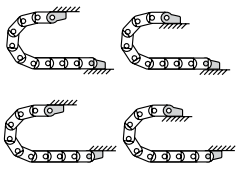
| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

# E-Chain System® E4 Light
# Series 1640/R1608
# Mounting Brackets - Steel

## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -

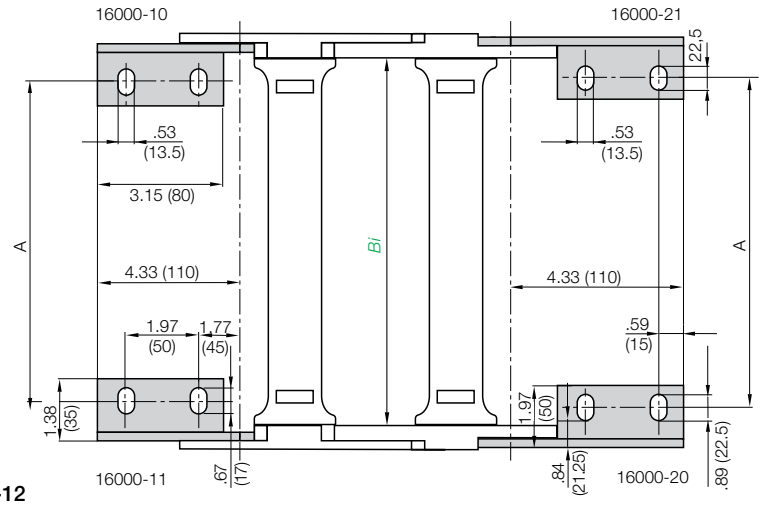
**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 1640 or R1608
**16000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 1640 or R1608
**16000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 1640 or R1608
**16000-2**

**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-1**




## Bracket Mounting dimensions

| Width of Chain *Bi* | Part Number | Mounting Brackets Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50) | 16000 | -12 | -1 | -2 | .79 (20) |
| 2.56 (65) | 16000 | -12 | -1 | -2 | 1.38 (35) |
| 2.95 (75) | 16000 | -12 | -1 | -2 | 1.77 (45) |
| 3.43 (87) | 16000 | -12 | -1 | -2 | 2.24 (57) |
| 3.94 (100) | 16000 | -12 | -1 | -2 | 2.76 (70) |
| 4.41 (112) | 16000 | -12 | -1 | -2 | 3.23 (82) |
| 4.92 (125) | 16000 | -12 | -1 | -2 | 3.74 (95) |
| 5.39 (137) | 16000 | -12 | -1 | -2 | 4.21 (107) |
| 5.91 (150) | 16000 | -12 | -1 | -2 | 4.72 (120) |
| 6.38 (162) | 16000 | -12 | -1 | -2 | 5.20 (132) |
| 6.89 (175) | 16000 | -12 | -1 | -2 | 5.71 (145) |
| 7.36 (187) | 16000 | -12 | -1 | -2 | 6.18 (157) |
| 7.87 (200) | 16000 | -12 | -1 | -2 | 6.69 (170) |
| 8.35 (212) | 16000 | -12 | -1 | -2 | 7.16 (182) |
| 8.86 (225) | 16000 | -12 | -1 | -2 | 7.68 (195) |
| 9.33 (237) | 16000 | -12 | -1 | -2 | 8.15 (207) |
| 9.84 (250) | 16000 | -12 | -1 | -2 | 8.66 (220) |
| 10.31 (262) | 16000 | -12 | -1 | -2 | 9.13 (232) |
| 10.83 (275) | 16000 | -12 | -1 | -2 | 9.65 (245) |
| 11.30 (287) | 16000 | -12 | -1 | -2 | 10.12 (257) |
| 11.81 (300) | 16000 | -12 | -1 | -2 | 10.63 (270) |

| Width of Chain *Bi* | Part Number | Mounting Brackets Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 12.28 (312) | 16000 | -12 | -1 | -2 | 11.10 (282) |
| 12.79 (325) | 16000 | -12 | -1 | -2 | 11.61 (295) |
| 13.27 (337) | 16000 | -12 | -1 | -2 | 12.09 (307) |
| 13.78 (350) | 16000 | -12 | -1 | -2 | 12.60 (320) |
| 14.25 (362) | 16000 | -12 | -1 | -2 | 13.07 (332) |
| 14.76 (375) | 16000 | -12 | -1 | -2 | 13.58 (345) |
| 15.24 (387) | 16000 | -12 | -1 | -2 | 14.06 (357) |
| 15.75 (400) | 16000 | -12 | -1 | -2 | 14.57 (370) |
| 16.22 (412) | 16000 | -12 | -1 | -2 | 15.04 (382) |
| 16.73 (425) | 16000 | -12 | -1 | -2 | 15.55 (395) |
| 17.20 (437) | 16000 | -12 | -1 | -2 | 16.02 (407) |
| 17.72 (450) | 16000 | -12 | -1 | -2 | 16.54 (420) |
| 18.19 (462) | 16000 | -12 | -1 | -2 | 17.01 (432) |
| 18.70 (475) | 16000 | -12 | -1 | -2 | 17.52 (445) |
| 19.17 (487) | 16000 | -12 | -1 | -2 | 17.99 (457) |
| 19.69 (500) | 16000 | -12 | -1 | -2 | 18.50 (470) |
| 20.16 (512) | 16000 | -12 | -1 | -2 | 18.98 (482) |
| 20.67 (525) | 16000 | -12 | -1 | -2 | 19.49 (495) |
| 21.14 (537) | 16000 | -12 | -1 | -2 | 19.96 (507) |
| 21.65 (550) | 16000 | -12 | -1 | -2 | 20.47 (520) |
| 23.62 (600) | 16000 | -12 | -1 | -2 | 22.44 (570) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

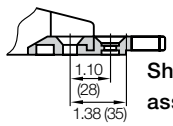
# E-Chain System® E4 Light
# Series 1640/R1608
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

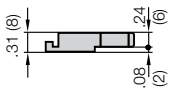


## Tiewrap plates as an individual part

Available as an individual component, can be mounted externally in a profile rail.

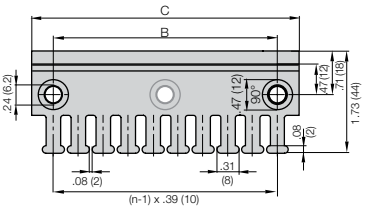



Shown assembled




Single tiewrap plate

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




For more information please refer to strain relief section of Chapter 10

# E-Chain System® E4 Light
# Series 1640/R1608
# Guide Trough

Width of Crossbar
1640-**12**-250-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.50 (89) | * |
| **-06** | 4.09 (104) | **97-50-225** |
| **-07** | 4.49 (114) | **97-50-250** |
| **-10** | 5.47 (139) | **97-50-275** |
| **-11** | 5.94 (151) | **97-50-275** |
| **-12** | 6.46 (164) | **97-50-300** |
| **-13** | 6.93 (176) | **97-50-300** |
| **-15** | 7.44 (189) | **97-50-325** |
| **-16** | 7.91 (201) | **97-50-325** |
| **-17** | 8.43 (214) | **97-50-350** |
| **-18** | 8.90 (226) | **97-50-350** |
| **-20** | 9.41 (239) | **97-50-375** |
| **-21** | 9.88 (251) | **97-50-375** |
| **-22** | 10.39 (264) | **97-50-400** |
| **-23** | 10.87 (276) | **97-50-400** |
| **-25** | 11.38 (289) | **97-50-425** |
| **-26** | 11.85 (301) | **97-50-425** |
| **-27** | 12.36 (314) | **97-50-450** |
| **-28** | 12.83 (326) | **97-50-450** |
| **-30** | 13.35 (339) | **97-50-475** |
| **-31** | 13.82 (351) | **97-50-475** |
| **-32** | 14.33 (364) | **97-50-500** |
| **-33** | 14.80 (376) | **97-50-500** |
| **-35** | 15.31 (389) | **97-50-525** |
| **-36** | 15.79 (401) | **97-50-525** |
| **-37** | 16.30 (414) | **97-50-550** |
| **-38** | 16.77 (426) | **97-50-550** |
| **-40** | 17.28 (439) | **97-50-575** |
| **-41** | 17.76 (451) | **97-50-575** |
| **-42** | 18.27 (464) | **97-50-600** |
| **-43** | 18.74 (476) | **97-50-600** |
| **-45** | 19.25 (489) | **97-50-625** |
| **-46** | 19.72 (501) | **97-50-625** |
| **-47** | 20.24 (514) | **97-50-650** |
| **-48** | 20.71 (526) | **97-50-650** |
| **-50** | 21.22 (539) | **97-50-675** |
| **-51** | 21.69 (551) | **97-50-675** |
| **-52** | 22.20 (564) | **97-50-700** |
| **-53** | 22.68 (576) | **97-50-700** |
| **-55** | 23.19 (589) | **97-50-725** |
| **-60** | 25.16 (639) | **97-50-775** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 97-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 97-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**

Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

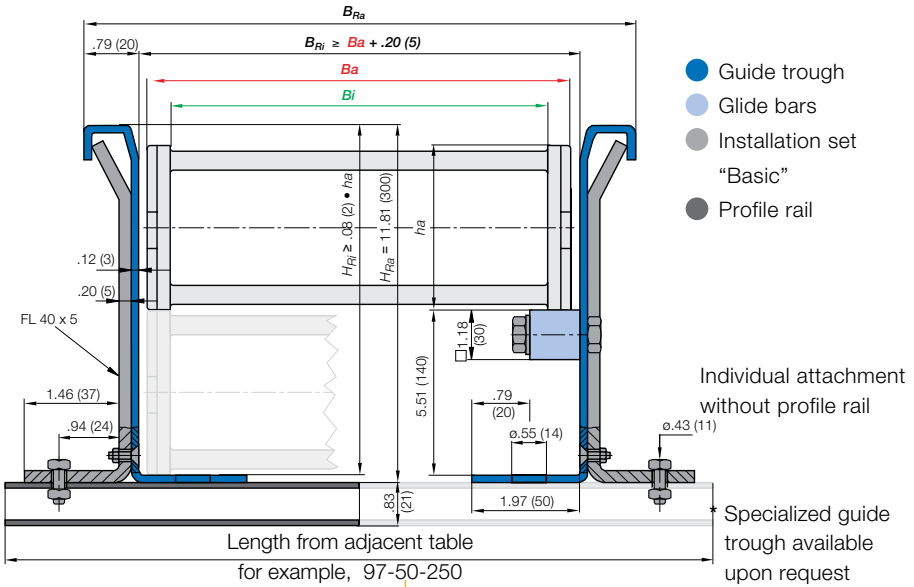
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 97-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

# E4-1 Light

# E4-1 Light High dynamics, light and cost-effective

All around E-Chains® and E-Tubes for high dynamics. The E4-1 Light series was developed to combine the advantages of the E2/000 and the E4-1 series. The stability of the E4-1 system and the ease of accessibility of the E2/000. The stability and price of the E4-1 Light falls between these systems and makes it the perfect alternative for your application.

- Weight reduction and high stability at the same time
- 30% lighter and lower-priced than E4-1
- Crossbars, lid and shelves pivotable on either side
- Very tightly fitting lids and bottoms, virtually no gaps and openings
- Snap-open along the inner and outer radfius
- Ideal ratio of internal and external dimensions due to thinner outer links and optimized crossbar design
- Inner diameter completely accessible for easy filling

Typical industries and applications

- Machine tools
- General mechanical engineering

Low noise operation due to integrated “brakes”

ESD classification: Electrically conductive
ESD/ATEX version upon request

High torsional rigidity

New snap-open machanism, Series E4-1 and R4-1 Light, choice of snap-open on left or right

Denseness test at the igus® lab: High chip protection in the test. Stop-dogs completely free of xhips

Lightweight, stable E4-1 Light E-Chains® now available as a closed E-Tube. Very tight closing, rounded lids

# E-Chain System® E4-1 Light Selection Guide

## Crossbars every link

Crossbars on both sides pivotable, snap-open along the inner and outer radius

| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* *in.* | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **E4-38L** | 1.50 | (38) | 1.97-6.89 | (50-175) | 2.59-7.52 | (66-191) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **E4-48L** | 1.89 | (48) | 1.97-6.89 | (50-175) | 2.76-7.68 | (70-195) | 2.52 | (64) | 2.95-13.78 | (75-350) |

## E-Tubes

Fully enclosed, lids on both sides pivotable, snap-open along the inner and outer radius

| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* *in.* | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **R4-38L** | 1.50 | (38) | 3.94 | (100) | 4.57 | (116) | 2.13 | (54) | 4.92-11.81 | (125-300) |
| **R4-48L** | 1.89 | (48) | 2.95-6.89 | (75-175) | 3.74-7.68 | (95-195) | 2.52 | (64) | 4.92-13.78 | (125-350) |

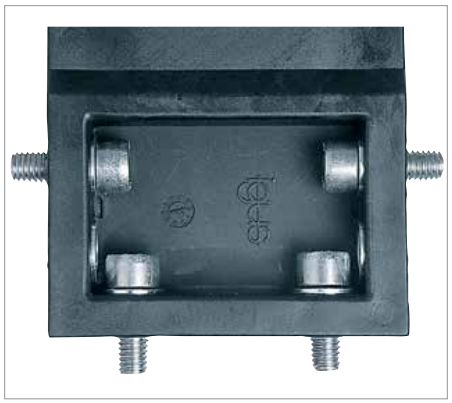
## E4-1 Light E-Chains® - options and accessories

pivoting and locking KMA connection elements possible

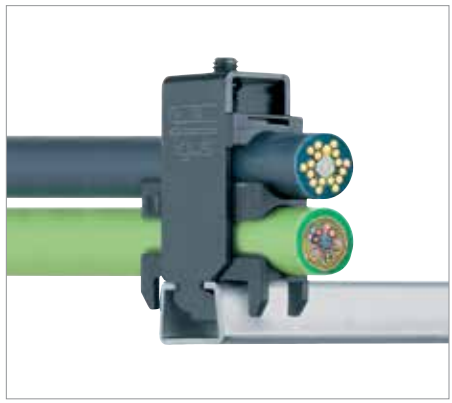
Extender crossbars increase the inner height by 1.91” (48.5 mm)

Guide troughs available in steel or aluminum versions

New, particularly cable-friendly interior separation program available



KMA mounting brackets with attachment options on all sides



Wide variety of strain relief options available

# E-Chain System® E4-1 Light
# Assembly instructions

## E4-1 Light E-Chains® - Assembly

1

Line up the two inner side links, side by side

2

Attach and outer side link between and push side links together

## E4-1 Light E-Chains® - Assembly

3

Snap the crossbars into place

## E4-1 Light E-Chains® - Opening

4

To open, place screwdriver on the inside of the fastening mechanism and pry to the outside.

# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L

1.50 1.50

## Price Index

Series E4-38L Series R4-38L

## Special Options Available

Low noise version available with special rubber pads

Clean-Room

Cleanroom test upon request

EX

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.28 ft (1 m) |
| Rotary requires further calculation |

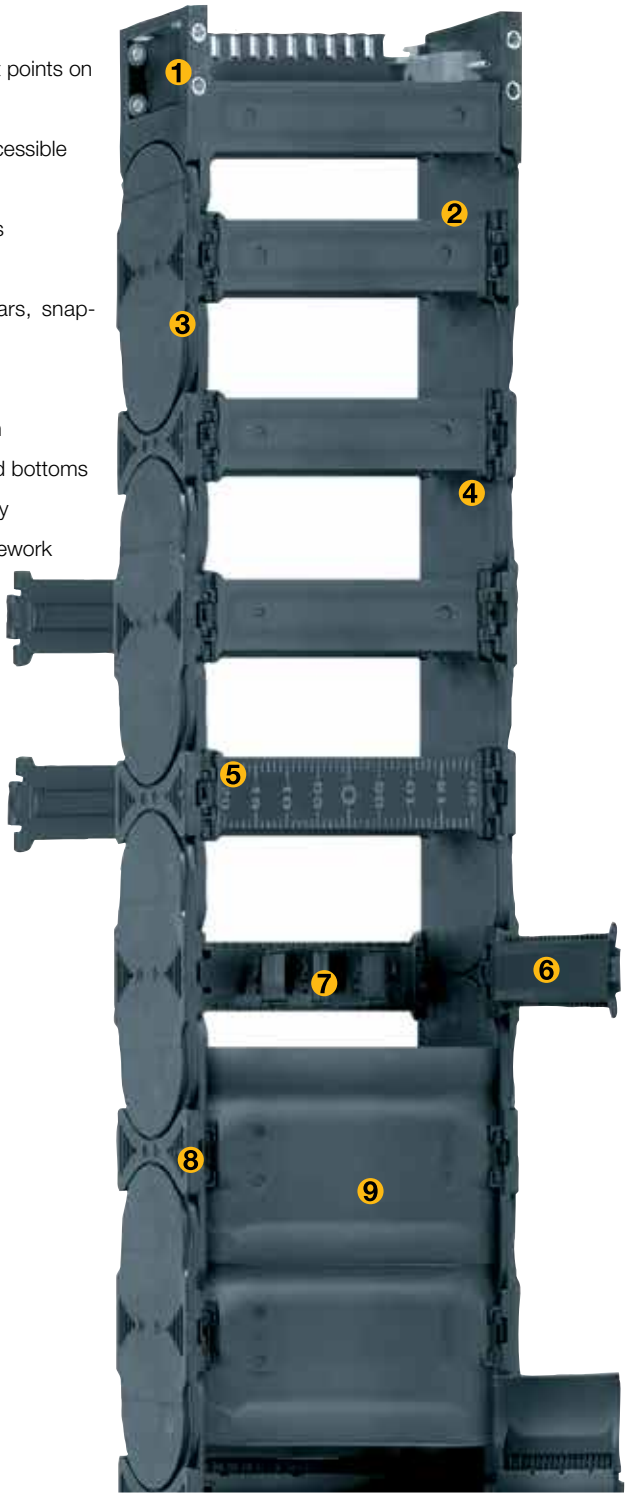
## Usage Guidelines

- If a lightweight, cost-effective E-Chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When an extremely low-noise, low-vibration E-Chain® is required
  ➤ **Series E6-35**
- If higher stability is required
  ➤ **Series E4-32**
- For long travels with gliding applications
  ➤ **Series E4-32**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-38L-100-200NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 13.12 ft (4 m) **E4-38L-100-200-0** | **E-Chain®** |
| With 2 separators **38-1-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-380-100-12P** | **Mounting Bracket** |

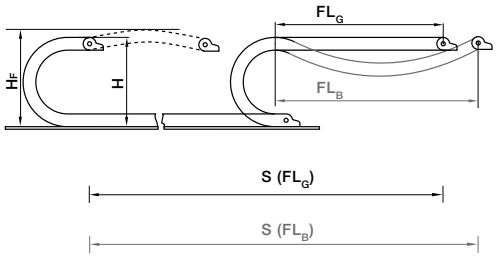
# E-Chain System® E4-1 Light Series E4-38L/R4-38L Installation Dimensions

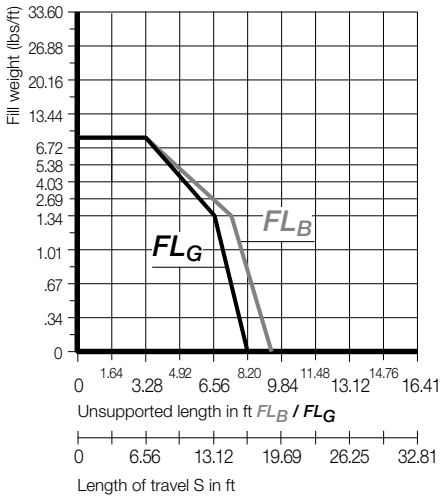


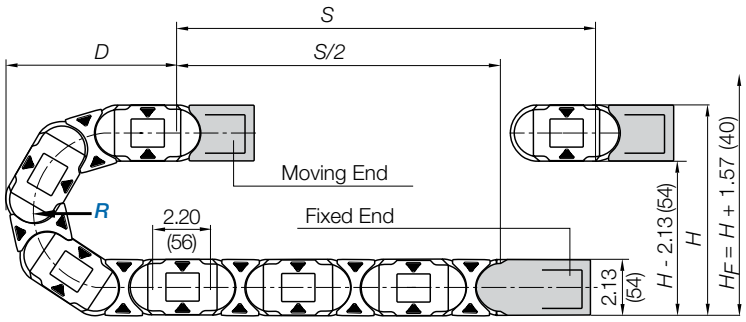
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $_{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

## Legend

- S = Length of travel
- R = Bending radius
- H = Nominal clearance height
- D = Overlength E-Chain® radius in final position
- $K$ = $\pi \bullet R$ + *safety buffer*
- $H_F$ = Required clearance height
- $H_{RI}$ = Trough inner height
- $H_2$ = *Mounting height
- $D_2$ = Overlength - long travels, gliding
- $K_2$ = *Add-on

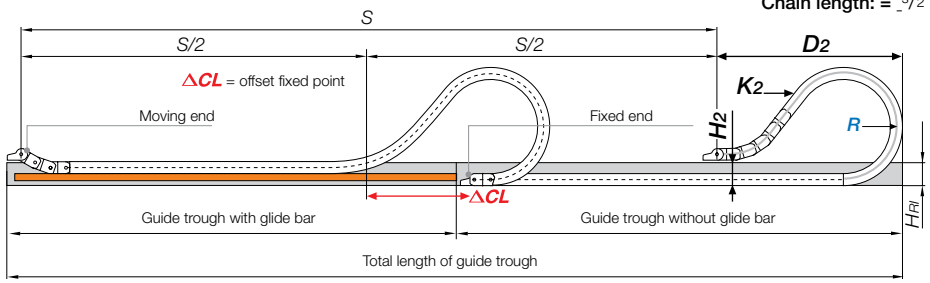
*If the mounting bracket location is set lower

| R | 2.48 (063**) | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|
| H | 7.09 (180) | 8.03 (204) | 10.00 (254) | 11.97 (304) | 13.94 (354) | 15.91 (404) | 17.87 (454) | 21.81 (554) | 25.75 (654) |
| D | 6.85 (174) | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 14.21 (361) | 16.18 (411) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) | 41.54 (1055) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)**

**For center mount applications:**
**Chain length: =** $_{S}/_{2} + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 2.48 (063**) | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250[2]) | 11.81 (300[2]) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | – | – | 3.78 (96) | 3.78 (96) | 3.78 (96) | 3.78 (96) | 3.78 (96) | 3.78 (96) | – | – |
| $D_2$ | – | – | 14.57 (370) | 18.50 (470) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 35.43 (900) | – | – |
| $K_2$ | – | – | 24.25 (616) | 30.87 (784) | 35.27 (896) | 44.10 (1120) | 50.71 (1288) | 57.32 (1456) | – | – |
| ΔCL | – | – | 6.30 (160) | 8.27 (210) | 9.45 (240) | 14.57 (370) | 18.11 (460) | 21.26 (540) | – | – |

**In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.**
**Radius not available for E-Tubes 2) Radius not suitable for long travel applications. Please consult igus®**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

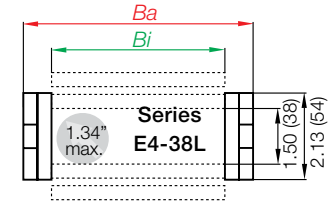
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-38L - E-Chain® with crossbars every link



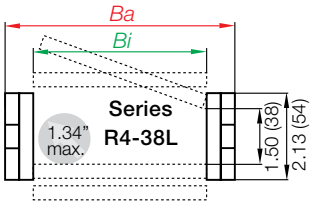

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-38L | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- E4-38L – Series

## Series R4-38L - fully enclosed E-Tube



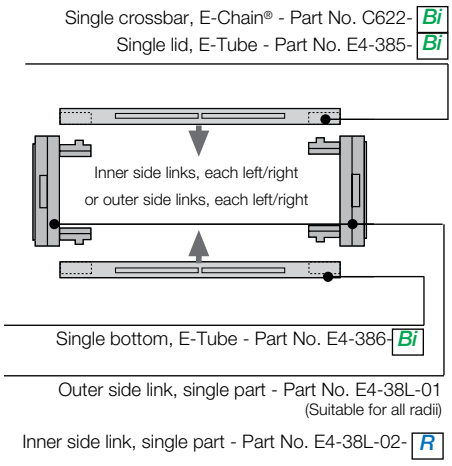

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

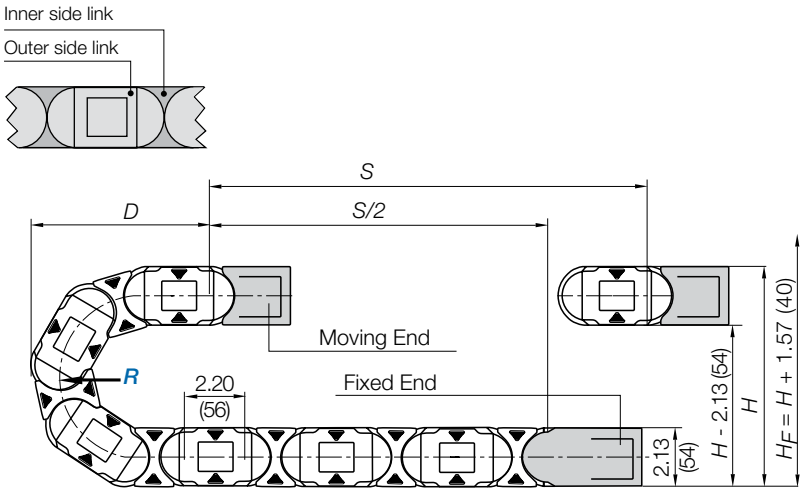
**Part Number Structure**

R4-38L- | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- R4-38L- – Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Product Range



Supplement part number with required radius. Example: E4-38L-100-[200]-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

| Part Number | | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|---|
| Crossbars Every link | Tube Version | | | in. (mm) | in. (mm) | E4-38L lbs/ft (kg/m) | R4-38L lbs/ft (kg/m) |
| E4-38L-050- | R4-38L-050 | [ ] | -0 | 1.97 (50) | 2.60 (66) | ≈ 0.76 (1.13) | ≈ 0.81(1.20) |
| E4-38L-062- | | [ ] | -0 | 2.46 (62.5) | 3.09 (78.5) | ≈ 0.80 (1.19) | – |
| E4-38L-075- | R4-38L-075- | [ ] | -0 | 2.95 (75) | 3.58 (91) | ≈ 0.85 (1.26) | ≈ 0.93 (1.38) |
| E4-38L-087- | | [ ] | -0 | 3.44 (87.5) | 4.07 (103.5) | ≈ 0.87 (1.30) | – |
| E4-38L-100- | R4-38L-100- | [ ] | -0 | 3.94 (100) | 4.57 (116) | ≈ 0.92 (1.37) | ≈ 1.08 (1.60) |
| E4-38L-105- | | [ ] | -0 | 4.13 (105) | 4.92 (125) | ≈ 0.93 (1.39) | – |
| E4-38L-112- | | [ ] | -0 | 4.43 (112.5) | 5.06 (128.5) | ≈ 0.97 (1.44) | – |
| E4-38L-125- | R4-38L-125- | [ ] | -0 | 4.92 (125) | 5.55 (141) | ≈ 1.01 (1.50) | ≈ 1.18 (1.75) |
| E4-38L-137- | | [ ] | -0 | 5.41 (137.5) | 6.04 (153.5) | ≈ 1.04 (1.55) | – |
| E4-38L-150- | R4-38L-150 | [ ] | -0 | 5.91 (150) | 6.54 (166) | ≈ 1.11 (1.65) | ≈ 1.29 (1.92) |
| E4-38L-162- | | [ ] | -0 | 6.40 (162.5) | 7.03 (178.5) | ≈ 1.14 (1.69) | – |
| E4-38L-175- | | [ ] | -0 | 6.89 (175) | 7.52 (191) | ≈ 1.17 (1.74) | – |
| E4-38L-200- | | [ ] | -0 | 7.87 (200) | 8.50 (216) | ≈ 1.25 (1.86) | – |
| E4-38L-250- | | [ ] | -0 | 9.84 (250) | 10.47 (266) | ≈ 1.42 (2.11) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-38L-100-[200]-0

| | [063**] | [075**] | [100**] | [125] | [150] | [175] | [200] | [250] | [300] |
|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.48 (063*) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| *H* | 7.09 (180) | 8.03 (204) | 10.00 (254) | 11.97 (304) | 13.94 (354) | 15.91 (404) | 17.87 (454) | 21.81 (554) | 25.75 (654) |
| *D* | 6.85 (174) | 7.32 (186) | 8.31 (211) | 9.29 (236) | 10.28 (261) | 11.26 (286) | 12.24 (311) | 14.21 (361) | 16.18 (411) |
| *K* | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 35.43 (900) | 41.54 (1055) |

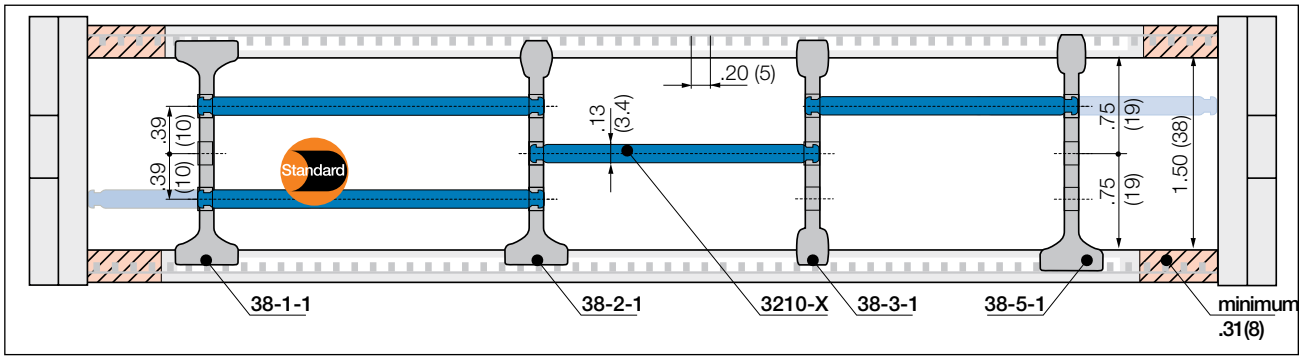
** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For large diameter hoses see page 6.196

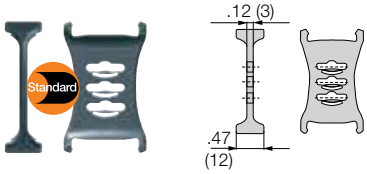
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



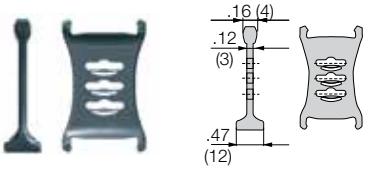

Note E-Tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 38-1** |
| Assembled | **Part No. 38-1-1** |

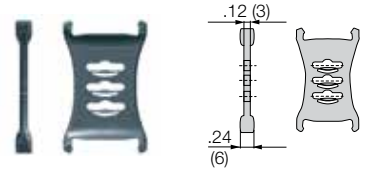
- **Standard separator 38-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains® and E-Tubes.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 38-2** |
| Assembled | **Part No. 38-2-1** |

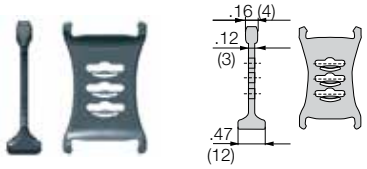
- **Separator 38-2**
  **For even faster installation**
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip).




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 38-3** |
| Assembled | **Part No. 38-3-1** |

- **Separator 38-3**
  **For many thin cables**
  Separator with a narrow base for a large number of thin cables side by side. Saves space in E-Chains®.

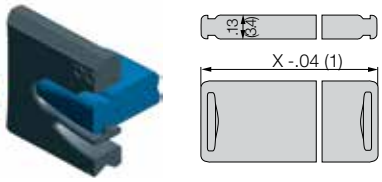



**Notch separator for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 38-5** |
| Assembled | **Part No. 38-5-1** |

- **Separator 38-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation



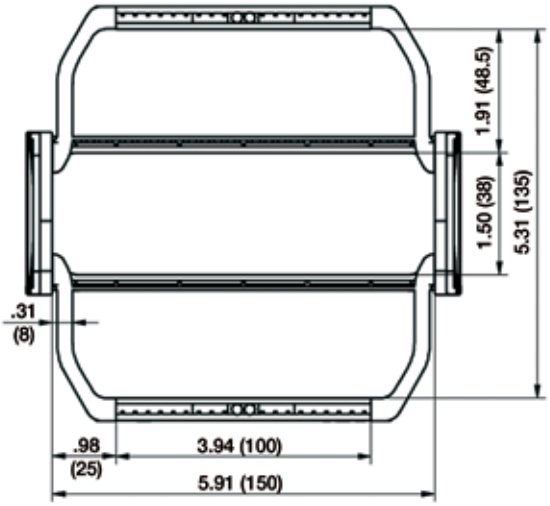

**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-75** | **3210-75** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

# E-Chain System® E4-1 Light
# Series E4-38L
# Special Accessories




## Extender crossbars - Enormous of the interior for the smooth guiding of larger hoses

- An extender crossbar increases the inner height by 1.91 in. (48.5 mm).
- Extender crossbars can be assembled in various ways:
  One-sided, on both sides, alternating with normal crossbars and combinations out of these possibilities
- Optionally openable along the inner and outer radius, swivelling
- Cable friendly design of extender crossbar
- High holding force of the extender crossbar

| Extender crossbar possibilities | Part No. Extender crossbar |
|---|---|
| Extender crossbar in inner and outer radius | E4-38L-XXXB48-*R*-0 |
| Extender crossbar in inner and outer radius - every other link | H4-38L-XXXB48-*R*-0 |
| Extender crossbar in inner radius | E4-38L-XXXBZ48-*R*-0 |
| Extender crossbar in innder radius - every other link | H4-38L-XXXBZ48-*R*-0 |
| Extender crossbar in outer radius | E4-38L-XXXBE48-*R*-0 |
| Extender crossbar in iuter radius - every other link | H4-38L-XXXBE48-*R*-0 |
| Extender crossbar and crossbars alternating | E4-38L-XXXHB48-*R*-0 |
| Extender crossbar and crossbars alternating in inner radius | E4-38L-XXXHBZ48-*R*-0 |
| Extender crossbar and crossbars alternating in outer radius | E4-38L-XXXHBE48-*R*-0 |

Supplement Part No. with the required width index **XXX** = *Bi* and *R* = radius.

Example: **E4-38L-100B48-200-0**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

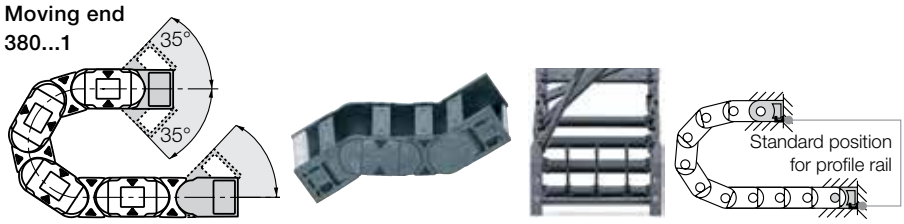
# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Mounting Brackets - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

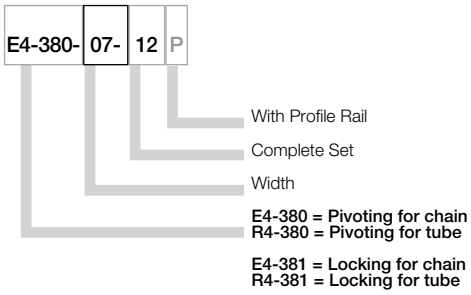
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

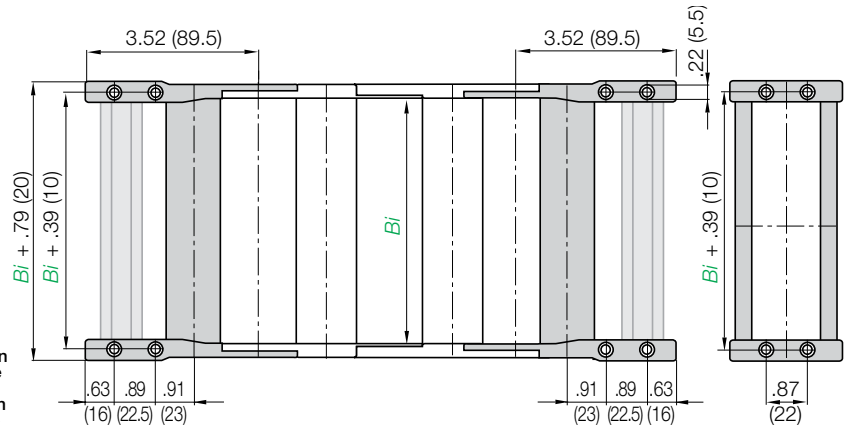



## Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

### Part Number Structure




**Due to the design of the E4-38L series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain.**
**For locking brackets change part number to 381**

**Part No. Full Set** (pivoting)
Series E4-38L
E4-380-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-38L
E4-380-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R4-38L
R4-380-Width-12

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-38L
R4-380-Width-12P

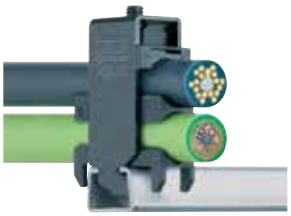
| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -050 | E4-380 | E4-381 | -050-12 | P | 1.97 (50) |
| -062 | E4-380 | E4-381 | -062-12 | P | 2.68 (62.5) |
| -075 | E4-380/R4-380 | E4-381/R4-381 | -075-12 | P | 2.95 (75) |
| -087 | E4-380 | E4-381 | -087-12 | P | 3.43 (87.5) |
| -100 | E4-380/R4-380 | E4-381/R4-381 | -100-12 | P | 3.94 (100) |
| -105 | E4-380 | E4-381 | -105-12 | P | 4.25 (105) |
| -112 | E4-380 | E4-381 | -112-12 | P | 4.41 (112.5) |

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -125 | E4-380/R4-380 | E4-381/R4-381 | -125-12 | P | 4.92 (125) |
| -137 | E4-380 | E4-381 | -137-12 | P | 5.39 (137.5) |
| -150 | E4-380 | E4-381 | -150-12 | P | 5.91 (150) |
| -162 | E4-380 | E4-381 | -162-12 | P | 6.38 (162.5) |
| -175 | E4-380 | E4-381 | -175-12 | P | 6.61 (175) |
| -200 | E4-380/ | E4-381 | -200-12 | P | 7.87 (200) |
| -250 | E4-380 | E4-381 | -250-12 | P | 9.84 (250) |

# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Strain Relief



## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

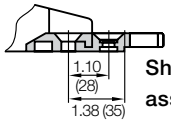
## Chainfix Clip

### Modular snap-on strain relief device

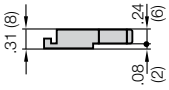
Chainfix clips are available for cable diameters ranging from .16" (4mm) to .94" (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

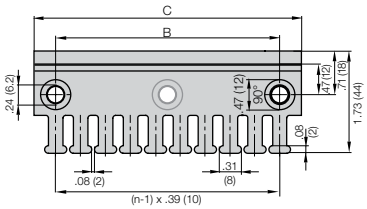



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4-1 Light
# Series E4-38L/R4-38L
# Guide Trough

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 98-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

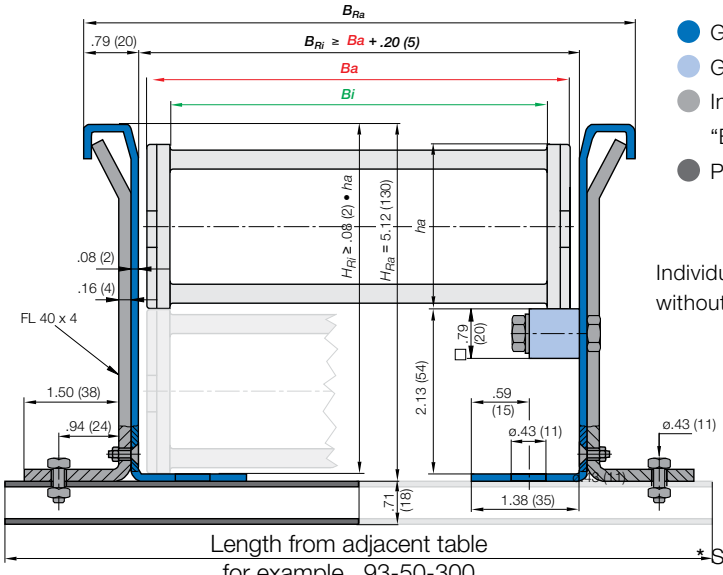
**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 98-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**93-50-XXX**
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
E4-32-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-050** | 2.80 (71) | **93-50-200** |
| **-062** | 3.27 (83) | **93-50-200** |
| **-075** | 3.78 (96) | **93-50-225** |
| **-087** | 4.25 (108) | **93-50-225** |
| **-100** | 4.76 (121) | **93-50-250** |
| **-105** | 5.12 (130) | **93-50-250** |
| **-112** | 5.24 (133) | **93-50-250** |
| **-125** | 5.75 (146) | **93-50-275** |
| **-137** | 6.22 (158) | **93-50-275** |
| **-150** | 6.73 (171) | **93-50-300** |
| **-162** | 7.20 (183) | **93-50-300** |
| **-175** | 7.72 (196) | **93-50-325** |
| **-200** | 8.70 (221) | **93-50-350** |
| **-250** | 10.67 (271) | **93-50-400** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L

1.50 1.50

## Price Index

Series E4-48L Series R4-48L

## Special Options Available

Low noise version available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. ≤ 3.94 ft (1.2 m) |
| Rotary requires further calculation |

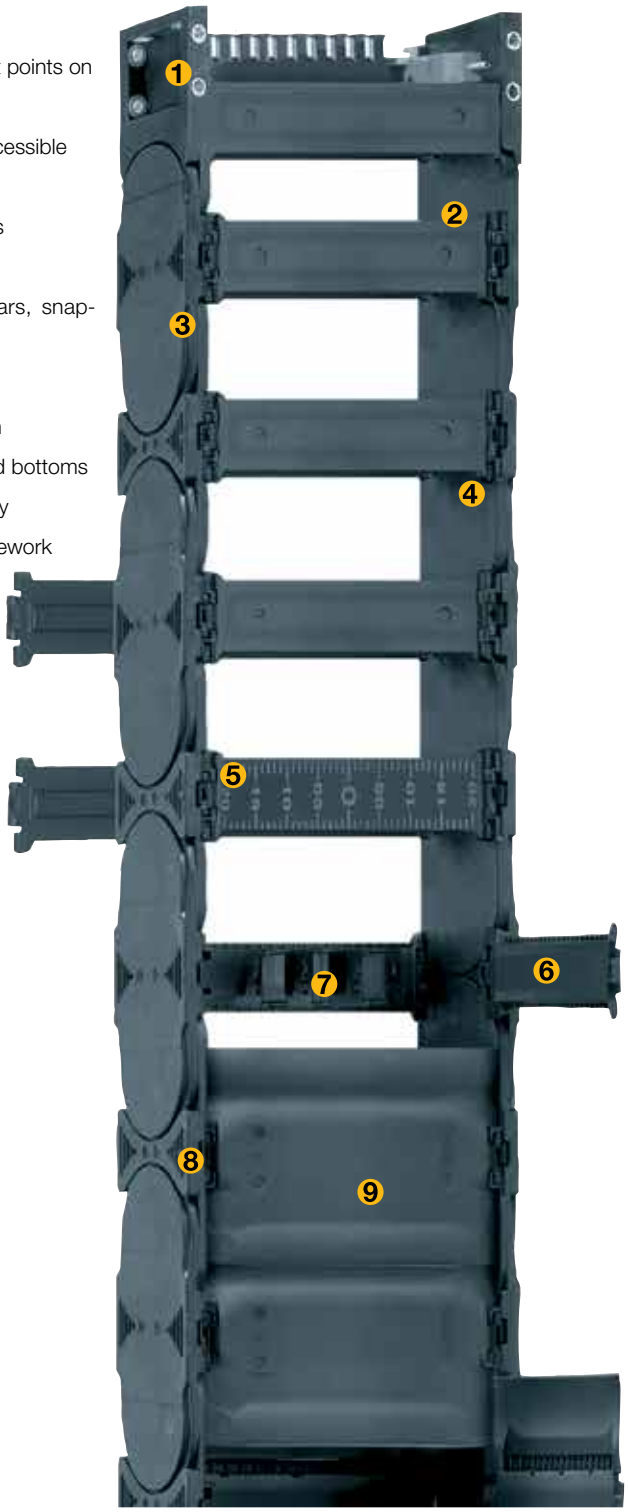
## Usage Guidelines

- If a lightweight, cost-effective E-Chain® for high dynamics is required
- If very tight fitting lids and bottoms are required
- If short assembly times are required
- If optimized interior-exterior dimensions ratio is needed

- When an extremely low-noise, low-vibration E-Chain® is required
  ➤ **Series E6-40**
- If higher stability is required
  ➤ **Series E4-42**
- For long travels with gliding applications
  ➤ **Series E4-42**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Easy filling: inner diameter completely accessible
3. High stability due to undercut design
4. Efficient: less weight, enhanced dynamics
5. Notch crossbar with visual scale
6. Short assembly time: pivotable crossbars, snap-open along the inner and outer radius
7. Numerous interior separation possibilities
8. Straight run due to inner/outer link design
9. Chip protection: very tightly fitting lids and bottoms
10. Version NCST “without camber” simply by turning outer links without unnecessary rework



**Also available without camber. Add NCST to the end of the part number.**
**Ex: E4-38L-100-300NCST**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

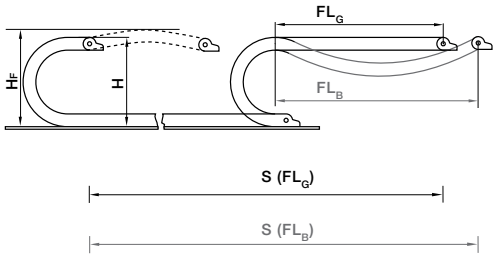
| | |
|---|---|
| 13.12 ft (4 m) **E4-48L-100-200-0** | **E-Chain®** |
| With 2 separators **48-1-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **E4-480-100-12P** | **Mounting Bracket** |

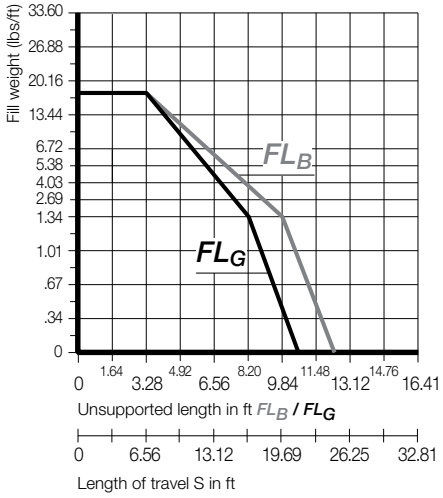
# E-Chain System® E4-1 Light Series E4-48L/R4-48L Installation Dimensions

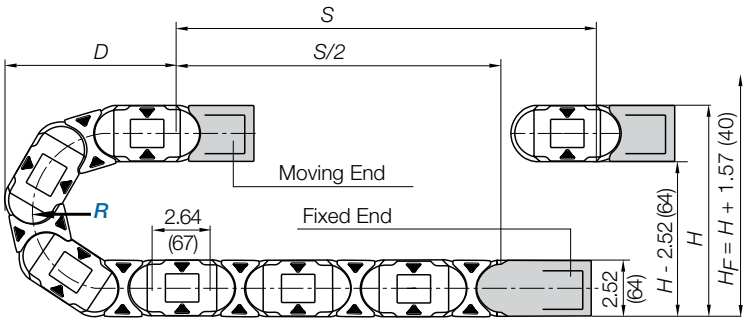
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.54 (15)
**For center mount applications:**
**Chain length =** $_{S}/_{2} + K$

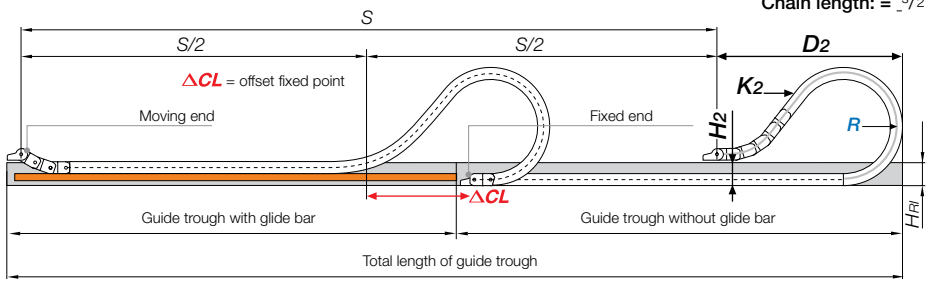
The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.68 lbs/ft (2.5 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.95 (075*) | 3.94 (100*) | 4.92 (125) | 5.91 (150) | 6.69 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|
| H | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 22.20 (564) | 26.14 (664) | 30.08 (764) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 12.13 (308) | 13.11 (333) | 15.08 (383) | 17.05 (433) | 19.02 (483) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 26.97 (685) | 30.12 (765) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 262 ft. (80m)**

**For center mount applications:**
**Chain length: =** $_{S}/_{2} + K_2$




| R | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.69 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300[2]) | 13.78 (350[2]) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | – | – | 4.17 (106) | 4.17 (106) | 4.17 (106) | 4.17 (106) | 4.17 (106) | – | – |
| $D_2$ | – | – | 18.70 (475) | 22.44 (570) | 26.38 (670) | 30.71 (780) | 40.55 (1030) | – | – |
| $K_2$ | – | – | 31.65 (804) | 36.93 (938) | 44.84 (1139) | 52.76 (1340) | 65.94 (1675) | – | – |
| ΔCL | – | – | 9.06 (230) | 11.81 (300) | 14.96 (380) | 18.11 (460) | 25.98 (660) | – | – |

**In case of travels between 16.4 and 32.8 ft (5 and 10 m) we recommend a longer unsupported length.**
**Radius not available for E-Tubes 2) Radius not suitable for long travel applications. Please consult igus®**

For support of the lower run, **see Chapter 9** of the main catalog for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 16.4 ft/s (5 m/s) / max. 82 ft/s² (25 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties
**➤ Chapter 1**

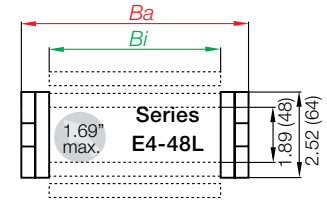


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E4-48L - E-Chain® with crossbars every link



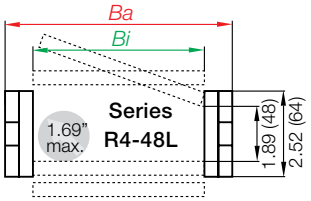

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

E4-48L | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- E4-48L – Series

## Series R4-48L - fully enclosed E-Tube



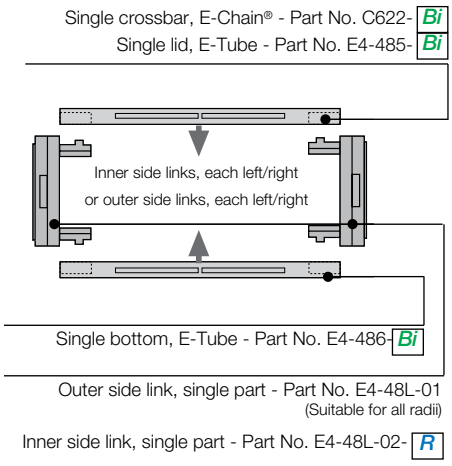

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

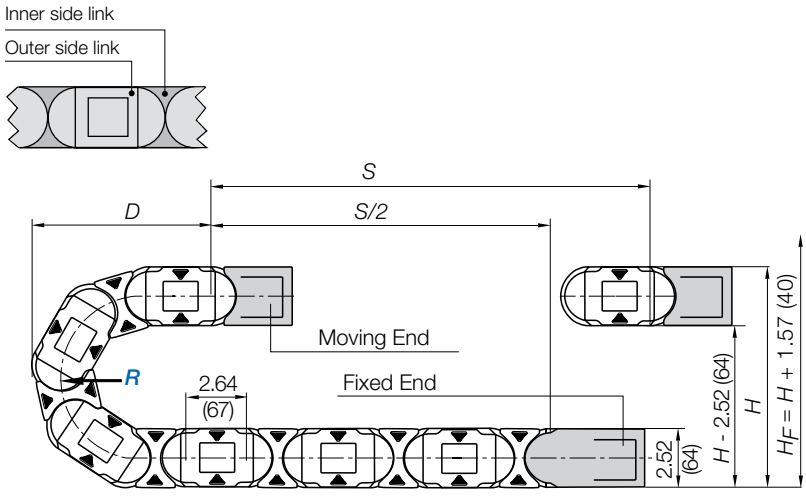
**Part Number Structure**

R4-48L- | 100- | 200- | 0

- 0 – Color - Black
- 200- – Bending radius
- 100- – Width
- R4-48L- – Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Product Range



Supplement part number with required radius. Example: E4-48L-100-[200]-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.54 (15)

| Part Number | | | | | Weight | |
|---|---|---|---|---|---|---|
| Crossbars Every link | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | E4-48L lbs/ft (kg/m) | R4-48L lbs/ft (kg/m) |
| E4-48L-050- | | [ ] -0 | 1.97 (50) | 2.76 (70) | ≈ 1.02 (1.53) | – |
| E4-48L-062- | R4-48L-062- | [ ] -0 | 2.46 (62.5) | 3.25 (82.5) | ≈ 1.06 (1.58) | ≈ 1.16 (1.73) |
| E4-48L-075- | R4-48L-075- | [ ] -0 | 2.95 (75) | 3.74 (95) | ≈ 1.10 (1.64) | ≈ 1.22 (1.82) |
| E4-48L-087- | | [ ] -0 | 3.44 (87.5) | 4.23 (107.5) | ≈ 1.20 (1.67) | – |
| E4-48L-100- | R4-48L-100- | [ ] -0 | 3.94 (100) | 4.72 (120) | ≈ 1.16 (1.73) | ≈ 1.35 (2.01) |
| E4-48L-105- | | [ ] -0 | 4.13 (105) | 4.92 (125) | ≈ 1.17 (1.74) | – |
| E4-48L-125- | R4-48L-125- | [ ] -0 | 4.92 (125) | 5.71 (145) | ≈ 1.24 (1.84) | ≈ 1.46 (2.18) |
| E4-48L-150- | | [ ] -0 | 5.91 (150) | 6.69 (170) | ≈ 1.32 (1.97) | – |
| E4-48L-175- | R4-48L-175- | [ ] -0 | 6.89 (175) | 7.68 (195) | ≈ 1.37 (2.04) | ≈ 1.73 (2.58) |
| E4-48L-200- | R4-48L-200- | [ ] -0 | 7.87 (200) | 8.66 (220) | ≈ 1.44 (2.14) | ≈ 1.81 (2.70) |
| E4-48L-250- | R4-48L-250- | [ ] -0 | 9.84 (250) | 10.63 (270) | ≈ 1.58 (2.35) | ≈ 2.07 (3.08) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-48L-100-[200]-0

| | [075**] | [100**] | [125] | [150] | [175] | [200] | [250] | [300] | [350] |
|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| H | 8.43 (214) | 10.39 (264) | 12.36 (314) | 14.33 (364) | 16.30 (414) | 18.27 (464) | 22.20 (564) | 26.14 (664) | 30.08 (764) |
| D | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 12.13 (308) | 13.11 (333) | 15.08 (383) | 17.05 (433) | 19.02 (483) |
| K | 14.57 (370) | 17.72 (450) | 20.87 (530) | 24.02 (610) | 26.97 (685) | 30.12 (765) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

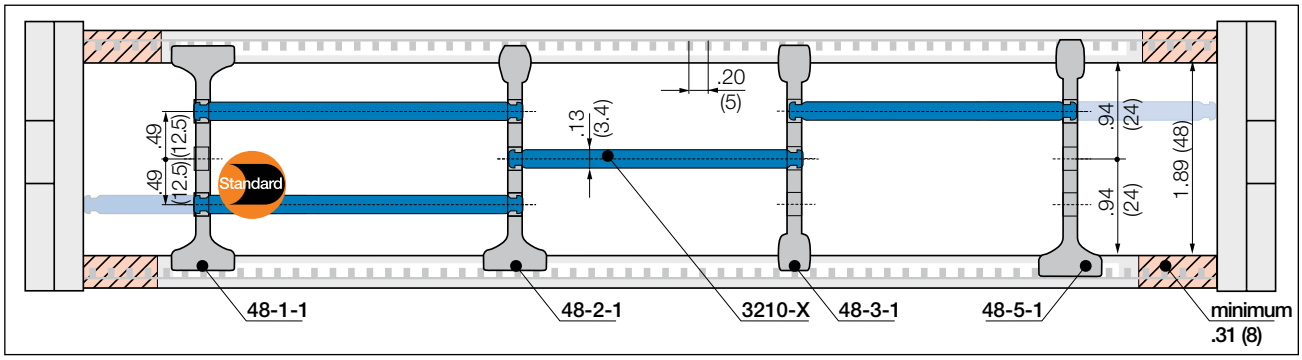
** This radius is not available for the R4-32 Series
*Removable lid only, no hinged option
0 = Standard color black.
For other colors see Chapter 1

For large diameter hoses see page 6.206

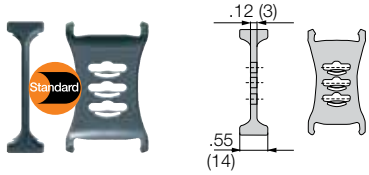
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



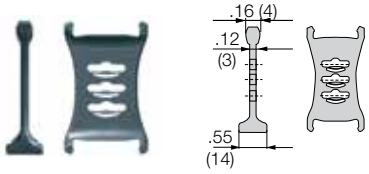

Note E-Tube: Please maintain a lateral spacing of .31" (8 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 48-1** |
| Assembled | **Part No. 48-1-1** |

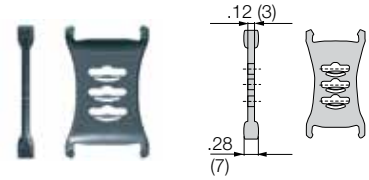
- **Standard separator 48-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains® and E-Tubes.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 48-2** |
| Assembled | **Part No. 48-2-1** |

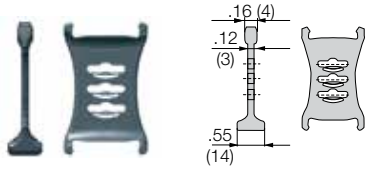
- **Separator 48-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 48-3** |
| Assembled | **Part No. 42-3-1** |

- **Separator 48-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

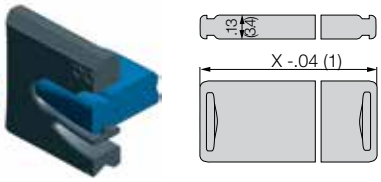



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 48-5** |
| Assembled | **Part No. 48-5-1** |

- **Separator 48-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation



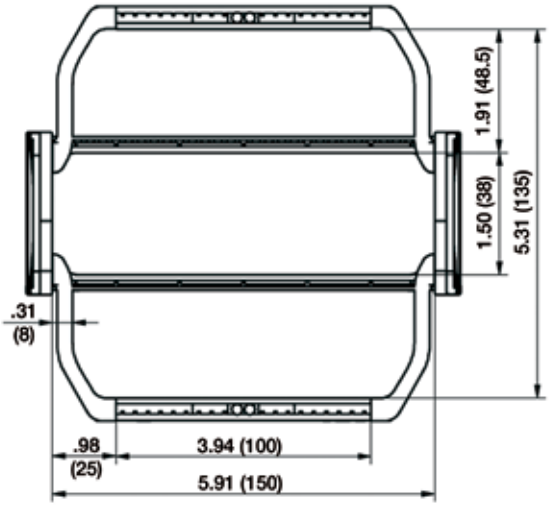

**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at 3 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-75** | **3210-75** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Special Accessories




## Extender crossbars - Enormous of the interior for the smooth guiding of larger hoses

- An extender crossbar increases the inner height by 1.91 in. (48.5 mm).
- Extender crossbars can be assembled in various ways:
  One-sided, on both sides, alternating with normal crossbars and combinations out of these possibilities
- Optionally openable along the inner and outer radius, swivelling
- Cable friendly design of extender crossbar
- High holding force of the extender crossbar

| Extender crossbar possibilities | Part No. Extender crossbar |
|---|---|
| Extender crossbar in inner and outer radius | E4-48L-XXXB48-*R*-0 |
| Extender crossbar in inner and outer radius - every other link | H4-48L-XXXB48-*R*-0 |
| Extender crossbar in inner radius | E4-48L-XXXBZ48-*R*-0 |
| Extender crossbar in innder radius - every other link | H4-48L-XXXBZ48-*R*-0 |
| Extender crossbar in outer radius | E4-48L-XXXBE48-*R*-0 |
| Extender crossbar in iuter radius - every other link | H4-48L-XXXBE48-*R*-0 |
| Extender crossbar and crossbars alternating | E4-48L-XXXHB48-*R*-0 |
| Extender crossbar and crossbars alternating in inner radius | E4-48L-XXXHBZ48-*R*-0 |
| Extender crossbar and crossbars alternating in outer radius | E4-48L-XXXHBE48-*R*-0 |

Supplement Part No. with the required width index **XXX** = *Bi* and *R* = radius.

Example: **E4-48L-100B48-200-0**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

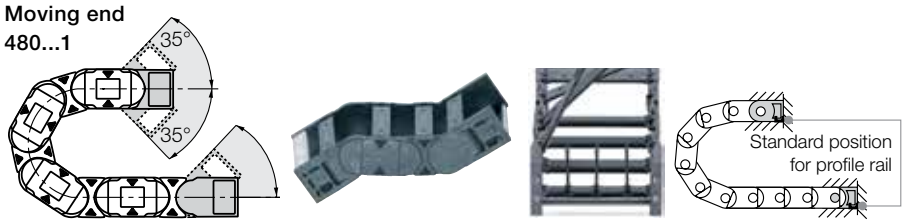
# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Mounting Brackets - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Standard

## Option 1: pivoting

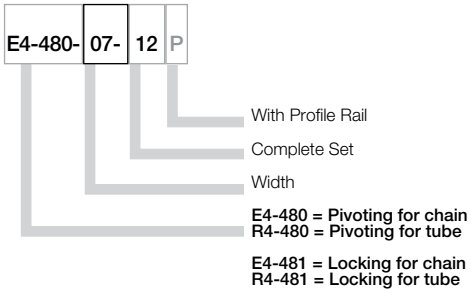
- Recommended for unsupported and gliding applications
- Attachment capability on all sides
- Bolted connection outside of chain cross-section
- Space restricted conditions
- Corrosion resistant

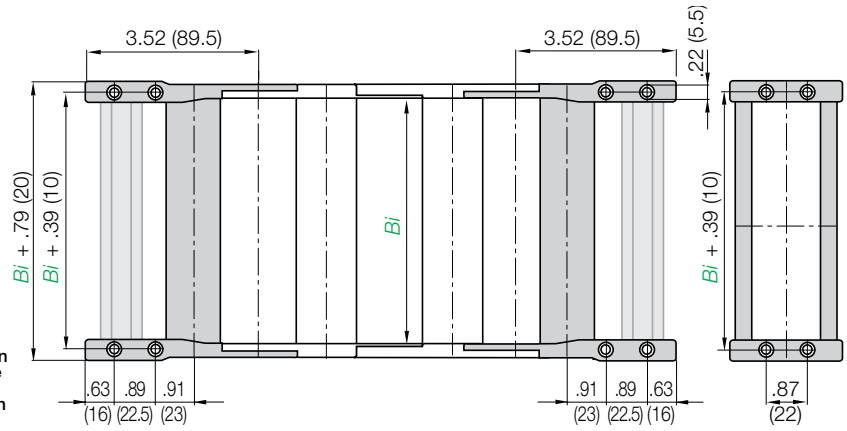



## Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations

### Part Number Structure




**Due to the design of the E4-48L series chains, please note the following when ordering brackets:**
**Even number of links =** full set, part number ending in **-12**; **Odd number of links =** 2 pieces, part number ending in **-1**

**Part number examples are shown for pivoting brackets for E-Chain.**
**For locking brackets change part number to 481**

**Part No. Full Set** (pivoting)
Series E4-48L
E4-480-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series E4-48L
E4-480-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R4-48L
R4-480-Width-12

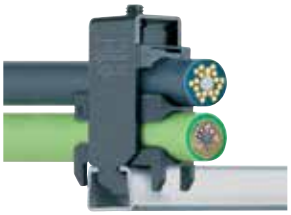
**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R4-48L
R4-480-Width-12P

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -050 | E4-480 | E4-481 | -050-12 | P | 1.97 (50) |
| -062 | E4-480/R4-480 | E4-481/R4-481 | -062-12 | P | 2.68 (62.5) |
| -075 | E4-480/R4-480 | E4-481/R4-481 | -075-12 | P | 2.95 (75) |
| -087 | E4-480 | E4-481 | -087-12 | P | 3.43 (87.5) |
| -100 | E4-480/R4-480 | E4-481/R4-481 | -100-12 | P | 3.94 (100) |
| -105 | E4-480 | E4-481 | -105-12 | P | 4.25 (105) |

| Width | Part No. Full Set chain/tube | | | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | |
| -125 | E4-480/R4-480 | E4-481/R4-481 | -125-12 | P | 4.92 (125) |
| -150 | E4-480 | E4-481 | -150-12 | P | 5.91 (150) |
| -175 | E4-480/R4-480 | E4-481/R4-481 | -175-12 | P | 6.61 (175) |
| -200 | E4-480/R4-480 | E4-481/R4-481 | -200-12 | P | 7.87 (200) |
| -250 | E4-480/R4-480 | E4-481/R4-481 | -250-12 | P | 9.84 (250) |

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

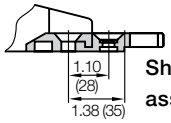
**For more information please refer to strain relief section of Chapter 10**

## Chainfix Clip

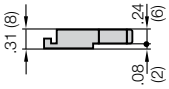
Chainfix clips are available for cable diameters ranging from .16” (4mm) to .94” (24 mm). They are for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools.

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

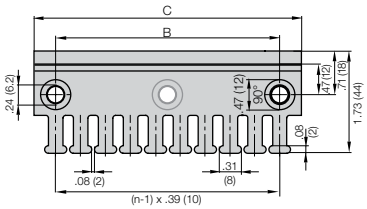



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4-1 Light
# Series E4-48L/R4-48L
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 93-30**
- 1/2 travel length of glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

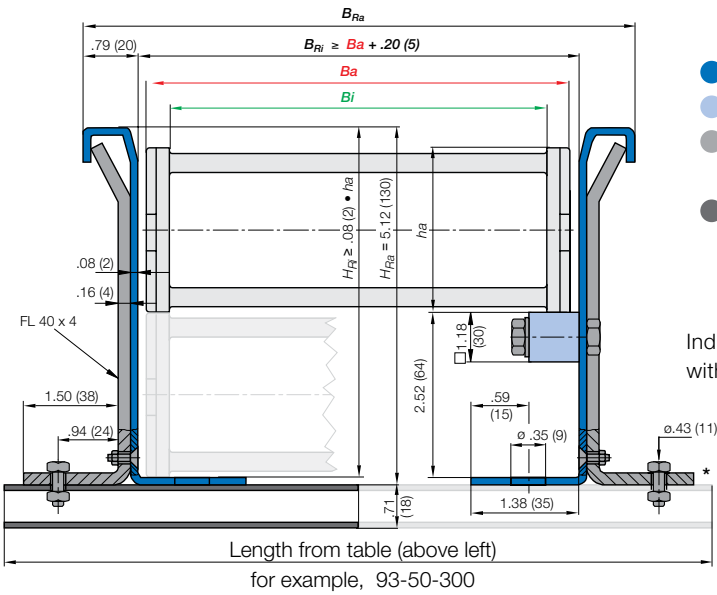
Width of Crossbar
E4-48L-**100**-200-0

$B_{Ri}$

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-050** | 2.95 (75) | **93-50-200** |
| **-062** | 3.43 (87) | **93-50-200** |
| **-075** | 3.94 (100) | **93-50-225** |
| **-087** | 4.41 (112) | **93-50-225** |
| **-100** | 4.92 (125) | **93-50-250** |
| **-105** | 5.12 (130) | **93-50-250** |
| **-125** | 5.91 (150) | **93-50-275** |
| **-150** | 6.89 (175) | **93-50-300** |
| **-175** | 7.87 (200) | **93-50-325** |
| **-200** | 8.86 (225) | **93-50-350** |
| **-250** | 10.83 (275) | **93-50-400** |

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

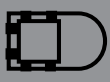


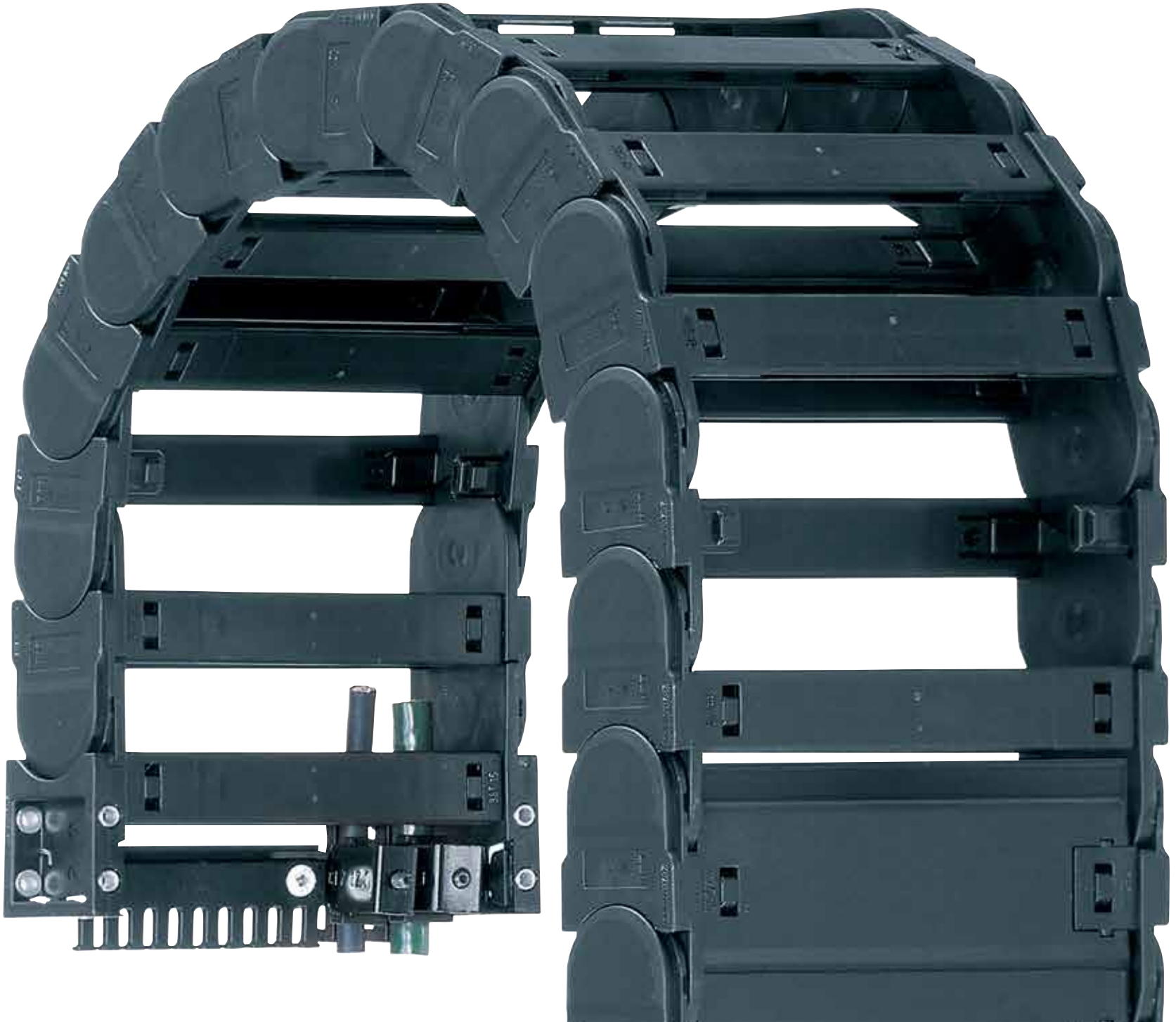

- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS





igus®

# System E4/4

## For new applications we recommend System E4-1

For new applications we recommend
System E4-1

# E4/4 - for long travels and side-mounted applications

System E4/4 is ideal for extremely long travel lengths and also works especially well in free-hanging, side-mounted applications. The E-Chain®'s special 'roller' links are the key to enabling longer travels. The side links are designed to create an overlapping multipurpose grip, which increases stability for heavier side loads. E4/4 can also withstand 50 percent greater push-pull forces than the next comparable E-Chain design and is resistant to dirt and debris. E4/4 is also available in a special conductive plastic called igumid ESD for use in ESD / ATEX applications.

**Typical industries and applications**

- Unsupported, side mounted applications
- Cranes: RTG, Quay cranes, many more
- Compost plants
- Construction machines
- Gypsum plants, concrete plants, chemical plants
- Agricultural plants
- ESD applications
- Heavy machinery
- Steel plants
- Shipyards
- General machinery

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) "Rear grip" achieves long-term electrical conductivity

Side-mounted - unsupported

High torsional rigidity

System E4/4 approved with long travels

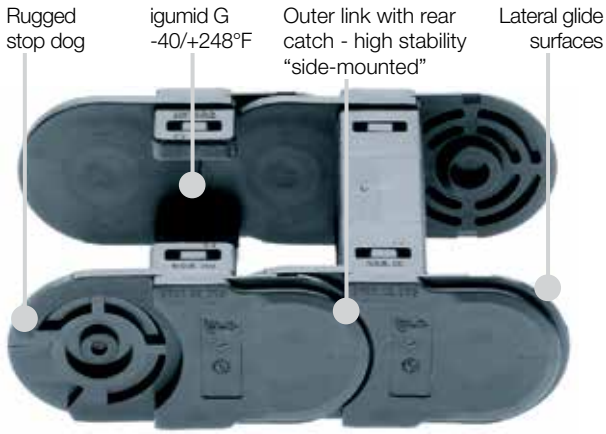
System E4 - 4-piece E-Chain® links

Many successful RoI E-Chain® applications, i.e. one of the igus® longest travels at the moment on 2 ship unloaders in Malaysia, both equipped with a RoI E-Chain® at (441.3 m) travel length

Special case: Side-mounted, unsupported - undercut design offers stability

656 ft. (200 m) travels and more possible

# E-Chain System® E4/4
# Selection Guide




- Best unsupported lengths "side-mounted"
- Rol E-Chain® links available
- For very long travels up to 492-820 ft. (150 - 250 m)
- High torsional rigidity
- Good for tough environments with dirt and debris
- ESD version available
- Interior separation tool box available
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Crossbars every link
### for particularly demanding applications

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **2828** | 1.25 | (32) | 1.97-15.75 | (50-400) | 2.91-16.69 | (74-424) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **3838** | 1.65 | (42) | 1.97-15.75 | (50-400) | 3.03-16.81 | (77-427) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **4040** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.39-25.04 | (86-636) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **5050** | 3.15 | (80) | 1.97-23.62 | (50-600) | 3.94-25.59 | (100-650) | 4.25 | (108) | 5.91-39.37 | (150-1000 |

## Crossbars every 2nd link
### for almost all applications

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **2828** | 1.25 | (32) | 1.97-15.75 | (50-400) | 2.91-16.69 | (74-424) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **3838** | 1.65 | (42) | 1.97-15.75 | (50-400) | 3.03-16.81 | (77-427) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **4140** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.39-25.04 | (86-636) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **5050** | 3.15 | (80) | 1.97-23.62 | (50-600) | 3.94-25.59 | (100-650) | 4.25 | (108) | 5.91-39.37 | (150-1000) |

## E-Tubes
### fully enclosed, excellent cable protection for hot chips

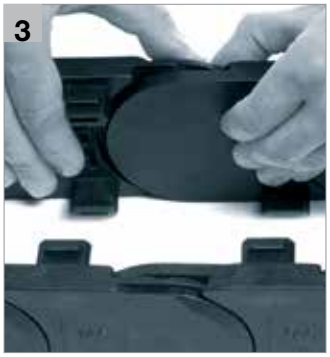
| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **R7728** | 1.25 | (32) | 1.97-11.81 | (50-300) | 2.91-12.76 | (74-324) | 2.13 | (54) | 4.92-11.81 | (125-300) |
| **R7838** | 1.65 | (42) | 1.97-11.81 | (50-300) | 3.03-12.87 | (77-327) | 2.52 | (64) | 4.92-13.78 | (125-350) |
| **R8840** | 2.20 | (56) | 2.95-18.19 | (75-462) | 4.37-19.65 | (111-499) | 3.31 | (84) | 5.91-19.69 | (150-500) |
| **R9850** | 3.15 | (80) | 2.95-18.19 | (75-462) | 4.92-20.20 | (125-513) | 4.25 | (108) | 7.87-39.37 | (200-1000) |

# E-Chain System® E4/4
# Assembly Instructions

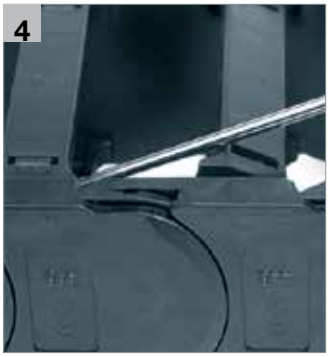
## E-Chains® and E-Tubes - Assembling

Remove crossbars at connection point. Slide side links into each other - Press together

Join the side links - join the second side link by pressing from the top

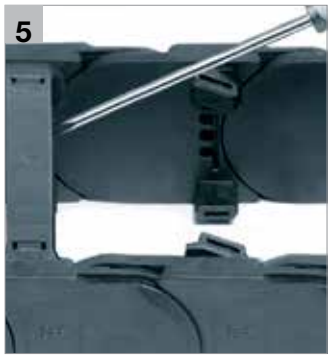



Join the side links together on the opposite side by applying pressure to the outer link




Assemble crossbars - Push down and snap in by using a screwdriver

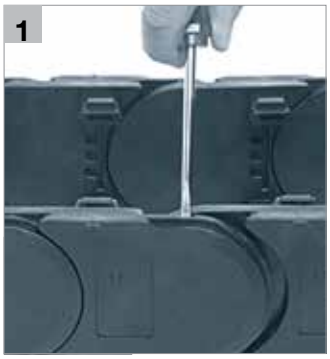
## Assembling continued




Assemble clips (E-Chains® with crossbars every other link) - Push down and snap in

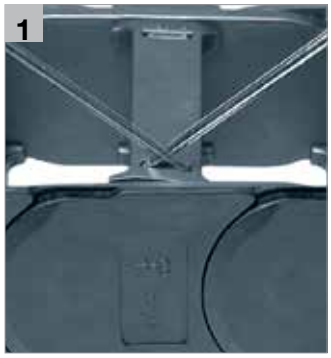
Assemble E-Tube lids/bottoms - Attach to the connector at an angle - Snap in

## E-Chains® and E-Tubes - Separating

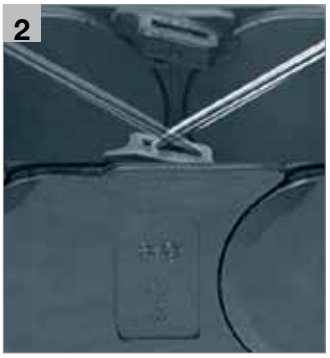


Remove crossbars, clips, and lids on two adjacent chain links. Guide the screwdriver into the slot between side links and release it by levering it and separate the E-Chain®

## E-Chains® - Opening

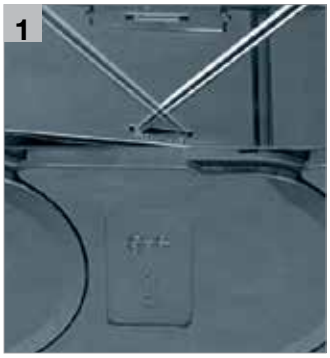



Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

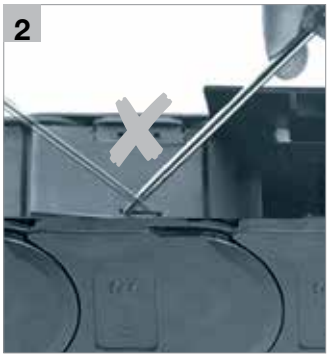



Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

## E-Tube - Opening




Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release




Release only **one side** to open the lid

# E-Chain System® E4/4
# Series 2828/2928/R7728

For new applications use Series E4-32

1.26" 1.26"

## Price Index

Series 2828 Series 2928

Series R7728

## Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

- Vertical, hanging ≤ 230 ft (70 m)
- Vertical, standing ≤ 16.4 ft (5 m)
- Side-mounted, unsupp. ≤ 6.56 ft (2 m)
- Rotary requires further calculation

## Usage Guidelines

- If subject to high torsional or shearing forces
- If a side-mounted chain/tube with long unsupported lengths is required
- If subject to very damp environments consistently

- If a quieter version is required
  ➤ **Series 280/290/R770**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Removable lids along inner radius
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 2828R/7728R available upon request

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **2828-30-300-0** | **E-Chain®** |
| With 2 separators **281** assembled every 2nd link | **Interior Separation** |
| 1 Set **282800-30-12P** | **Mounting Bracket** |

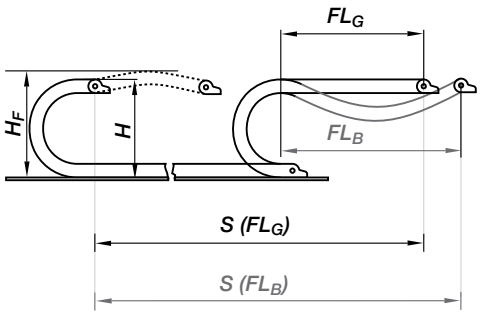
# E-Chain System® E4/4
# Series 2828/2928/R7728
# Installation Dimensions

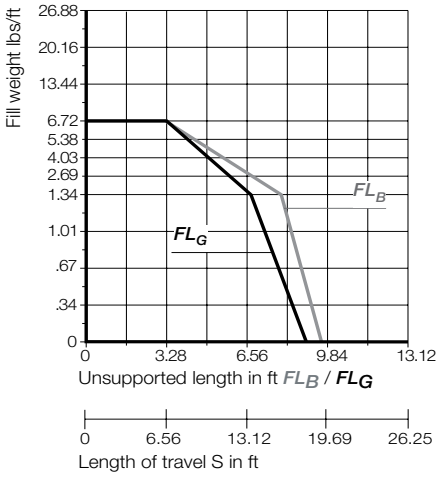
**Short travel, unsupported length**

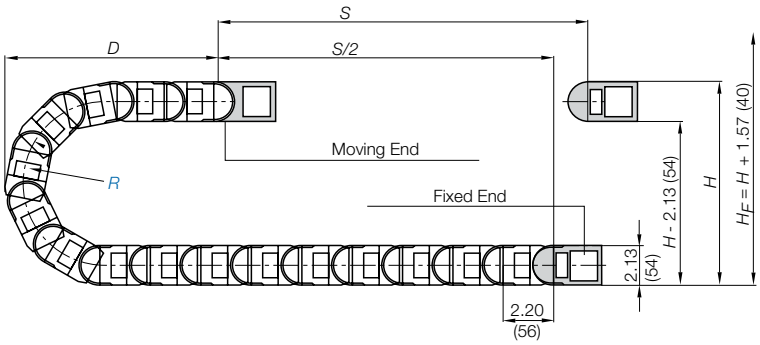
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.48 (18)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_{-0}^{+20}$ | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 15.94 (405) | 17.91 (455) | 19.49 (495) | 21.85 (555) | 25.79 (655) |
| D | 5.12 (130) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 11.61 (295) | 12.80 (325) | 14.76 (375) |
| K | 13.39 (340) | 14.96 (380) | 18.31(465) | 21.65 (550) | 24.41 (620) | 27.56 (700) | 30.70 (780) | 33.46 (850) | 37.01 (940) | 43.70 (1110) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

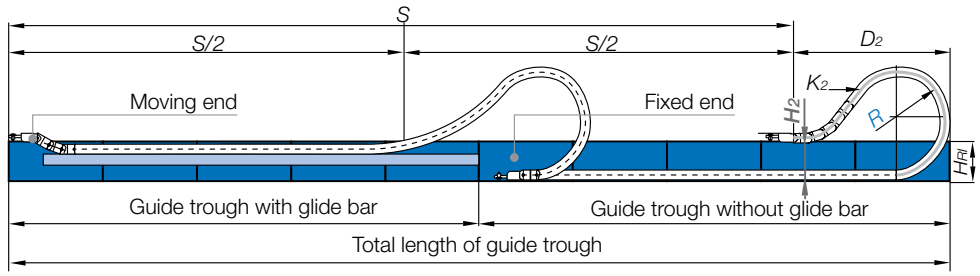
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)**

**For center mount applications:**
**Chain length:** = $^{S}/_{2} + K_2$




| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | - | - | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_{2\ +20}$ | - | - | 14.57 (370) | 17.52 (445) | 24.61 (625) | 25.79 (655) | 30.31 (770) | 34.25 (870) | 36.61 (930) | 48.82 (1240) |
| $K_2$ | - | - | 24.25 (616) | 30.87 (784) | 39.68 (1008) | 41.89 (1064) | 50.71 (1288) | 57.32 (1456) | 61.73 (1568) | 77.17 (1960) |

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
➤ **Chapter 1**

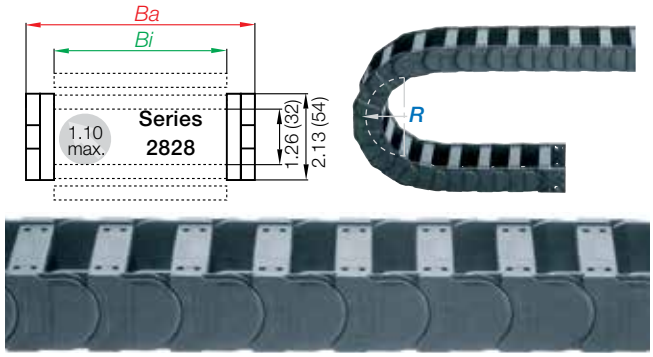


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 2828/2928/R7728

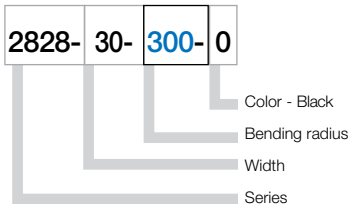
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 2828 - E-Chain® with crossbars every link

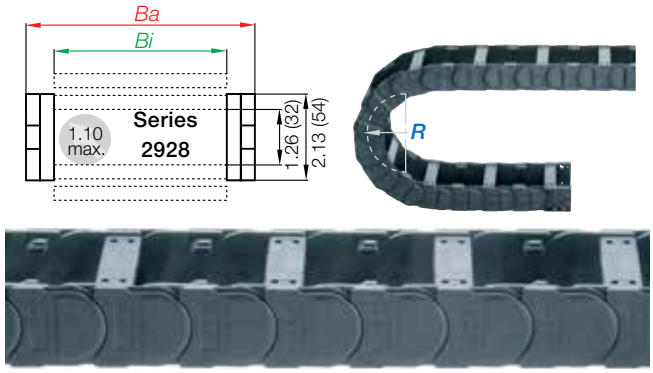



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

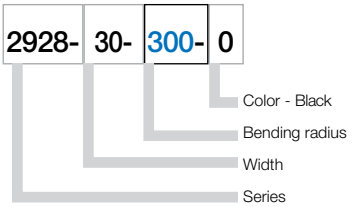



## Series 2928 - E-Chain® with crossbars every other link

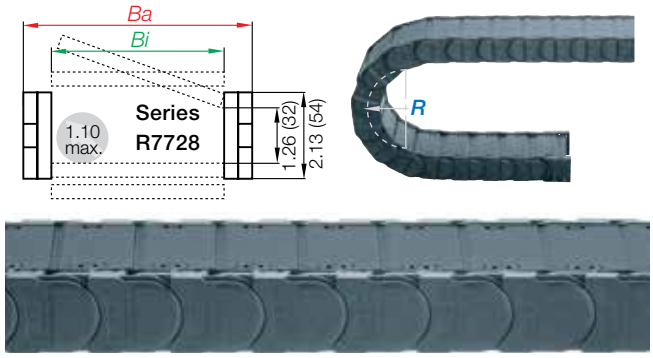



- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

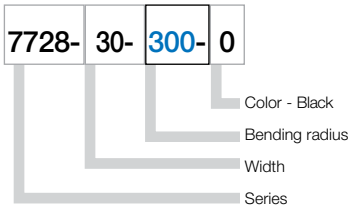



## Series R7728 - fully enclosed E-Tube

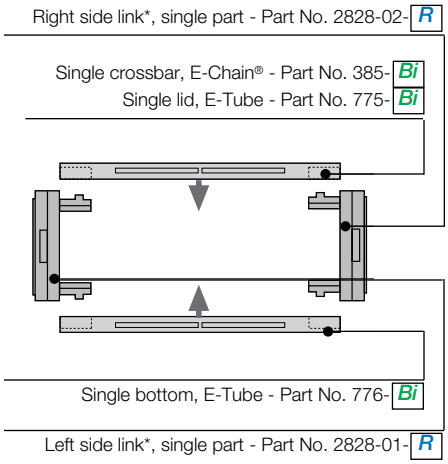


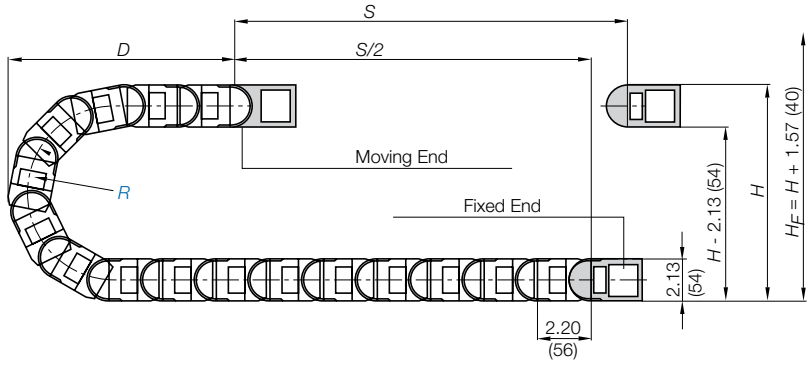

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely re-movable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 2828/2928/R7728

Supplement part number with required radius. Example: 2828-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft(m) = 5.49 (18)

| Part Number | | | | Bi | Ba | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every Link | Crossbars Every Other | Tube Version | | in. (mm) | in. (mm) | 2828 lbs/ft (kg/m) | 2928 lbs/ft (kg/m) | R7728 lbs/ft (kg/m) |
| 2828-05- | 2928-05 | *7728-05- | -0 | 1.97 (50) | 2.91 (74) | ≈ 1.16 (1.73) | ≈ 1.10 (1.64) | ≈ 1.76 (2.63) |
| 2828-06- | 2928-06- | | -0 | 2.68 (68) | 3.62 (92) | ≈ 1.20 (1.79) | ≈ 1.12 (1.67) | – |
| 2828-07- | 2928-07 | 7728-07- | -0 | 2.95 (75) | 3.90 (99) | ≈ 1.24 (1.84) | ≈ 1.14 (1.69) | ≈ 1.84 (2.75) |
| 2828-087- | 2928-087- | | -0 | 3.43 (87) | 4.37 (111) | ≈ 1.30 (1.93) | ≈ 1.16 (1.73) | – |
| 2828-10- | 2928-10- | 7728-10- | -0 | 3.94 (100) | 4.88 (124) | ≈ 1.36 (2.02) | ≈ 1.20 (1.78) | ≈ 1.90 (2.83) |
| 2828-11- | 2928-11- | 7728-11- | -0 | 4.25 (108) | 5.20 (132) | ≈ 1.40 (2.08) | ≈ 1.22 (1.81) | ≈ 1.98 (2.94) |
| 2828-112- | 2928-112- | | -0 | 4.41(112) | 5.39 (137) | ≈ 1.44 (2.15) | ≈ 1.24 (1.84) | – |
| 2828-12- | 2928-12- | 7728-12- | -0 | 4.92 (125) | 5.87 (149) | ≈ 1.48 (2.20) | ≈ 1.26 (1.87) | ≈ 2.04 (3.03) |
| 2828-137- | 2928-137- | | -0 | 5.39 (137) | 6.38 (162) | ≈ 1.54 (2.29) | ≈ 1.28 (1.91) | – |
| 2828-15- | 2928-15- | 7728-15- | -0 | 5.91 (150) | 6.85 (174) | ≈ 1.60 (2.38) | ≈ 1.32 (1.96) | ≈ 2.14 (3.19) |
| 2828-162- | 2928-162- | | -0 | 6.38 (162) | 7.36 (187) | ≈ 1.64 (2.44) | ≈ 1.34 (1.99) | – |
| 2828-17- | 2928-17- | 7728-17- | -0 | 6.61 (168) | 7.56 (192) | ≈ 1.69 (2.51) | ≈ 1.36 (2.02) | ≈ 2.28 (3.39) |
| 2828-18- | 2928-18- | | -0 | 6.89 (175) | 7.83 (199) | ≈ 1.72 (2.56) | ≈ 1.38 (2.05) | – |
| 2828-187- | 2928-187- | | -0 | 7.36 (187) | 8.35 (212) | ≈ 1.78 (2.65) | ≈ 1.40 (2.09) | – |
| 2828-20- | 2928-20- | 7728-20- | -0 | 7.87 (200) | 8.82 (224) | ≈ 1.84 (2.74) | ≈ 1.44 (2.14) | ≈ 2.41 (3.59) |
| 2828-212- | 2928-212- | | -0 | 8.35 (212) | 9.33 (237) | ≈ 1.93 (2.87) | ≈ 1.48 (2.20) | – |
| 2828-23- | 2928-23- | | -0 | 8.86 (225) | 9.80 (249) | ≈ 1.96 (2.92) | ≈ 1.49 (2.22) | – |
| 2828-237- | 2928-237- | | -0 | 9.33 (237) | 10.31 (262) | ≈ 2.05 (3.05) | ≈ 1.54 (2.29) | – |
| 2828-25- | 2928-25- | 7728-25- | -0 | 9.84 (250) | 10.79 (274) | ≈ 2.08 (3.10) | ≈ 1.56 (2.32) | ≈ 2.72 (4.04) |
| 2828-262- | 2928-262- | | -0 | 10.31 (262) | 11.26 (286) | ≈ 2.14 (3.19) | ≈ 1.59 (2.36) | – |
| 2828-28 | 2928-28- | | -0 | 10.83 (275) | 11.77 (299) | ≈ 2.20 (3.28) | ≈ 1.62 (2.41) | – |
| 2828-29- | 2928-29- | | -0 | 11.30 (287) | 12.28 (312) | ≈ 2.26 (3.37) | ≈ 1.65 (2.45) | – |
| 2828-30- | 2928-30- | 7728-30- | -0 | 11.81 (300) | 12.76 (324) | ≈ 2.33 (3.46) | ≈ 1.68 (2.50) | ≈ 2.98 (4.43) |
| 2828-312- | 2928-312- | | -0 | 12.28 (312) | 13.27 (337) | ≈ 2.41 (3.59) | ≈ 1.72 (2.56) | – |
| 2828-325- | 2928-325- | | -0 | 12.79 (325) | 13.74 (349) | ≈ 2.47 (3.68) | ≈ 1.75 (2.60) | – |
| 2828-337- | 2928-337- | | -0 | 13.27 (337) | 14.25 (362) | ≈ 2.53 (3.77) | ≈ 1.78 (2.65) | – |
| 2828-350- | 2928-350- | | -0 | 13.78 (350) | 14.72 (374) | ≈ 2.59 (3.86) | ≈ 1.81 (2.69) | – |
| 2828-362- | 2928-362- | | -0 | 14.25 (362) | 15.24 (387) | ≈ 2.65 (3.95) | ≈ 1.84 (2.74) | – |
| 2828-375- | 2928-375- | | -0 | 14.76 (375) | 15.71 (399) | ≈ 2.72 (4.04) | ≈ 1.88 (2.79) | – |
| 2828-387- | 2928-387- | | -0 | 15.24 (387) | 16.22 (412) | ≈ 2.76 (4.11) | ≈ 1.90 (2.82) | – |
| 2828-400 | 2928-400- | | -0 | 15.75 (400) | 16.69 (424) | ≈ 2.81 (4.18) | ≈ 1.92 (2.86) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2828-30-300-0

| | 063** | 075** | 100** | 125 | 150 | 175 | 200 | 220 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
| H* $^{-0}_{+20}$ | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 15.94 (405) | 17.91 (455) | 19.49 (495) | 21.85 (555) | 25.79 (655) |
| D | 5.12 (130) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 10.83 (275) | 11.61 (295) | 12.80 (325) | 14.76 (375) |
| K | 13.39 (340) | 14.96 (380) | 18.31(465) | 21.65 (550) | 24.41 (620) | 27.56 (700) | 30.70 (780) | 33.46 (850) | 37.01 (940) | 43.70 (1110) |

** This radius is not available for the R7728 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.223. For large diameter hoses see page 6.223

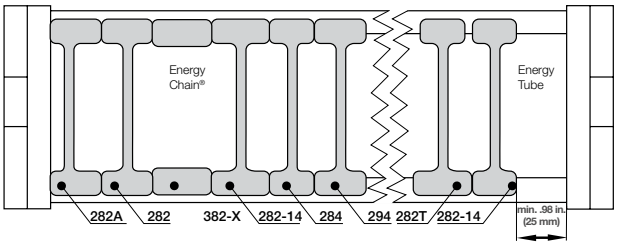
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

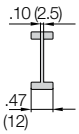
# E-Chain System® E4/4
# Series 2828/2928/R7728
# Interior Separation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



STANDARD
Vertical separator 280

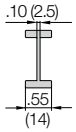



**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 280** |
| Assembled | **Part No. 281** |

- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

Vertical separator 280 -14

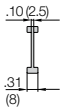



**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 280-14** |
| Assembled | **Part No. 281-14** |

- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

Vertical separator 283

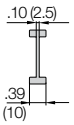



**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 283** |
| Assembled | **Part No. 284** |

- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

Locking separator 293

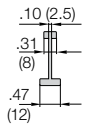



**Locking Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 293** |
| Assembled | **Part No. 294** |

- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.

Vertical separator 281T

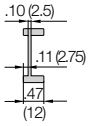



**Vertical Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 280T** |
| Assembled | **Part No. 281T** |

- **Vertical separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

Asymmetric separator 281A




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 280A** |
| Assembled | **Part No. 281A** |

- **Asymmetrical separator 281A for E-Chains®**
  This separator features a (12mm) base. It can be used in combination with spacers of different widths and vertical separators in side mounted applications.

Spacers 381-XX

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

Spacers available in the following sizes:

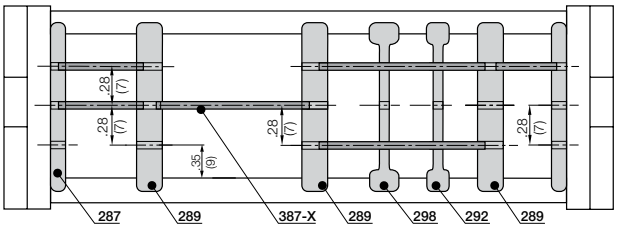
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | 79” | (20) |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

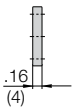
# E-Chain System® E4/4
# Series 2828/2928/R7728
# Interior Separation

## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.




| Side Plate | |
|---|---|
| Unassembled | **Part No. 286** |
| Assembled | **Part No. 287** |

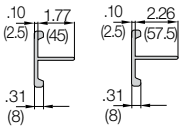
Side plate 286

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.

| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 288** |
| Assembled | **Part No. 289** |

Vertical separator 288

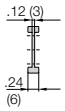
- **Locking vertical separator 281-S**
  Vertical separator with injection molded shelf




| Separators w/Integrated Shelf | |
|---|---|
| Unassembled | **Part No. 281-S-45** |
| Assembled | **Part No. 282-S-45** |
| Unassembled | **Part No. 281-S-57** |
| Assembled | **Part No. 282-S-57** |

Separator with integrated shelf 281-S

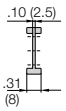
- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.




| Slotted Separators (chain only) | |
|---|---|
| Unassembled | **Part No. 291** |
| Assembled | **Part No. 292** |

Closed slotted separator 291

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.



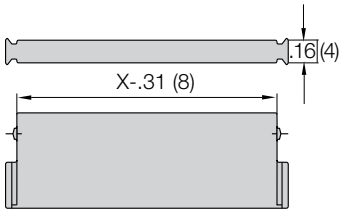

| Slotted Separators, Open | |
|---|---|
| Unassembled | **Part No. 297** |
| Assembled | **Part No. 298** |

Open slotted separator 297

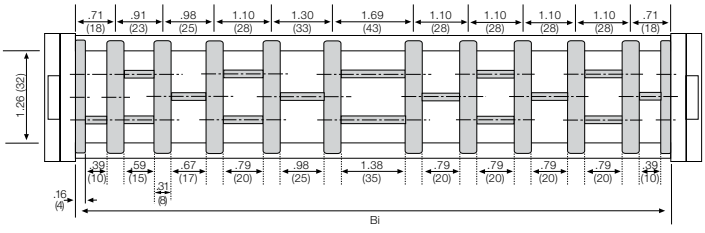
| Width X | | Usable Width | | Part No. | Part No. |
|---|---|---|---|---|---|
| in. | (mm) | in. | (mm) | Unassembled | Assembled |
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |
| 8.86 | (225) | 8.54 | (2.17) | **386-225** | **387-225** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments




The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator***.




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 2828/2928/R7728
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

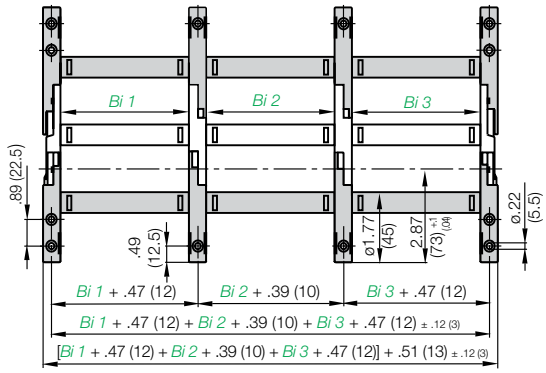
**2828-10/20/10-[200]-0**

**2828-*Bi1*/*Bi2*/*Bi3*-[*R*]-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

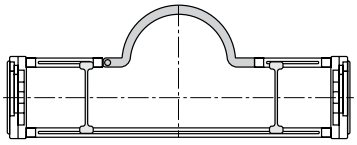
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



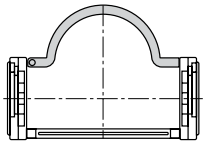
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



**Round extender crossbar combined with standard snap-open crossbars.**

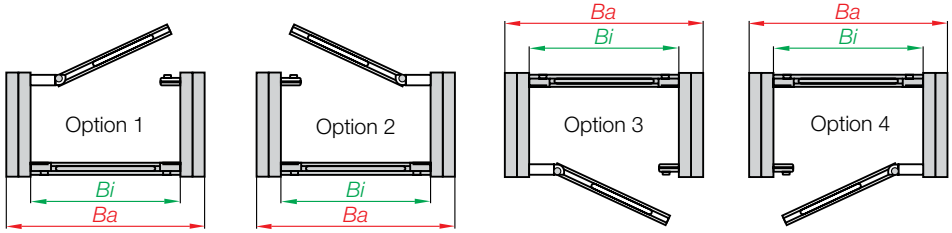


**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | By request | Round | No | Yes |
| **385-18-RD115** | By request | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance

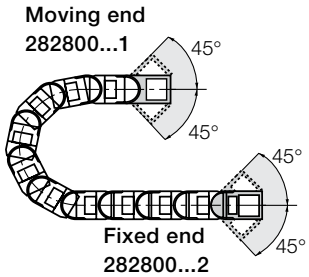


# E-Chain System® E4/4
# Series 2828/2928/R7728
# Mounting Brackets - KMA

Standard

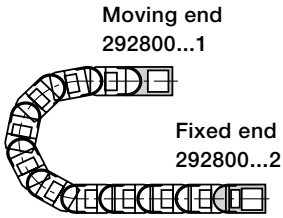
## Option 1: pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



## Option 2: locking

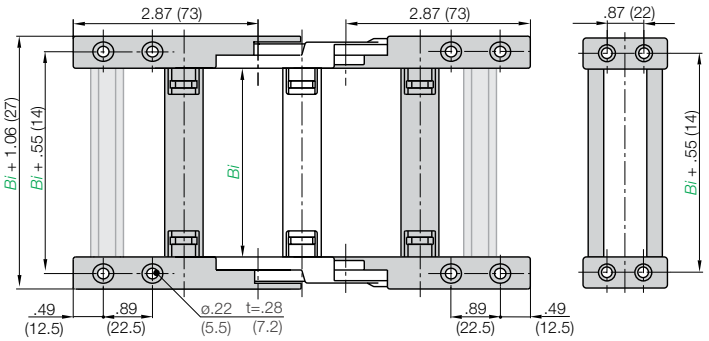
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



### Part Number Structure

282800- | 07- | 12 | T | P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 282800 = Pivoting, 292800 = Locking




**Full set, for both ends:**

282800- | 07- | 12 Full set, **each part with pin/bore**

**Single-part order:**

282800- | 07- | 1 Mounting bracket **with bore**

282800- | 07- | 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 292800**

**Part No. Full Set** (pivoting)
Series 2828 or 2928:
282800-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 2828 or 2928
282800-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R7728
282800-Width-12T

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R7728
282800-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05* | 282800 | 292800 | -05-12 | T | P | 1.97 (50) |
| -06 | 282800 | 292800 | -06-12 | | P | 2.68 (68) |
| -07 | 282800 | 292800 | -07-12 | T | P | 2.95 (75) |
| -087 | 282800 | 292800 | -087-12 | | P | 3.43 (87) |
| -10 | 282800 | 292800 | -10-12 | T | P | 3.94 (100) |
| -11 | 282800 | 292800 | -11-12 | T | P | 4.25 (108) |
| -112 | 282800 | 292800 | -112-12 | | P | 4.41 (112) |
| -12 | 282800 | 292800 | -12-12 | T | P | 4.92 (125) |
| -137 | 282800 | 292800 | -137-12 | | P | 5.39 (137) |
| -15 | 282800 | 292800 | -15-12 | T | P | 5.91 (150) |
| -162 | 282800 | 292800 | -162-12 | | P | 6.38 (162) |
| -17 | 282800 | 292800 | -17-12 | T | P | 6.61 (168) |
| -18 | 282800 | 292800 | -18-12 | | P | 6.89 (175) |
| -187 | 282800 | 292800 | -187-12 | | P | 7.36 (187) |
| -20 | 282800 | 292800 | -20-12 | T | P | 7.87 (200) |
| -212 | 282800 | 292800 | -212-12 | | P | 8.35 (212) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -23 | 282800 | 292800 | -23-12 | | P | 8.86 (225) |
| -237 | 282800 | 292800 | -237-12 | | P | 9.33 (237) |
| -25 | 282800 | 292800 | -25-12 | T | P | 9.84 (250) |
| -262 | 282800 | 292800 | -262-12 | | P | 10.31 (262) |
| -28 | 282800 | 292800 | -28-12 | | P | 10.83 (275) |
| -29 | 282800 | 292800 | -29-12 | | P | 11.30 (287) |
| -30 | 282800 | 292800 | -30-12 | T | P | 11.81 (300) |
| -312 | 282800 | 292800 | -312-12 | | P | 12.28 (312) |
| -325 | 282800 | 292800 | -325-12 | | P | 12.79 (325) |
| -337 | 282800 | 292800 | -337-12 | | P | 13.27 (337) |
| -350 | 282800 | 292800 | -350-12 | | P | 13.78 (350) |
| -362 | 282800 | 292800 | -362-12 | | P | 14.25 (362) |
| -375 | 282800 | 292800 | -375-12 | | P | 14.76 (375) |
| -387 | 282800 | 292800 | -387-12 | | P | 15.24 (387) |
| -400 | 282800 | 292800 | -400-12 | | P | 15.75 (400) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 2828/2928/R7728
# Mounting Brackets - Steel

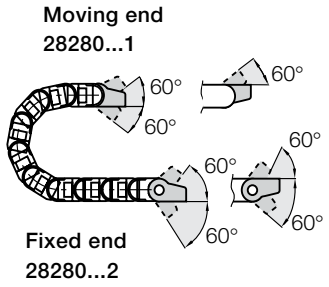


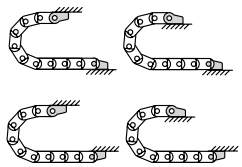
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



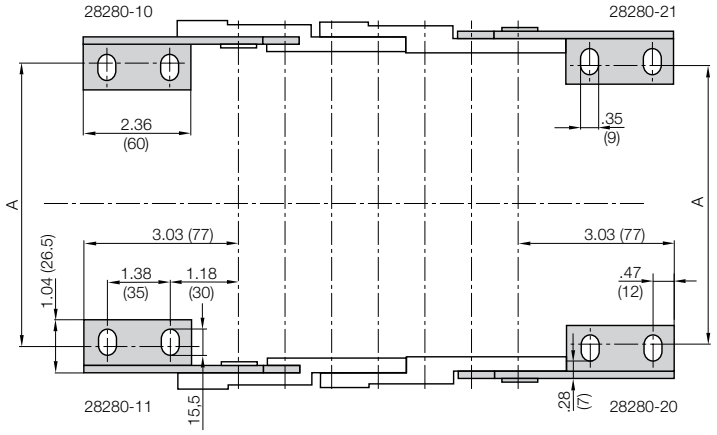


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 2828, 2928 or R7728:
**28280-12**

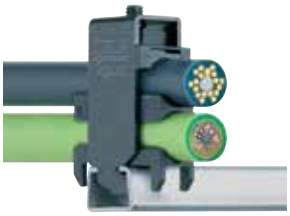
**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 2828, 2928 or R7728:
**28280-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 2828, 2928 or R7728:
**28280-2**




| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) | Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50) | 28280 | -12 | -1 | -2 | 1.18 (30) | 8.86 (225) | 28280 | -12 | -1 | -2 | 8.07 (205) |
| 2.68 (68) | 28280 | -12 | -1 | -2 | 1.77 (45) | 9.33 (237) | 28280 | -12 | -1 | -2 | 8.54 (217) |
| 2.95 (75) | 28280 | -12 | -1 | -2 | 2.16 (55) | 9.84 (250) | 28280 | -12 | -1 | -2 | 9.05 (230) |
| 3.43 (87) | 28280 | -12 | -1 | -2 | 3.15 (80) | 10.31 (262) | 28280 | -12 | -1 | -2 | 9.53 (242) |
| 3.94 (100) | 28280 | -12 | -1 | -2 | 3.15 (80) | 10.83 (275) | 28280 | -12 | -1 | -2 | 10.04 (255) |
| 4.25 (108) | 28280 | -12 | -1 | -2 | 3.62 (92) | 11.30 (287) | 28280 | -12 | -1 | -2 | 10.51 (267) |
| 4.41 (112) | 28280 | -12 | -1 | -2 | 3.15 (80) | 11.81 (300) | 28280 | -12 | -1 | -2 | 11.02 (280) |
| 4.92 (125) | 28280 | -12 | -1 | -2 | 4.13 (105) | 12.28 (312) | 28280 | -12 | -1 | -2 | 11.49 (292) |
| 5.39 (137) | 28280 | -12 | -1 | -2 | 4.61 (117) | 12.79 (325) | 28280 | -12 | -1 | -2 | 12.00 (305) |
| 5.91 (150) | 28280 | -12 | -1 | -2 | 5.12 (130) | 13.27 (337) | 28280 | -12 | -1 | -2 | 12.48 (317) |
| 6.38 (162) | 28280 | -12 | -1 | -2 | 5.59 (142) | 13.78 (350) | 28280 | -12 | -1 | -2 | 12.99 (330) |
| 6.61 (168) | 28280 | -12 | -1 | -2 | 6.10 (155) | 14.25 (362) | 28280 | -12 | -1 | -2 | 13.46 (342) |
| 6.89 (175) | 28280 | -12 | -1 | -2 | 6.57 (167) | 14.76 (375) | 28280 | -12 | -1 | -2 | 13.97 (355) |
| 7.36 (187) | 28280 | -12 | -1 | -2 | 6.57 (167) | 15.24 (387) | 28280 | -12 | -1 | -2 | 14.45 (367) |
| 7.87 (200) | 28280 | -12 | -1 | -2 | 7.09 (180) | 15.75 (400) | 28280 | -12 | -1 | -2 | 14.96 (380) |
| 8.35 (212) | 28280 | -12 | -1 | -2 | 7.56 (192) | | | | | | |

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1M | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1M | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1M | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1M | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1M | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1M | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1M | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1M | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1M | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1M | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1M | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

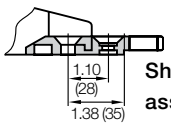
## Chainfix Clip

### Modular snap-on strain relief device

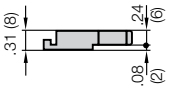
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

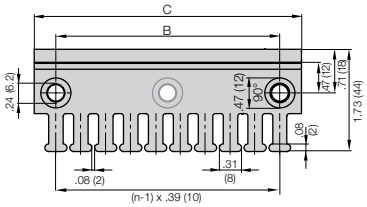



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 2828/2928/R7728
# Guide Troughs



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 98-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 98-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**

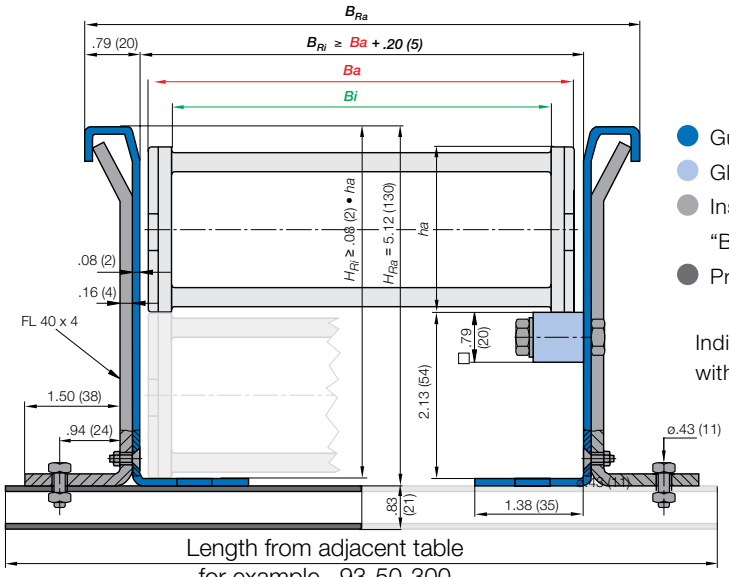
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail.

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
280-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.11 (79) | **93-50-200** |
| **-06** | 3.82 (97) | **93-50-225** |
| **-07** | 4.09 (104) | **93-50-225** |
| **-087** | 4.57 (116) | **93-50-225** |
| **-10** | 5.08 (129) | **93-50-250** |
| **-11** | 5.39 (137) | **93-50-250** |
| **-112** | 5.59 (142) | **93-50-250** |
| **-12** | 6.06 (154) | **93-50-275** |
| **-137** | 6.57 (167) | **93-50-275** |
| **-15** | 7.05 (179) | **93-50-300** |
| **-162** | 7.56 (192) | **93-50-300** |
| **-17** | 7.76 (197) | **93-50-325** |
| **-18** | 8.03 (204) | **93-50-325** |
| **-187** | 8.54 (217) | **93-50-325** |
| **-20** | 9.02 (229) | **93-50-350** |
| **-212** | 9.53 (242) | **93-50-350** |
| **-23** | 10.00 (254) | **93-50-375** |
| **-237** | 10.51 (267) | **93-50-375** |
| **-25** | 10.98 (279) | **93-50-400** |
| **-262** | 11.50 (292) | **93-50-400** |
| **-28** | 11.97 (304) | **93-50-425** |
| **-29** | 12.48 (317) | **93-50-425** |
| **-30** | 12.95 (329) | **93-50-450** |
| **-312** | 13.46 (342) | **93-50-450** |
| **-325** | 13.94 (354) | **93-50-475** |
| **-337** | 14.45 (367) | **93-50-475** |
| **-350** | 14.92 (379) | **93-50-500** |
| **-362** | 15.43 (392) | **93-50-500** |
| **-375** | 15.91 (404) | **93-50-525** |
| **-387** | 16.42 (417) | **93-50-525** |
| **-400** | 16.89 (429) | **93-50-550** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

**For further technical information on guide troughs**
**➤ Chapter 9**

**High unsupported lengths and perfect suitability for circular movements (RBR-versions) are some features for the E4/4-System**

## Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 2828R - Order example 2828R-30-220-0
**Further information: Call igus at 800-521-2747**

# E-Chain System® E4/4
# Series 3838/3938/R7838

**For new applications use Series E4-42**

1.65” 1.65”

## Price Index

Series 3838 Series 3938

Series R7838

## Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

- Vertical, hanging ≤ 328 ft (100 m)
- Vertical, standing ≤ 19.69 ft (6 m)
- Side-mounted, unsupp. ≤ 8.20 ft (2.5 m)
- Rotary requires further calculation

## Usage Guidelines

- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series 380/390/R780**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged snap-open removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Closed and open styles can be combined
8. High torsional rigidity
9. Lids and crossbars are removable along both radii
10. Wide, rounded plastic crossbars - cable friendly
11. E-Chain® also available with reverse bending radii

**RoI E-Chain® Series 3838R/7838R available upon request**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 13.12 ft (4 m) **3838-30-300-0** | **E-Chain®** |
| With 2 separators **381** assembled every 2nd link | **Interior Separation** |
| 1 Set **383800-30-12P** | **Mounting Bracket** |

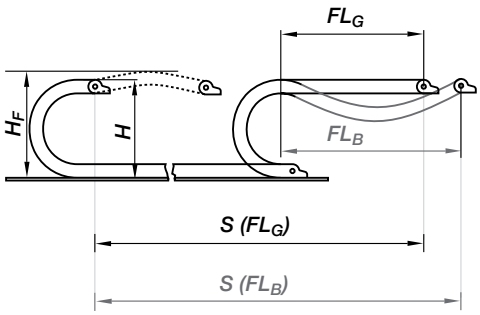
# E-Chain System® E4/4
# Series 3838/3938/R7838
# Installation Dimensions

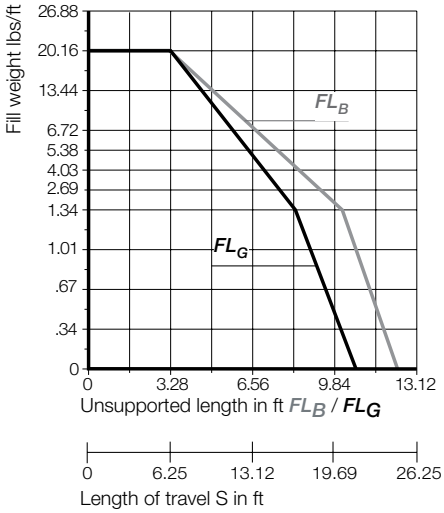


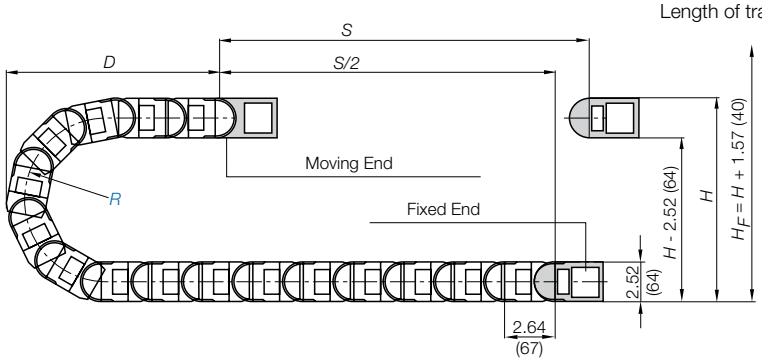
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Further add-on

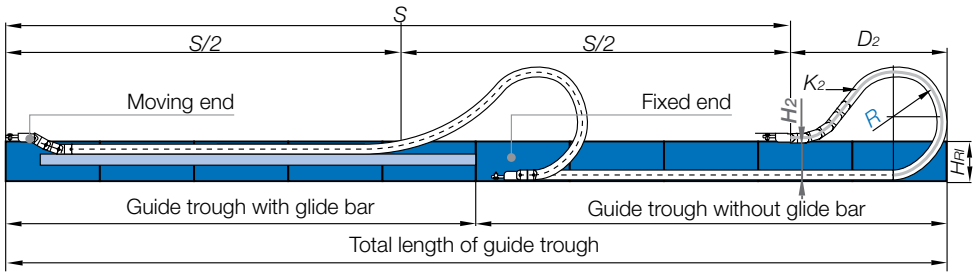
*If the mounting bracket location is set lower

| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H $^{-0}_{+20}$ | 8.46 (215) | 10.43 (265) | 11.61 (295) | 12.40 (315) | 14.37 (365) | 15.94 (405) | 18.31 (465) | 19.49 (495) | 22.24 (565) | 26.18 (665) | 30.12 (765) |
| D | 6.85 (174) | 7.83 (199) | 8.43 (214) | 8.82 (224) | 9.80 (249) | 10.59 (269) | 11.77 (299) | 12.36 (314) | 13.74 (349) | 15.71 (399) | 17.68 (449) |
| K | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 26.38 (670) | 30.12 (765) | 31.89 (810) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 919 ft. (280 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | - | - | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ $^{}_{+25}$ | - | - | 17.12 (435) | 18.70 (475) | 22.44 (570) | 27.17 (690) | 30.71 (780) | 34.06 (865) | 39.76 (1010) | 45.28 (1150) | 59.06 (1500) |
| $K_2$ | - | - | 29.02 (737) | 31.65 (804) | 39.57 (1005) | 44.84 (1139) | 52.76 (1340) | 55.39 (1407) | 65.94 (1675) | 76.50 (1943) | 94.96 (2412) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

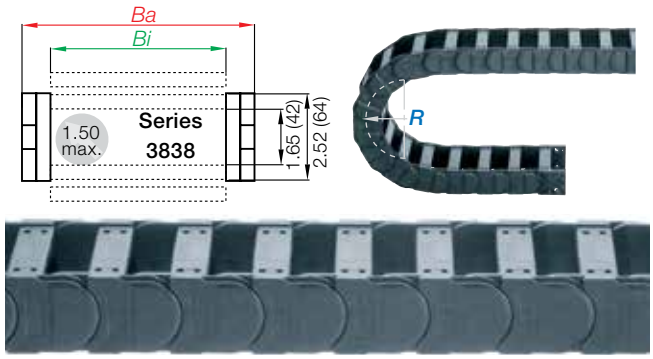
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 3838/3938/R7838

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 3838 - E-Chain® with crossbars every link

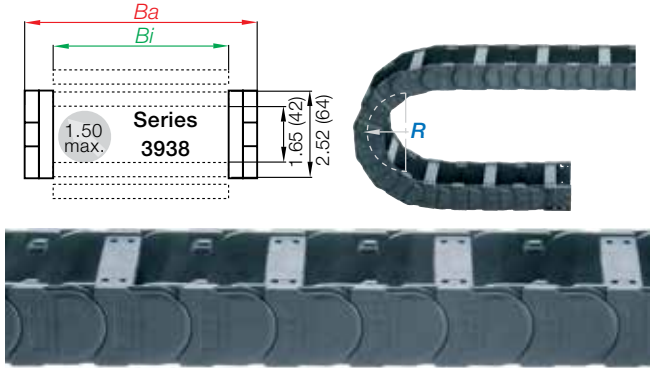



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 3838- | 400- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series 3938 - E-Chain® with crossbars every other link

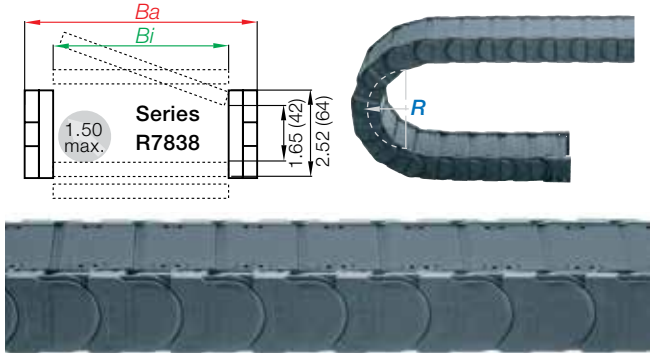



- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 3938- | 400- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series R7838 - fully enclosed E-Tube

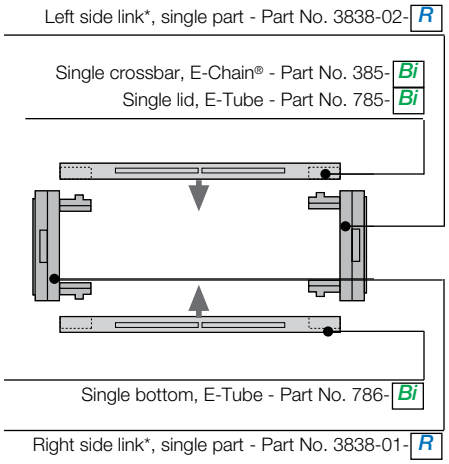


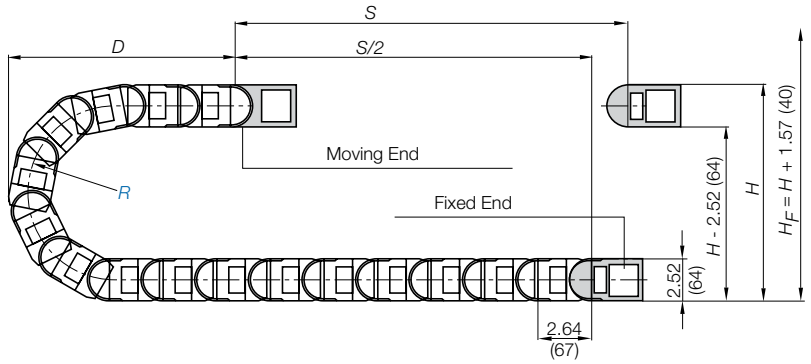

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 7838- | 25- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## E-Chain® as separate parts, links and side plates




*View from the moving point of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 3838/3938/R7838

Supplement part number with required radius. Example: 3838-30-300-0
Pitch: 2.64 in. (67mm) per link, links/ft(m) = 4.57 (15)

| Part Number | | | | | Weight | | |
|---|---|---|---|---|---|---|---|
| Crossbars Every Link | Crossbars Every Other | Tube Version | *Bi* in. (mm) | *Ba* in. (mm) | 3838 lbs/ft (kg/m) | 3938 lbs/ft (kg/m) | R7838 lbs/ft (kg/m) |
| 3838-05- | 3938-05 | *7838-05- | 1.97 (50) | 3.03 (77) | ≈ 1.38 (2.06) | ≈ 1.33 (1.98) | ≈ 1.51 (2.25) |
| 3838-06- | 3938-06- | | 2.68 (68) | 3.74 (95) | ≈ 1.40 (2.09) | ≈ 1.34 (1.99) | – |
| 3838-07- | 3938-07 | 7838-07- | 2.95 (75) | 4.02 (102) | ≈ 1.42 (2.12) | ≈ 1.35 (2.01) | ≈ 1.60 (2.38) |
| 3838-087- | 3938-087- | | 3.43 (87) | 4.53 (115) | ≈ 1.47 (2.18) | ≈ 1.37 (2.04) | – |
| 3838-10- | 3938-10- | 7838-10- | 3.94 (100) | 5.00 (127) | ≈ 1.51 (2.25) | ≈ 1.40 (2.08) | ≈ 1.75 (2.60) |
| 3838-11- | 3938-11- | 7838-11- | 4.25 (108) | 5.31 (135) | ≈ 1.55 (2.30) | ≈ 1.41 (2.10) | ≈ 1.78 (2.65) |
| 3838-112- | 3938-112- | | 4.41(112) | 5.51 (140) | ≈ 1.55 (2.30) | ≈ 1.41 (2.10) | – |
| 3838-12- | 3938-12- | 7838-12- | 4.92 (125) | 5.98 (152) | ≈ 1.61 (2.40) | ≈ 1.44 (2.15) | ≈ 1.89 (2.81) |
| 3838-137- | 3938-137- | | 5.39 (137) | 6.50 (165) | ≈ 1.64 (2.44) | ≈ 1.46 (2.17) | – |
| 3838-15- | 3938-15- | 7838-15- | 5.91 (150) | 6.97 (177) | ≈ 1.70 (2.53) | ≈ 1.49 (2.21) | ≈ 2.06 (3.07) |
| 3838-162- | 3938-162- | | 6.38 (162) | 7.48 (190) | ≈ 1.71 (2.55) | ≈ 1.49 (2.22) | – |
| 3838-17- | 3938-17- | 7838-17- | 6.61 (168) | 7.68 (195) | ≈ 1.76 (2.62) | ≈ 1.52 (2.26) | ≈ 2.18 (3.24) |
| 3838-18- | 3938-18- | | 6.89 (175) | 7.95 (202) | ≈ 1.76 (2.62) | ≈ 1.52 (2.26) | – |
| 3838-187- | 3938-187- | | 7.36 (187) | 8.46 (215) | ≈ 1.81 (2.69) | ≈ 1.55 (2.30) | – |
| 3838-20- | 3938-20- | 7838-20- | 7.87 (200) | 8.94 (227) | ≈ 1.86 (2.77) | ≈ 1.57 (2.33) | ≈ 2.37 (3.53) |
| 3838-212- | 3938-212- | | 8.35 (212) | 9.45 (240) | ≈ 1.91 (2.84) | ≈ 1.59 (2.37) | – |
| 3838-23- | 3938-23- | | 8.86 (225) | 9.92 (252) | ≈ 1.96 (2.92) | ≈ 1.62 (2.41) | – |
| 3838-237- | 3938-237- | | 9.33 (237) | 10.43 (265) | ≈ 1.99 (2.96) | ≈ 1.63 (2.43) | – |
| 3838-25- | 3938-25- | 7838-25- | 9.84 (250) | 10.91 (277) | ≈ 2.05 (3.05) | ≈ 1.66 (2.47) | ≈ 2.91 (4.33) |
| 3838-262- | 3938-262- | | 10.31 (262) | 11.42 (290) | ≈ 2.06 (3.06) | ≈ 1.67 (2.48) | – |
| 3838-28 | 3938-28- | | 10.83 (275) | 11.89 (302) | ≈ 2.13 (3.17) | ≈ 1.70 (2.53) | – |
| 3838-29- | 3938-29- | | 11.30 (287) | 12.40 (315) | ≈ 2.14 (3.19) | ≈ 1.71 (2.54) | – |
| 3838-30- | 3938-30- | 7838-30- | 11.81 (300) | 12.87 (327) | ≈ 2.23 (3.32) | ≈ 1.75 (2.61) | ≈ 3.29 (4.89) |
| 3838-312- | 3938-312- | | 12.28 (312) | 13.39 (340) | ≈ 2.24 (3.34) | ≈ 1.76 (2.62) | – |
| 3838-325- | 3938-325- | | 12.79 (325) | 13.86 (352) | ≈ 2.29 (3.41) | ≈ 1.79 (2.66) | – |
| 3838-337- | 3938-337- | | 13.27 (337) | 14.37 (365) | ≈ 2.33 (3.46) | ≈ 1.80 (2.68) | – |
| 3838-350- | 3938-350- | | 13.78 (350) | 15.41 (377) | ≈ 2.47 (3.68) | ≈ 1.88 (2.79) | – |
| 3838-362- | 3938-362- | | 14.25 (362) | 15.36 (390) | ≈ 2.51 (3.74) | ≈ 1.90 (2.82) | – |
| 3838-375- | 3938-375- | | 14.76 (375) | 15.83 (402) | ≈ 2.55 (3.79) | ≈ 1.91 (2.84) | – |
| 3838-387- | 3938-387- | | 15.24 (387) | 16.34 (415) | ≈ 2.59 (3.85) | ≈ 1.93 (2.87) | – |
| 3838-400 | 3938-400- | | 15.75 (400) | 16.81 (427) | ≈ 2.62 (3.90) | ≈ 1.95 (2.90) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 3838-07-150-0

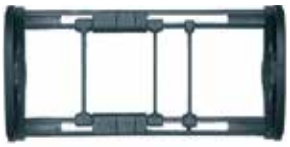
| | 075** | 100** | 115** | 125** | 150 | 170 | 200 | 215 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| H $^{-0}_{+20}$ | 8.46 (215) | 10.43 (265) | 11.61 (295) | 12.40 (315) | 14.37 (365) | 15.94 (405) | 18.31 (465) | 19.49 (495) | 22.24 (565) | 26.18 (665) | 30.12 (765) |
| D | 6.85 (174) | 7.83 (199) | 8.43 (214) | 8.82 (224) | 9.80 (249) | 10.59 (269) | 11.77 (299) | 12.36 (314) | 13.74 (349) | 15.71 (399) | 17.68 (449) |
| K | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 26.38 (670) | 30.12 (765) | 31.89 (810) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

** This radius is not available for the R7838 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.235. For large diameter hoses see page 6.235

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

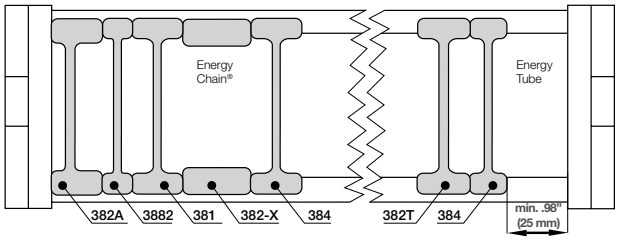
# E-Chain System® E4/4
# Series 3838/3938/R7838
# Interior Separation



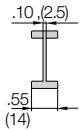
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



**STANDARD Vertical separator 380**

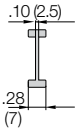



**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 380** |
| Assembled | **Part No. 381** |

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Vertical separator 3881**

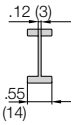



**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 3881** |
| Assembled | **Part No. 3882** |

- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.

**Vertical separator 380T**

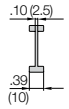



**Vertical Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 380T** |
| Assembled | **Part No. 381T** |

- **Locking separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.

**Vertical separator 383**

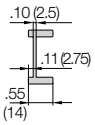



**Locking Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 383** |
| Assembled | **Part No. 384** |

- **Vertical separator 383 for E-Chains®**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force. Ensures proper alignment.

**Asymmetric separator 381A**




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381A** |
| Assembled | **Part No. 382A** |

- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 381-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39" | (10) |
| **381 -15** | **382 -15** | .59" | (15) |
| **381 -20** | **382 -20** | 79" | (20) |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

igus® E-Chain System®
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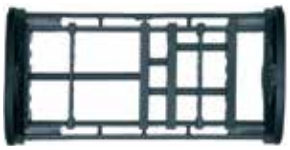
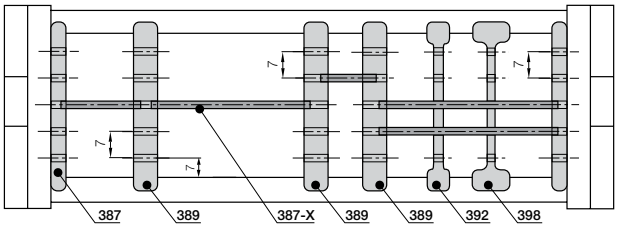
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/4
# Series 3838/3938/R7838
# Interior Separation

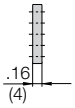


## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.




**Side Plate**

| | |
|---|---|
| Unassembled | **Part No. 386** |
| Assembled | **Part No. 387** |

**Side plate 386**

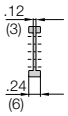
- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.

**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 388** |
| Assembled | **Part No. 389** |

**Vertical separator 388**

- **Closed slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.

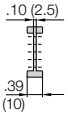



**Slotted Separators**

| | |
|---|---|
| Unassembled | **Part No. 391** |
| Assembled | **Part No. 392** |

**Closed slotted separator 391**

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the 3 middle slots only.




**Slotted Separators, Open**

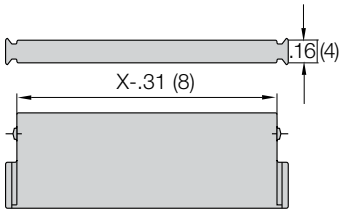
| | |
|---|---|
| Unassembled | **Part No. 397** |
| Assembled | **Part No. 398** |

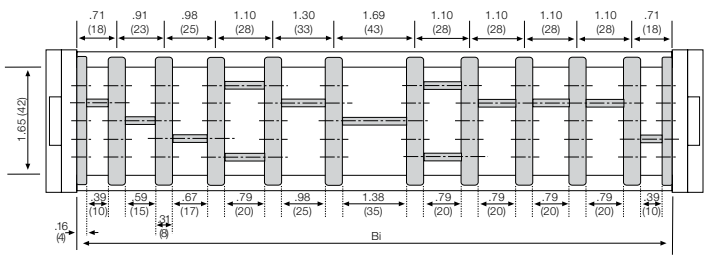
**Open slotted separator 397**

| Width X | | Usable Width | | Part No. | Part No. |
|---|---|---|---|---|---|
| in. | (mm) | in. | (mm) | Unassembled | Assembled |
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 3838/3938/R7838
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

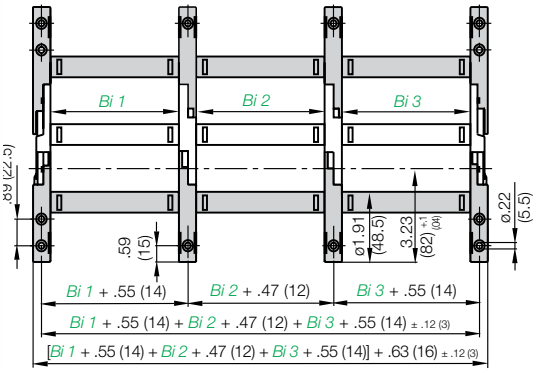
**3838-10/20/10-[200]-0**

**3838-*Bi1*/*Bi2*/*Bi3*-[*R*]-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

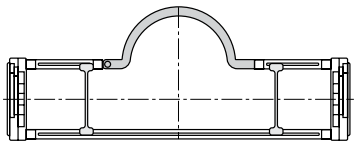
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



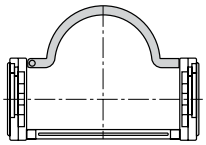
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



**Round extender crossbar combined with standard snap-open crossbars.**

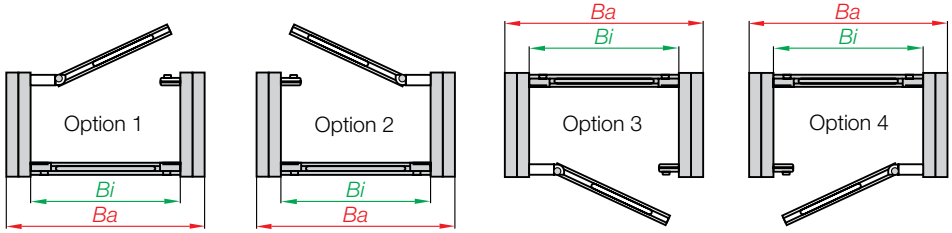


**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | By request | Round | No | Yes |
| **385-18-RD115** | By request | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance

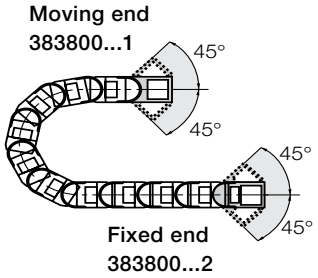


# E-Chain System® E4/4
# Series 3838/3938/R7838
# Mounting Brackets - KMA

Standard

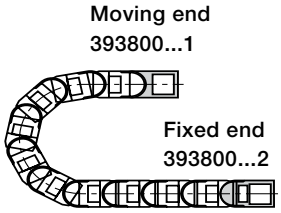
## Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions



## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



### Part Number Structure

383800- 07- 12 T P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 383800 = Pivoting, 393800 = Locking

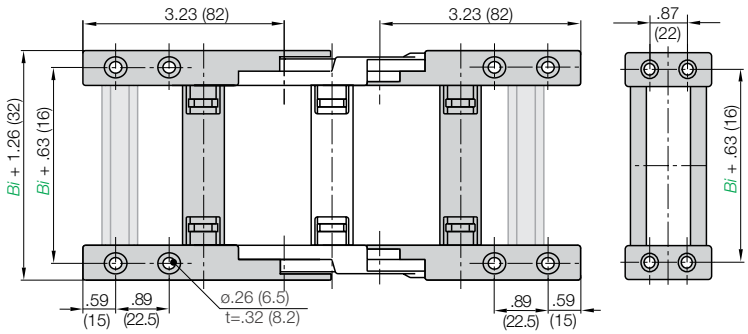
**Full set, for both ends:**

383800- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

383800- 05- 1 Mounting bracket **with bore**

383800- 05- 2 Mounting bracket **with pin**




**Part number examples are shown for pivoting brackets. For locking brackets change part number to 393800**

**Part No. Full Set** (pivoting)
Series 3838 or 3938:
383800-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 3838 or 3938
383800-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R7838
383800-Width-12T

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R7838
383800-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05* | 383800 | 393800 | -05-12 | T | P | 1.97 (50) |
| -06 | 383800 | 393800 | -06-12 | | P | 2.68 (68) |
| -07 | 383800 | 393800 | -07-12 | T | P | 2.95 (75) |
| -087 | 383800 | 393800 | -087-12 | | P | 3.43 (87) |
| -10 | 383800 | 393800 | -10-12 | T | P | 3.94 (100) |
| -11 | 383800 | 393800 | -11-12 | T | P | 4.25 (108) |
| -112 | 383800 | 393800 | -112-12 | | P | 4.41 (112) |
| -12 | 383800 | 393800 | -12-12 | T | P | 4.92 (125) |
| -137 | 383800 | 393800 | -137-12 | | P | 5.39 (137) |
| -15 | 383800 | 393800 | -15-12 | T | P | 5.91 (150) |
| -162 | 383800 | 393800 | -162-12 | | P | 6.38 (162) |
| -17 | 383800 | 393800 | -17-12 | T | P | 6.61 (168) |
| -18 | 383800 | 393800 | -18-12 | | P | 6.89 (175) |
| -187 | 383800 | 393800 | -187-12 | | P | 7.36 (187) |
| -20 | 383800 | 393800 | -20-12 | T | P | 7.87 (200) |
| -212 | 383800 | 393800 | -212-12 | | P | 8.35 (212) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -23 | 383800 | 393800 | -23-12 | | P | 8.86 (225) |
| -237 | 383800 | 393800 | -237-12 | | P | 9.33 (237) |
| -25 | 383800 | 393800 | -25-12 | T | P | 9.84 (250) |
| -262 | 383800 | 393800 | -262-12 | | P | 10.31 (262) |
| -28 | 383800 | 393800 | -28-12 | | P | 10.83 (275) |
| -29 | 383800 | 393800 | -29-12 | | P | 11.30 (287) |
| -30 | 383800 | 393800 | -30-12 | T | P | 11.81 (300) |
| -312 | 383800 | 393800 | -312-12 | | P | 12.28 (312) |
| -325 | 383800 | 393800 | -325-12 | | P | 12.79 (325) |
| -337 | 383800 | 393800 | -337-12 | | P | 13.27 (337) |
| -350 | 383800 | 393800 | -350-12 | | P | 13.78 (350) |
| -362 | 383800 | 393800 | -362-12 | | P | 14.25 (362) |
| -375 | 383800 | 393800 | -375-12 | | P | 14.76 (375) |
| -387 | 383800 | 393800 | -387-12 | | P | 15.24 (387) |
| -400 | 383800 | 393800 | -400-12 | | P | 15.75 (400) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 3838/3938/R7838
# Mounting Brackets - Steel

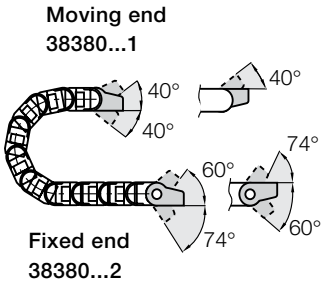


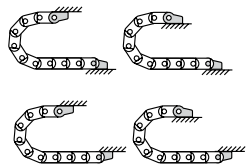
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For pivoting connections
- One part (two-piece) for all chain widths
- Electrically conductive



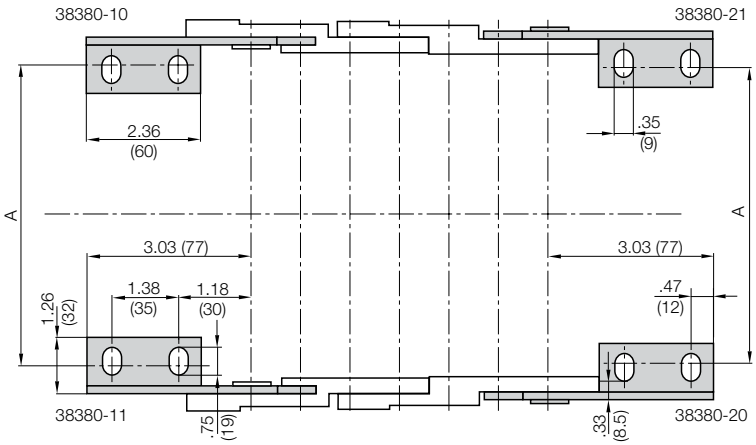


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 3838, 3938 or R7838:
**38380-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
**38380-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right
Series 3838, 3938 or R7838:
**38380-2**

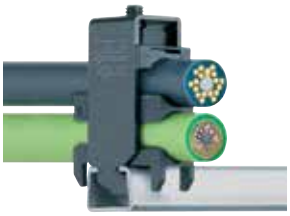



| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50)* | 38380 | -12 | -1 | -2 | 3.54 (90) |
| 2.68 (68) | 38380 | -12 | -1 | -2 | 1.57 (40) |
| 2.95 (75) | 38380 | -12 | -1 | -2 | 18.5 (47) |
| 3.43 (87) | 38380 | -12 | -1 | -2 | 2.32 (59) |
| 3.94 (100) | 38380 | -12 | -1 | -2 | 2.83 (72) |
| 4.25 (108) | 38380 | -12 | -1 | -2 | 3.14 (80) |
| 4.41 (112) | 38380 | -12 | -1 | -2 | 3.30 (84) |
| 4.92 (125) | 38380 | -12 | -1 | -2 | 3.81 (97) |
| 5.39 (137) | 38380 | -12 | -1 | -2 | 4.29 (109) |
| 5.91 (150) | 38380 | -12 | -1 | -2 | 4.80 (122) |
| 6.38 (162) | 38380 | -12 | -1 | -2 | 5.27 (134) |
| 6.61 (168) | 38380 | -12 | -1 | -2 | 5.51 (140) |
| 6.89 (175) | 38380 | -12 | -1 | -2 | 5.78 (147) |
| 7.36 (187) | 38380 | -12 | -1 | -2 | 6.25 (159) |
| 7.87 (200) | 38380 | -12 | -1 | -2 | 6.77 (172) |
| 8.35 (212) | 38380 | -12 | -1 | -2 | 7.24 (184) |

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 8.86 (225) | 38380 | -12 | -1 | -2 | 7.75 (197) |
| 9.33 (237) | 38380 | -12 | -1 | -2 | 8.22 (209) |
| 9.84 (250) | 38380 | -12 | -1 | -2 | 8.74 (222) |
| 10.31 (262) | 38380 | -12 | -1 | -2 | 9.21 (234) |
| 10.83 (275) | 38380 | -12 | -1 | -2 | 9.72 (247) |
| 11.30 (287) | 38380 | -12 | -1 | -2 | 10.19 (259) |
| 11.81 (300) | 38380 | -12 | -1 | -2 | 10.70 (272) |
| 12.28 (312) | 38380 | -12 | -1 | -2 | 11.18 (284) |
| 12.79 (325) | 38380 | -12 | -1 | -2 | 11.69 (297) |
| 13.27 (337) | 38380 | -12 | -1 | -2 | 12.16 (309) |
| 13.78 (350) | 38380 | -12 | -1 | -2 | 12.67 (322) |
| 14.25 (362) | 38380 | -12 | -1 | -2 | 13.14 (334) |
| 14.76 (375) | 38380 | -12 | -1 | -2 | 13.66 (347) |
| 15.24 (387) | 38380 | -12 | -1 | -2 | 14.13 (359) |
| 15.75 (400) | 38380 | -12 | -1 | -2 | 4.64 (372) |

*Mounting bracket feet must face outward

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

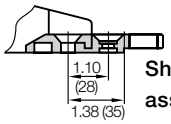
## Chainfix Clip

### Modular snap-on strain relief device

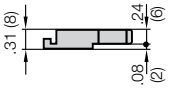
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

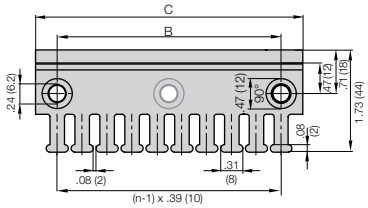



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 3838/3938/R7838
# Guide Troughs

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 93-30**
- 1/2 travel length of glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 93-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

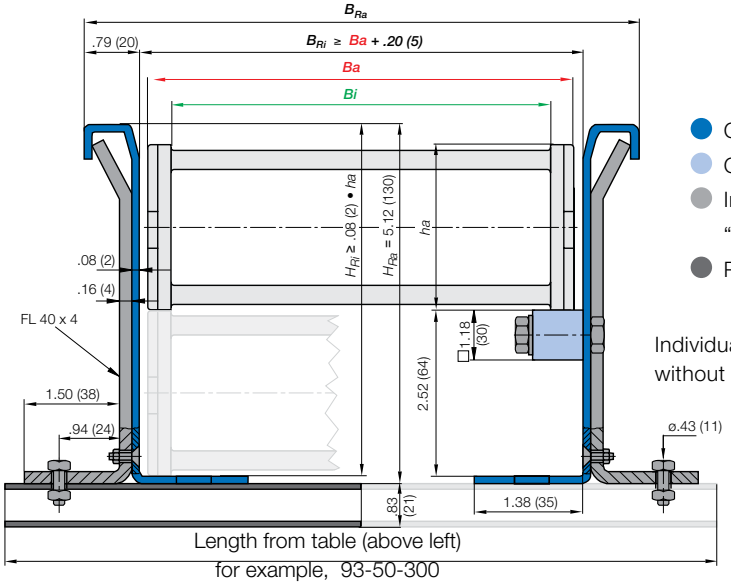
Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

Width of Crossbar
380-**05**-200-0

| $B_{Ri}$ | | Installation Part No. |
|---|---|---|
| -05 | 3.23 (82) | **93-50-200** |
| -06 | 3.94 (100) | **93-50-225** |
| -07 | 4.21 (107) | **93-50-225** |
| -087 | 4.72 (120) | **93-50-250** |
| -10 | 5.20 (132) | **93-50-250** |
| -11 | 5.51 (140) | **93-50-250** |
| -112 | 5.71 (145) | **93-50-275** |
| -12 | 6.18 (157) | **93-50-275** |
| -137 | 6.69 (170) | **93-50-300** |
| -15 | 7.16 (182) | **93-50-300** |
| -162 | 7.68 (195) | **93-50-325** |
| -17 | 7.87 (200) | **93-50-325** |
| -18 | 8.15 (207) | **93-50-325** |
| -187 | 8.66 (220) | **93-50-350** |
| -20 | 9.13 (232) | **93-50-350** |
| -212 | 9.65 (245) | **93-50-375** |
| -23 | 10.12 (257) | **93-50-375** |
| -237 | 10.63 (270) | **93-50-400** |
| -25 | 11.10 (282) | **93-50-400** |
| -262 | 11.61 (295) | **93-50-425** |
| -28 | 12.09 (307) | **93-50-425** |
| -29 | 12.60 (320) | **93-50-450** |
| -30 | 13.07 (332) | **93-50-450** |
| -312 | 13.58 (345) | **93-50-475** |
| -325 | 14.06 (357) | **93-50-475** |
| -337 | 14.57 (370) | **93-50-500** |
| -350 | 15.04 (382) | **93-50-500** |
| -362 | 15.55 (395) | **93-50-525** |
| -375 | 16.02 (407) | **93-50-525** |
| -387 | 16.53 (420) | **93-50-550** |
| -400 | 17.01 (432) | **93-50-550** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

**For further technical information on guide troughs**
**➤ Chapter 9**

E4/4 as ZigZag version in this crane.

## Roll instead of gliding: Rol E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® Rol E-Chain®.
Series 3838R - Order example 3838R-30-220-0
**Further information: Call igus® at 800-521-2747**

# E-Chain System® E4/4
# Series 4040/4140/R8840

For new applications use Series E4-56

2.20" 2.20"

## Price Index

Series 4040

Series 4140

Series R8840

## Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

## Usage Guidelines

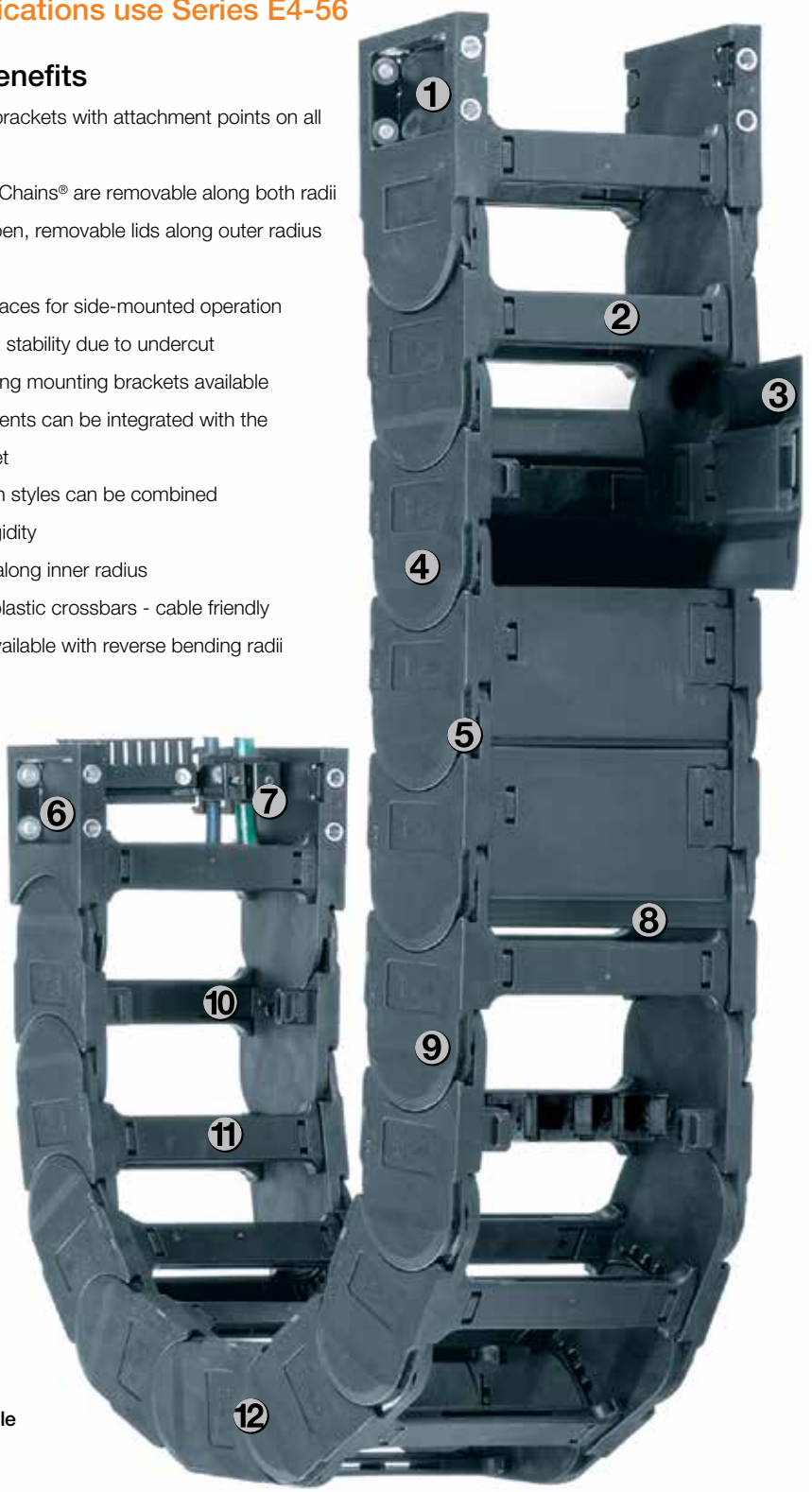
- If subject to high torsional or shearing forces
- For side mounted applications involving long unsupported lengths
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series 400/410/R880**
- If a simple low-cost solution is required
  ➤ **Series 14040/R18840**
- When very long travels or high additional loads are involved
  ➤ **Series 4040HD**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. High side-mount stability due to undercut
6. Locking or pivoting mounting brackets available
7. Strain relief elements can be integrated with the mounting bracket
8. Closed and open styles can be combined
9. High torsional rigidity
10. Removable lids along inner radius
11. Wide, rounded plastic crossbars - cable friendly
12. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 4040R/8840R available upon request




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **4040-30-300-0** | **E-Chain®** |
| With 2 separators **411** assembled every 2nd link | **Interior Separation** |
| 1 Set **404000-30-12P** | **Mounting Bracket** |

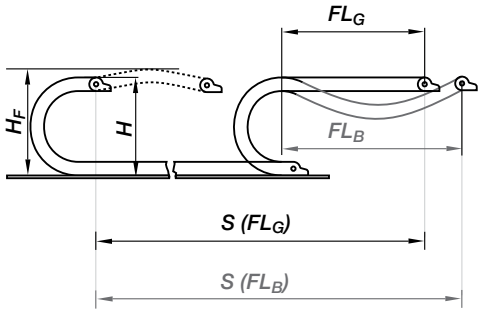
# E-Chain System® E4/4
# Series 4040/4140/R8840
# Installation Dimensions

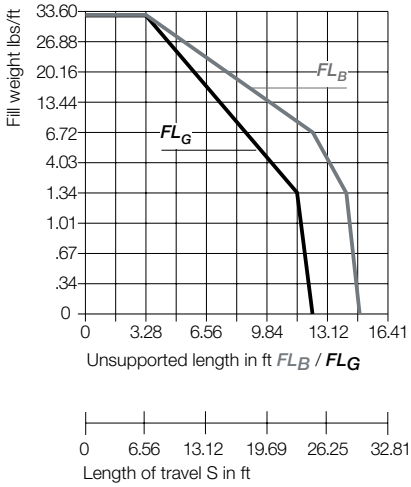


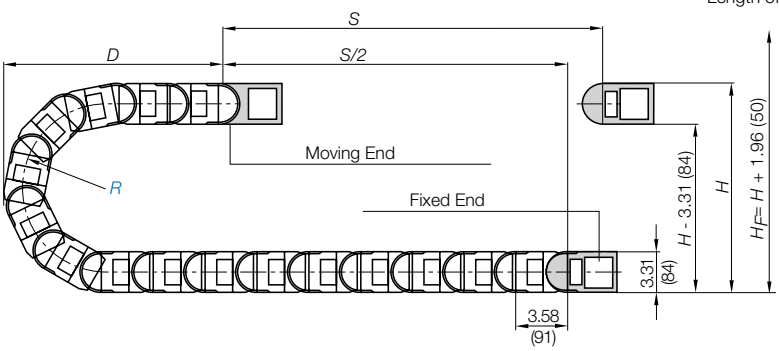
## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

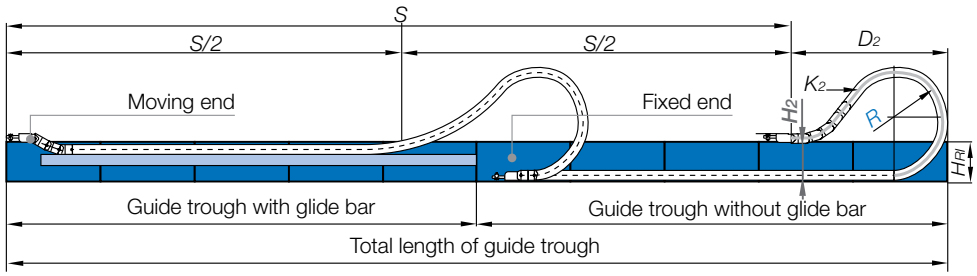
The required clearance height: $H_F = H$ **+ 1.96 in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H^{*0}_{+25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 22.24 (565) | 23.03 (585) | 26.97 (685) | 30.91 (785) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 14.76 (375) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 40.16 (1020) | 41.34 (1050) | 48.23 (1225) | 52.76 (1340) | 57.09 (1450) | 69.88 (1775) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 984 ft. (300m)**

**For center mount applications:**
**Chain length: =** $\frac{S}{2} + K_2$




| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | - | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_{2\ +25}$ | - | 18.90 (480) | 23.62 (600) | 28.74 (730) | 36.61 (930) | 37.01 (940) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 72.83 (1850) |
| $K_2$ | - | 32.24 (819) | 42.99 (1092) | 50.16 (274) | 60.91 (1547) | 60.91 (1547) | 78.82 (2002) | 93.15 (2366) | 100.31 (2548) | 125.39 (3185) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

### Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

### Technical Data

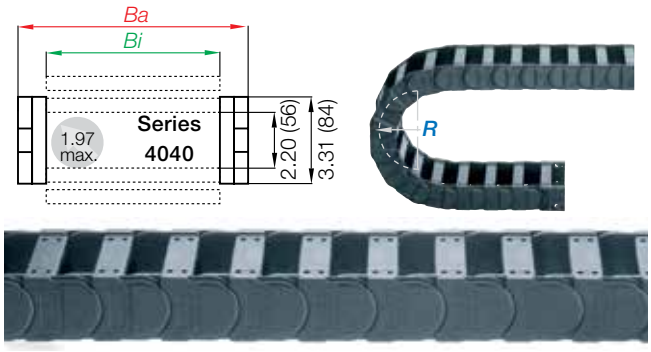
Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040/4140/R8840

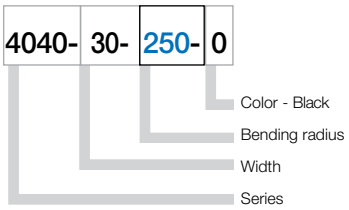
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 4040 - E-Chain® with crossbars every link

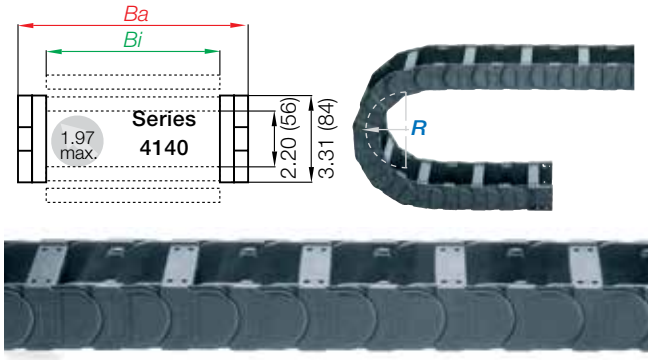



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

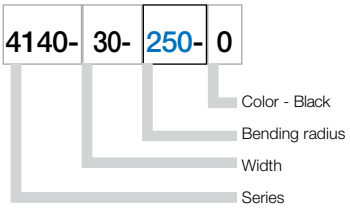



## Series 4140 - E-Chain® with crossbars every other link

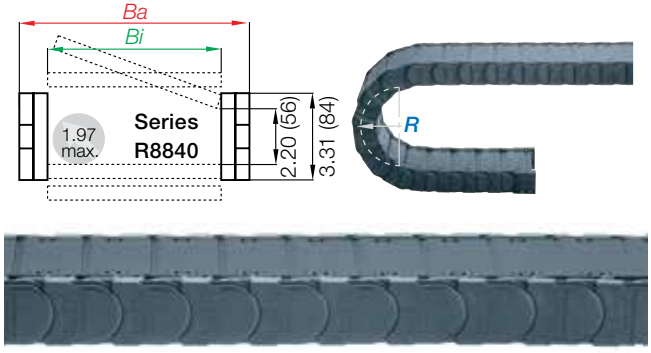



- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

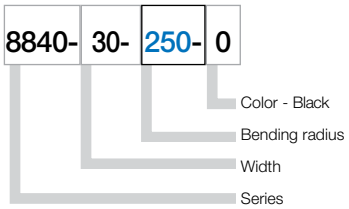



## Series R8840 - fully enclosed E-Tube

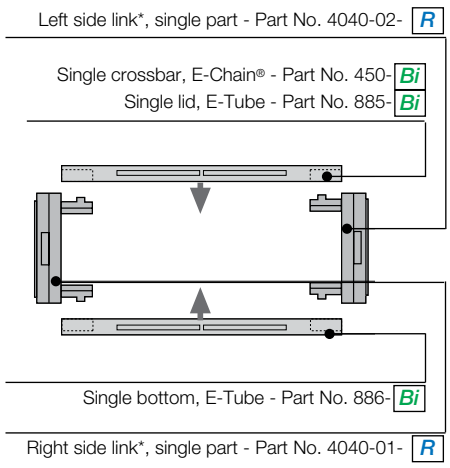


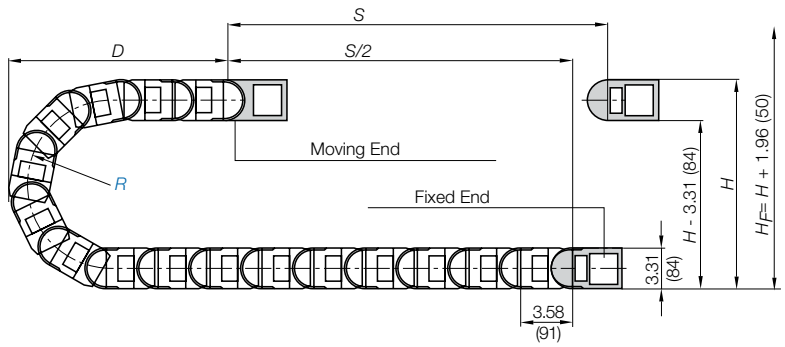

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the moving point of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 4040/4140/R8840

Supplement part number with required radius. Example: 4040-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)



| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 4040 lbs/ft (kg/m) | 4140 lbs/ft (kg/m) | R8840 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 4040-05- | 4140-05- | | -0 | 1.97 (50) | 3.39 (86) | ≈ 2.45 (3.65) | ≈ 2.63 (3.58) | – |
| 4040-06- | 4140-06- | | -0 | 2.56 (65) | 3.98 (101) | ≈ 2.47 (3.67) | ≈ 2.15 (3.60) | – |
| 4040-07- | 4140-07- | 8840-07- | -0* | 2.95 (75) | 4.37 (111) | ≈ 2.54 (3.78) | ≈ 2.31 (3.70) | ≈ 2.85 (4.24) |
| 4040-08- | 4140-08- | | -0 | 3.43 (87) | 4.84 (123) | ≈ 2.57 (3.83) | ≈ 2.52 (3.75) | – |
| 4040-10- | 4140-10- | 8840-10- | -0 | 3.94 (100) | 5.35 (136) | ≈ 2.66 (3.96) | ≈ 2.37 (3.78) | ≈ 3.04 (4.52) |
| 4040-11- | 4140-11 | - | -0 | 4.41 (112) | 5.87 (149) | ≈ 2.75 (4.09) | ≈ 2.42 (3.85) | – |
| 4040-12- | 4140-12- | 8840-12- | -0 | 4.92 (125) | 6.34 (161) | ≈ 2.80 (4.16) | ≈ 2.44 (3.88) | ≈ 3.28 (4.88) |
| 4040-13- | 4140-13- | | -0 | 5.39 (137) | 6.85 (174) | ≈ 2.88 (4.29) | ≈ 2.49 (3.95) | – |
| 4040-15- | 4140-15- | 8840-15- | -0 | 5.91 (150) | 7.32 (186) | ≈ 2.93 (4.36) | ≈ 2.51 (3.98) | ≈ 3.57 (5.31) |
| 4040-16- | 4140-16- | | -0 | 6.38 (162) | 7.83 (199) | ≈ 3.00 (4.47) | ≈ 2.54 (4.04) | – |
| 4040-17- | 4140-17- | 8840-17 | -0 | 6.89 (175) | 8.31 (211) | ≈ 3.08 (4.58) | ≈ 2.58 (4.09) | ≈ 3.74 (5.56) |
| 4040-18- | 4140-18- | | -0 | 7.36 (187) | 8.81 (224) | ≈ 3.15 (4.69) | ≈ 2.61 (4.15) | – |
| 4040-20- | 4140-20- | 8840-20- | -0 | 7.87 (200) | 9.29 (236) | ≈ 3.17 (4.71) | ≈ 2.63 (4.16) | ≈ 3.96 (5.89) |
| 4040-21- | 4140-21- | | -0 | 8.35 (212) | 9.80 (249) | ≈ 3.24 (4.82) | ≈ 2.66 (4.21) | – |
| 4040-22- | 4140-22- | | -0 | 8.86 (225) | 10.28 (261) | ≈ 3.28 (4.88) | ≈ 2.68 (4.25) | – |
| 4040-23- | 4140-23- | | -0 | 9.33 (237) | 10.79 (274) | ≈ 3.37 (5.02) | ≈ 2.73 (4.31) | – |
| 4040-25- | 4140-25- | 8840-25- | -0 | 9.84 (250) | 11.26 (286) | ≈ 3.43 (5.10) | ≈ 2.76 (4.36) | ≈ 4.44 (6.61) |
| 4040-26- | 4140-26- | | -0 | 10.31 (262) | 11.77 (299) | ≈ 3.49 (5.19) | ≈ 2.79 (4.40) | – |
| 4040-27- | 4140-27- | 8840-27 | -0 | 10.83 (275) | 12.24 (311) | ≈ 3.56 (5.30) | ≈ 2.82 (4.46) | ≈ 4.63 (6.89) |
| 4040-28- | 4140-28- | | -0 | 11.30 (287) | 12.76 (324) | ≈ 3.58 (5.32) | ≈ 2.83 (4.47) | – |
| 4040-30- | 4140-30- | 8840-30- | -0 | 11.81 (300) | 13.23 (336) | ≈ 3.72 (5.54) | ≈ 2.90 (4.58) | ≈ 4.89 (7.27) |
| 4040-31- | 4140-31- | | -0 | 12.28 (312) | 13.74 (349) | ≈ 3.75 (5.58) | ≈ 3.09 (4.60) | – |
| 4040-32- | 4140-32- | | -0 | 12.79 (325) | 14.21 (361) | ≈ 3.78 (5.63) | ≈ 2.94 (4.62) | – |
| 4040-33- | 4140-33- | | -0 | 13.27 (337) | 14.72 (374) | ≈ 3.90 (5.81) | ≈ 3.00 (4.71) | – |
| 4040-35- | 4140-35- | 8840-35- | -0 | 13.78 (350) | 15.20 (386) | ≈ 4.01 (5.96) | ≈ 3.04 (4.79) | ≈ 5.39 (8.02) |
| 4040-36- | 4140-36- | | -0 | 14.25 (362) | 15.71 (399) | ≈ 4.01 (5.96) | ≈ 3.04 (4.79) | – |
| 4040-37- | 4140-37- | | -0 | 14.76 (375) | 16.18 (411) | ≈ 4.02 (5.98) | ≈ 3.05 (4.80) | – |
| 4040-38- | 4140-38- | | -0 | 15.24 (387) | 16.69 (424) | ≈ 4.08 (6.07) | ≈ 3.08 (4.84) | – |
| 4040-40- | 4140-40- | 8840-40- | -0 | 15.75 (400) | 17.17 (436) | ≈ 4.21 (6.27) | ≈ 3.15 (4.94) | ≈ 6.04 (8.98) |
| 4040-41- | 4140-41- | | -0 | 16.22 (412) | 17.68 (449) | ≈ 4.31 (6.42) | ≈ 3.20 (5.02) | – |
| 4040-42- | 4140-42- | | -0 | 16.73 (425) | 18.15 (461) | ≈ 4.42 (6.58) | ≈ 3.25 (5.09) | – |
| 4040-43- | 4140-43- | | -0 | 17.20 (437) | 18.66 (474) | ≈ 4.46 (6.64) | ≈ 3.27 (5.13) | – |
| 4040-45- | 4140-45- | | -0 | 17.72 (450) | 19.13 (486) | ≈ 4.51 (6.71) | ≈ 3.30 (5.16) | – |
| 4040-46- | 4140-46- | 8840-46- | -0 | 18.19 (462) | 19.65 (499) | ≈ 4.52 (6.73) | ≈ 3.49 (5.19) | ≈ 6.34 (9.44) |
| 4040-47- | 4140-47- | | -0 | 18.70 (475) | 20.12 (511) | ≈ 4.61 (6.86) | ≈ 3.35 (5.24) | – |
| 4040-48- | 4140-48- | | -0 | 19.17 (487) | 20.63 (524) | ≈ 4.63 (6.88) | ≈ 3.55 (5.28) | – |
| 4040-50- | 4140-50- | | -0 | 19.69 (500) | 21.10 (536) | ≈ 4.70 (7.00) | ≈ 3.39 (5.30) | – |
| 4040-51- | 4140-51- | | -0 | 20.16 (512) | 21.61 (549) | ≈ 4.72 (7.02) | ≈ 3.40 (5.31) | – |
| 4040-52- | 4140-52- | | -0 | 20.67 (525) | 22.09 (561) | ≈ 4.74 (7.06) | ≈ 3.41 (5.34) | – |
| 4040-53- | 4140-53- | | -0 | 21.14 (537) | 22.60 (574) | ≈ 4.85 (7.22) | ≈ 3.47 (5.41) | – |
| 4040-55- | 4140-55- | | -0 | 21.65 (550) | 23.07 (586) | ≈ 5.17 (7.70) | ≈ 3.63 (5.65) | – |
| 4040-60- | 4140-60- | | -0 | 23.62 (600) | 25.04 (636) | ≈ 5.31 (7.90) | ≈ 3.70 (5.75) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 4040-30-300-0

| | 135** | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|
| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
| H**+25 | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 22.24 (565) | 23.03 (585) | 26.97 (685) | 30.91 (785) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 14.76 (375) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 40.16 (1020) | 41.34 (1050) | 48.23 (1225) | 52.76 (1340) | 57.09 (1450) | 69.88 (1775) |

** This radius is not available for the R8840 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.247. For large diameter hoses see page 6.247

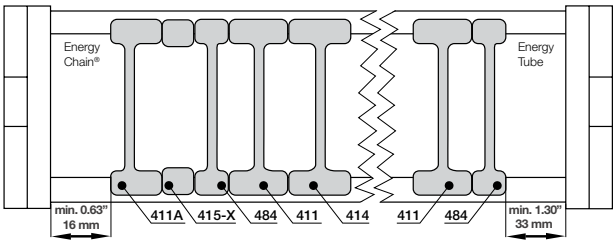
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Interior Separation

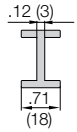
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



**STANDARD Vertical separator 401**

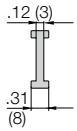



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 401** |
| Assembled | **Part No. 411** |

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Vertical separator 483**




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 483** |
| Assembled | **Part No. 484** |

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

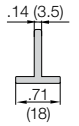
**Locking separator 404**

**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 404** |
| Assembled | **Part No. 414** |

- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

**Locking separator 406**

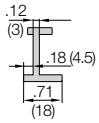



**Locking separator (tube only)**

| | |
|---|---|
| Unassembled | **Part No. 406** |
| Assembled | **Part No. 416** |

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar

**Asymmetric separator 401A**




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 401A** |
| Assembled | **Part No. 411A** |

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 405-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

- NOTE ON SPACERS
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

igus® E-Chain System®
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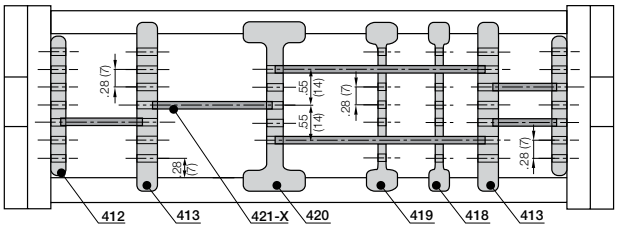
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Interior Separation

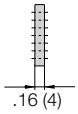
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



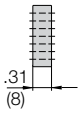

- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.




| Side plate | |
|---|---|
| Unassembled | **Part No. 402** |
| Assembled | **Part No. 412** |

Side plate 402

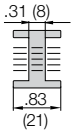
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 403** |
| Assembled | **Part No. 413** |

Vertical separator 403

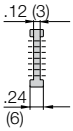
- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.




| Locking vertical separator | |
|---|---|
| Unassembled | **Part No. 410** |
| Assembled | **Part No. 420** |

Locking vertical separator 410

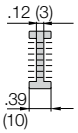
- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




| Slotted separators, closed | |
|---|---|
| Unassembled | **Part No. 408** |
| Assembled | **Part No. 418** |

Closed slotted separator 408

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots




| Slotted separators, open | |
|---|---|
| Unassembled | **Part No. 409** |
| Assembled | **Part No. 419** |

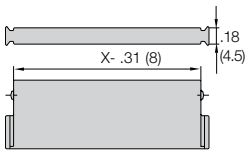
Open slotted separator 409

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

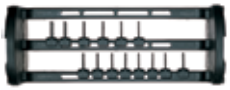
| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

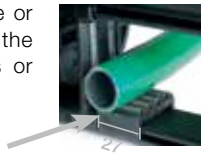
| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



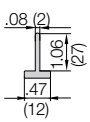
**Center crossbar** - developed for applications involving a very large number of thin cables, individually separated. This offers the option of subdividing the E-Chain® into upper and lower halves, with mutually independent separators.

**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables

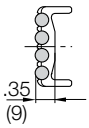




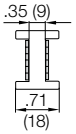

**Roller separator -** performs a similar function to the Rollclip, but doubles as a separator. Consult igus® if you have any questions regarding the roller separator.




| Center crossbar | |
|---|---|
| Unassembled | **Part No. 405** |
| Assembled | **Part No. 415** |




| Rollclip | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |




| Roller separator | |
|---|---|
| Unassembled | **Part No. 429** |
| Assembled | **Part No. 430** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

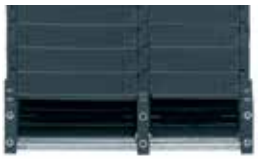
igus®

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Special Accessories



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



Part number example for E-Chain®

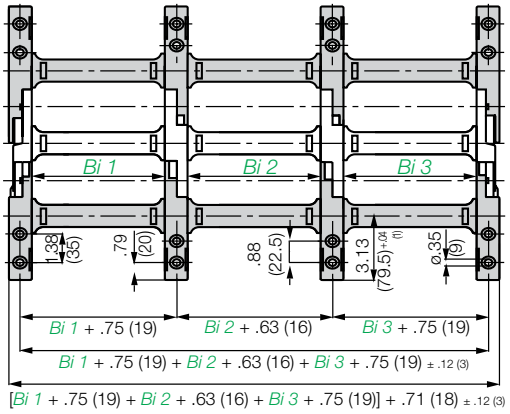
**4040-10/20/10-200-0**

**4040-*Bi1*/*Bi2*/*Bi3*-R-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

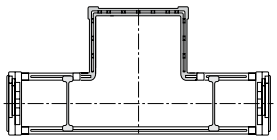
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



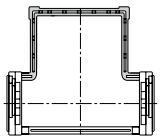
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

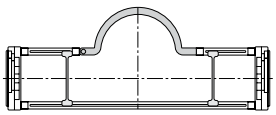
- Intended for cables and hoses with a maximum outer diameter of 9.64 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



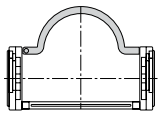
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | By request | Round | No | Yes |
| **450-17-RD115** | By request | Round | Yes | No |
| **450-25-D150** | By request | Square | Yes | No |
| **450-30-D200** | By request | Square | Yes | No |
| **450-35-D250** | By request | Square | Yes | No |
| **450-40-D300** | By request | Square | Yes | No |
| **450-20-HD150** | By request | Square | No | Yes |
| **450-25-HD200** | By request | Square | No | Yes |
| **450-30-HD250** | By request | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

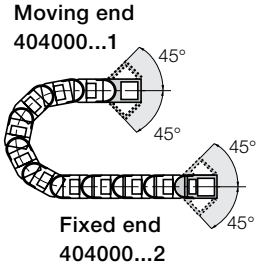
| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

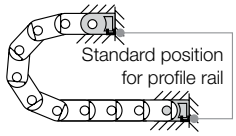
# E-Chain System® E4/4
# Series 4040/4140/R8840
# Mounting Brackets - KMA

Standard

## Option 1: KMA pivoting

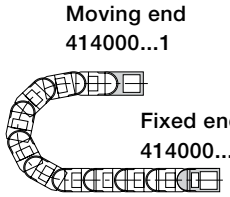
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

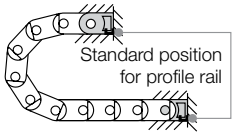





## Option 2: KMA locking

- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels

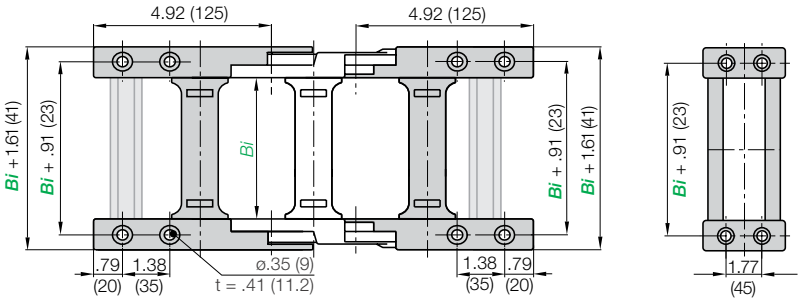





**Part Number Structure**

404000- | 07- | 12 | T | P

- With Profile Rail
- Tube version
- Complete Set
- Width
- 404000 = Pivoting, 414000 = Locking




**Full set, for both ends:**

404000- | 05- | 12 Full set, **each part with pin/bore**

**Single-part order:**

404000- | 05- | 1 Mounting bracket **with bore**

404000- | 05- | 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 414000**

**Part No. Full Set** (pivoting)
Series 4040 or 4140:
404000-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 4040 or 4140
404000-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R8840
404000-Width-12T

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R8840
404000-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05 | 404000 | 414000 | -05-12 | | P | 1.97 (50) |
| -06 | 404000 | 414000 | -06-12 | | P | 2.56 (65) |
| -07 | 404000 | 414000 | -07-12 | T | P | 2.95 (75) |
| -08 | 404000 | 414000 | -08-12 | | | 3.43 (87) |
| -10 | 404000 | 414000 | -10-12 | T | P | 3.94 (100) |
| -11 | 404000 | 414000 | -11-12 | | P | 4.41 (112) |
| -12 | 404000 | 414000 | -12-12 | T | P | 4.92 (125) |
| -13 | 404000 | 414000 | -13-12 | | P | 5.39 (137) |
| -15 | 404000 | 414000 | -15-12 | T | P | 5.91 (150) |
| -16 | 404000 | 414000 | -16-12 | | P | 6.38 (162) |
| -17 | 404000 | 414000 | -17-12 | T | P | 6.89 (175) |
| -18 | 404000 | 414000 | -18-12 | | P | 7.36 (187) |
| -20 | 404000 | 414000 | -20-12 | T | P | 7.87 (200) |
| -21 | 404000 | 414000 | -21-12 | | P | 8.35 (212) |
| -22 | 404000 | 414000 | -22-12 | | P | 8.86 (225) |
| -23 | 404000 | 414000 | -23-12 | | P | 9.33 (237) |
| -25 | 404000 | 414000 | -25-12 | T | P | 9.84 (250) |
| -26 | 404000 | 414000 | -26-12 | | P | 10.31 (262) |
| -27 | 404000 | 414000 | -27-12 | T | P | 10.83 (275) |
| -28 | 404000 | 414000 | -28-12 | | P | 11.30 (287) |
| -30 | 404000 | 414000 | -30-12 | T | P | 11.81 (300) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -31 | 404000 | 414000 | -31-12 | | P | 12.28 (312) |
| -32 | 404000 | 414000 | -32-12 | | P | 12.79 (325) |
| -33 | 404000 | 414000 | -33-12 | | P | 13.27 (337) |
| -35 | 404000 | 414000 | -35-12 | T | P | 13.78 (350) |
| -36 | 404000 | 414000 | -36-12 | | P | 14.25 (362) |
| -37 | 404000 | 414000 | -37-12 | | P | 14.76 (375) |
| -38 | 404000 | 414000 | -38-12 | | P | 15.24 (387) |
| -40 | 404000 | 414000 | -40-12 | T | P | 15.75 (400) |
| -41 | 404000 | 414000 | -41-12 | | P | 16.22 (412) |
| -42 | 404000 | 414000 | -42-12 | | P | 16.73 (425) |
| -43 | 404000 | 414000 | -43-12 | | P | 17.20 (437) |
| -45 | 404000 | 414000 | -45-12 | | P | 17.72 (450) |
| -46 | 404000 | 414000 | -46-12 | T | P | 18.19 (462) |
| -47 | 404000 | 414000 | -47-12 | | P | 18.70 (475) |
| -48 | 404000 | 414000 | -48-12 | | P | 19.17 (487) |
| -50 | 404000 | 414000 | -50-12 | | P | 19.69 (500) |
| -51 | 404000 | 414000 | -51-12 | | P | 20.16 (512) |
| -52 | 404000 | 414000 | -52-12 | | P | 20.67 (525) |
| -53 | 404000 | 414000 | -53-12 | | P | 21.14 (537) |
| -55 | 404000 | 414000 | -55-12 | | P | 21.65 (550) |
| -60 | 404000 | 414000 | -60-12 | | P | 23.62 (600) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Mounting Brackets - Steel

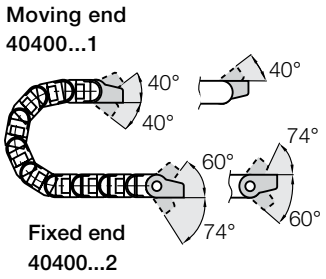


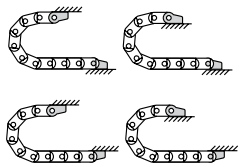
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



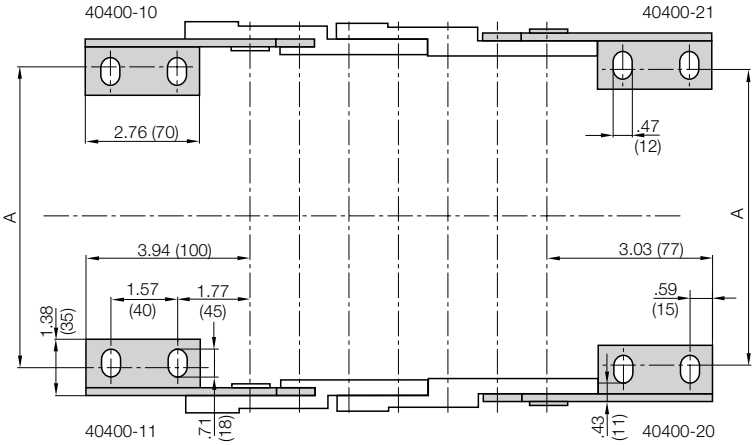


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 4040, 4140 or R8840:
**40400-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 4040, 4140 or R8840
**40400-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 4040, 4140 or R8840
**40400-2**



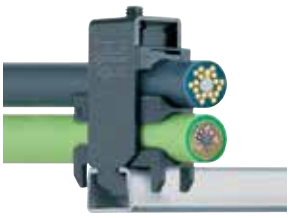

## Bracket Mounting dimensions

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) | Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50)* | 40400 | -12 | -1 | -2 | 1.18 (30) | 12.28 (312) | 40400 | -12 | -1 | -2 | 11.50 (292) |
| 2.56 (65) | 40400 | -12 | -1 | -2 | 1.77 (45) | 12.79 (325) | 40400 | -12 | -1 | -2 | 12.01 (305) |
| 2.95 (75) | 40400 | -12 | -1 | -2 | 2.17 (55) | 13.27 (337) | 40400 | -12 | -1 | -2 | 12.48 (317) |
| 3.43 (87) | 40400 | -12 | -1 | -2 | 2.64 (67) | 13.78 (350) | 40400 | -12 | -1 | -2 | 12.99 (330) |
| 3.94 (100) | 40400 | -12 | -1 | -2 | 3.15 (80) | 14.25 (362) | 40400 | -12 | -1 | -2 | 13.39 (342) |
| 4.41 (112) | 40400 | -12 | -1 | -2 | 3.62 (92) | 14.76 (375) | 40400 | -12 | -1 | -2 | 13.98 (355) |
| 4.92 (125) | 40400 | -12 | -1 | -2 | 4.17 (105) | 15.24 (387) | 40400 | -12 | -1 | -2 | 14.45 (367) |
| 5.39 (137) | 40400 | -12 | -1 | -2 | 4.61 (117) | 15.75 (400) | 40400 | -12 | -1 | -2 | 14.96 (380) |
| 5.91 (150) | 40400 | -12 | -1 | -2 | 5.12 (130) | 16.22 (412) | 40400 | -12 | -1 | -2 | 15.43 (392) |
| 6.38 (162) | 40400 | -12 | -1 | -2 | 5.59 (142) | 16.73 (425) | 40400 | -12 | -1 | -2 | 15.94 (405) |
| 6.89 (175) | 40400 | -12 | -1 | -2 | 6.10 (155) | 17.20 (437) | 40400 | -12 | -1 | -2 | 16.42 (417) |
| 7.36 (187) | 40400 | -12 | -1 | -2 | 6.57 (167) | 17.72 (450) | 40400 | -12 | -1 | -2 | 16.93 (430) |
| 7.87 (200) | 40400 | -12 | -1 | -2 | 7.09 (180) | 18.19 (462) | 40400 | -12 | -1 | -2 | 17.40 (442) |
| 8.35 (212) | 40400 | -12 | -1 | -2 | 7.56 (192) | 18.70 (475) | 40400 | -12 | -1 | -2 | 17.91 (455) |
| 8.86 (225) | 40400 | -12 | -1 | -2 | 8.07 (205) | 19.17 (487) | 40400 | -12 | -1 | -2 | 18.39 (467) |
| 9.33 (237) | 40400 | -12 | -1 | -2 | 8.54 (217) | 19.69 (500) | 40400 | -12 | -1 | -2 | 18.90 (480) |
| 9.84 (250) | 40400 | -12 | -1 | -2 | 9.06 (230) | 20.16 (512) | 40400 | -12 | -1 | -2 | 19.37 (492) |
| 10.31 (262) | 40400 | -12 | -1 | -2 | 9.53 (242) | 20.67 (525) | 40400 | -12 | -1 | -2 | 19.88 (505) |
| 10.83 (275) | 40400 | -12 | -1 | -2 | 10.04 (255) | 21.14 (537) | 40400 | -12 | -1 | -2 | 20.35 (517) |
| 11.30 (287) | 40400 | -12 | -1 | -2 | 10.51 (267) | 21.65 (550) | 40400 | -12 | -1 | -2 | 20.87 (530) |
| 11.81 (300) | 40400 | -12 | -1 | -2 | 11.02 (280) | 23.62 (600) | 40400 | -12 | -1 | -2 | 22.83 (580) |

*Mounting bracket feet must face outward

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

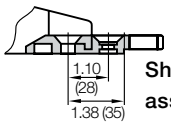
## Chainfix Clip

### Modular snap-on strain relief device

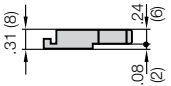
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

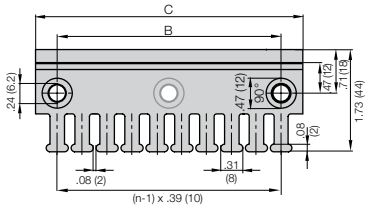



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040/4140/R8840
# Guide Troughs



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
4040-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.50 (89) | * |
| **-06** | 4.23 (104) | **94-50-225** |
| **-07** | 4.49 (114) | **94-50-225** |
| **-08** | 5.04 (128) | **94-50-250** |
| **-10** | 5.47 (139) | **94-50-250** |
| **-11** | 5.98 (152) | **94-50-275** |
| **-12** | 6.46 (164) | **94-50-275** |
| **-13** | 6.97 (177) | **94-50-300** |
| **-15** | 7.44 (189) | **94-50-300** |
| **-16** | 7.95 (202) | **94-50-325** |
| **-17** | 8.42 (214) | **94-50-325** |
| **-18** | 8.94 (227) | **94-50-350** |
| **-20** | 9.41 (239) | **94-50-350** |
| **-21** | 9.92 (252) | **94-50-375** |
| **-22** | 10.39 (264) | **94-50-375** |
| **-23** | 10.91 (277) | **94-50-400** |
| **-25** | 11.38 (289) | **94-50-400** |
| **-26** | 11.89 (302) | **94-50-425** |
| **-27** | 12.36 (314) | **94-50-425** |
| **-28** | 12.87 (327) | **94-50-450** |
| **-30** | 13.35 (339) | **94-50-450** |
| **-31** | 13.86 (352) | **94-50-475** |
| **-32** | 14.33 (364) | **94-50-475** |
| **-33** | 14.84 (377) | **94-50-500** |
| **-35** | 15.31 (389) | **94-50-500** |
| **-36** | 15.82 (402) | **94-50-525** |
| **-37** | 16.30 (414) | **94-50-525** |
| **-38** | 16.81 (427) | **94-50-550** |
| **-40** | 17.28 (439) | **94-50-550** |
| **-41** | 17.79 (452) | **94-50-575** |
| **-42** | 18.27 (464) | **94-50-575** |
| **-43** | 18.78 (477) | **94-50-600** |
| **-45** | 19.25 (489) | **94-50-600** |
| **-46** | 19.76 (502) | **94-50-625** |
| **-47** | 20.24 (514) | **94-50-625** |
| **-48** | 20.75 (527) | **94-50-650** |
| **-50** | 21.22 (539) | **94-50-650** |
| **-51** | 21.73 (552) | **94-50-675** |
| **-52** | 22.20 (564) | **94-50-675** |
| **-53** | 22.72 (577) | **94-50-700** |
| **-55** | 23.19 (589) | **94-50-700** |
| **-60** | 25.28 (639) | **94-50-750** |

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

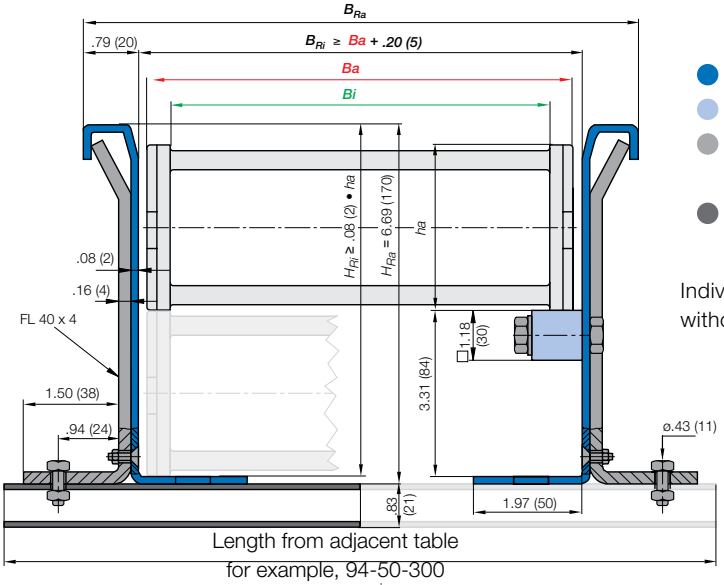
**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**
= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

**For further technical information on guide troughs**
**➤ Chapter 9**

The maintenance-free Series 4040 protects the igus® Chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approx. 65.6 ft. (20 m) in vertical direction above and underwater

## RoI instead of gliding: RoI E-Chain®

Special solution for long travels. 75% less drive power (gliding application) with igus® RoI E-Chain®.
Series 4040R - Order example 4040R-30-250-0
**Further information: Call igus® at 800-521-2747**

# E-Chain System® E4/4
# Series 5050/5150/R9850

For new applications use Series E4-80

3.15” 3.15”

## Price Index

Series 5050

Series 5150

Series R9850

## Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If subject to high torsional forces
- For side-mounted applications involving long unsupported lengths
- If subject to very dirty or dusty environments

- If a simpler low-cost solution is required
  ➤ **Series 15050/R19850**
- When very long travels or high additional loads are involved
  ➤ **Series 5050HD/R9850HD**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Hinged, snap-open, removable lids along outer radius of E-Tube
4. Lateral glide surfaces for side-mounted operation
5. Strain relief elements can be integrated with the mounting bracket
6. Wide, rounded plastic crossbars - cable friendly
7. High torsional rigidity
8. Closed and open styles can be combined
9. High side-mount stability due to undercut
10. Numerous interior separation possibilities
11. E-Chain® also available with reverse bending radii

RoI E-Chain® Series 5050R/9850R available upon request

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

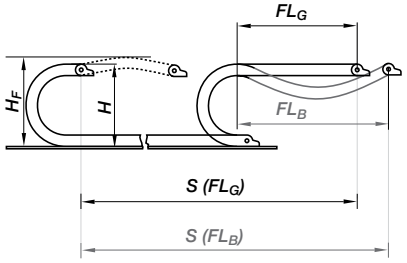
| | |
|---|---|
| 16.4 ft (5 m) **5050-30-300-0** | **E-Chain®** |
| With 2 separators **511** assembled every 2nd link | **Interior Separation** |
| 1 Set **505000-30-12P** | **Mounting Bracket** |

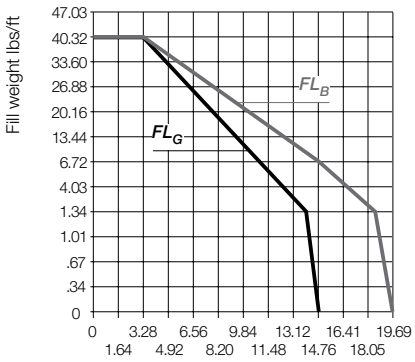
# E-Chain System® E4/4
# Series 5050/5150/R9850
# Installation Dimensions

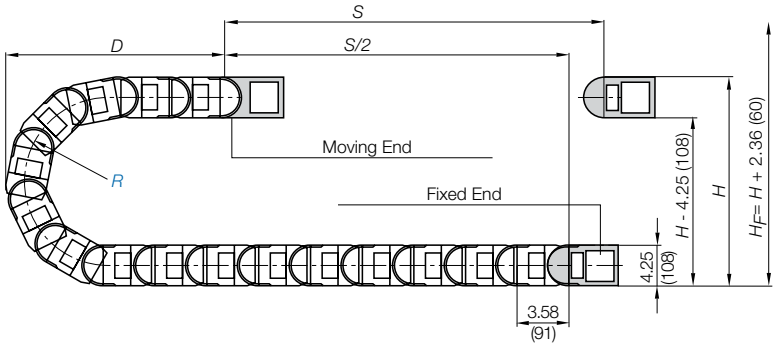
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $_{S}/_{2} + K$

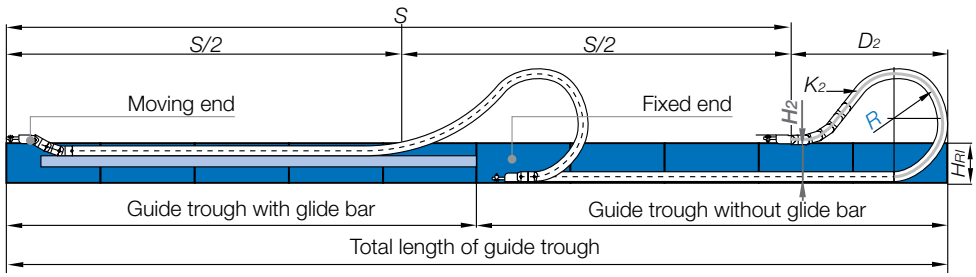
The required clearance height: ***HF = H + 2.36 in. (60 mm)*** (with 2.02 lbs/ft (3 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 25.59 (650) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_{-0}^{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 47.56 (1208) | 51.50 (1308) | 55.43 (1408) | 82.99 (2108) |
| D | 11.61 (295) | 13.58 (345) | 15.55 (395) | 17.52 (445) | 19.49 (495) | 21.46 (545) | 25.39 (645) | 27.36 (695) | 29.33 (745) | 31.30 (795) | 45.08 (1145) |
| K | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) | 75.20 (1910) | 81.50 (2070) | 87.60 (2225) | 128.15 (3255) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,312 ft. (400m)**

**For center mount applications:**
**Chain length: =** $_{S}/_{2} + K_2$




| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 25.59 (650) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | - | - |
| $D_{2\ +25}$ | 21.65 (550) | 31.50 (800) | 37.40 (950) | 47.24 (1200) | 61.02 (1550) | 66.93 (1700) | 85.63 (2175) | 92.72 (2355) | 101.57 (2580) | - | - |
| $K_2$ | 35.83 (910) | 50.16 (1274) | 64.49 (1638) | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 136.14 (3458) | 143.31 (3640) | 175.55 (4459) | - | - |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

### Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

### Technical Data

Details of material properties
**➤ Chapter 1**

5050
5150
R9850

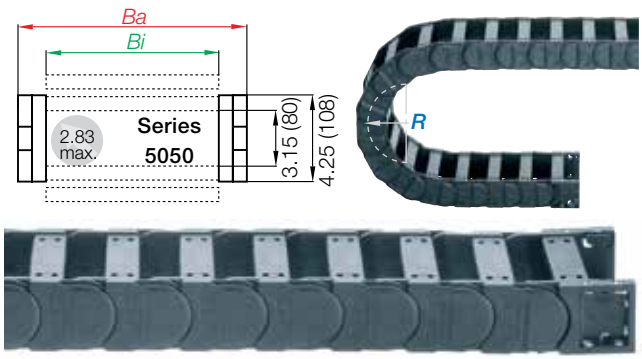
3.15"

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050/5150/R9850

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 5050 - E-Chain® with crossbars every link

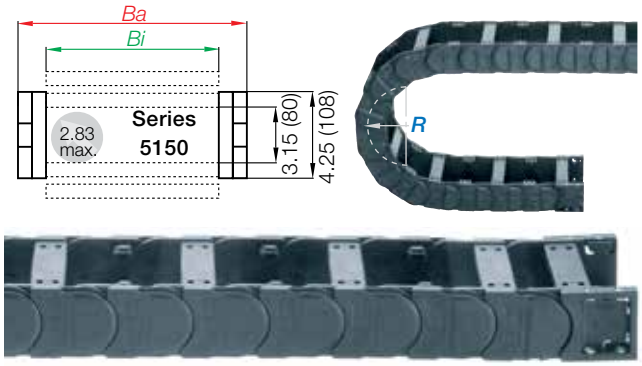



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 5050- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series 5150 - E-Chain® with crossbars every other link

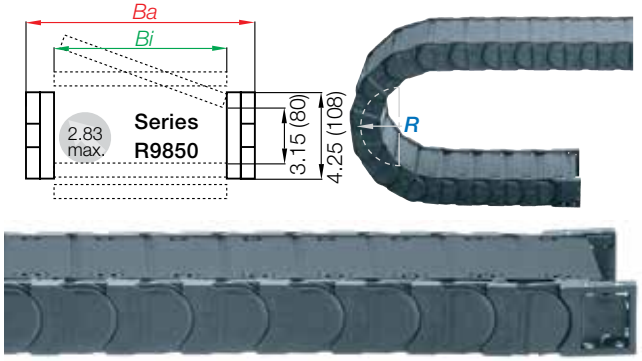



- Crossbars every other link - Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 5150- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series R9850 - fully enclosed E-Tube

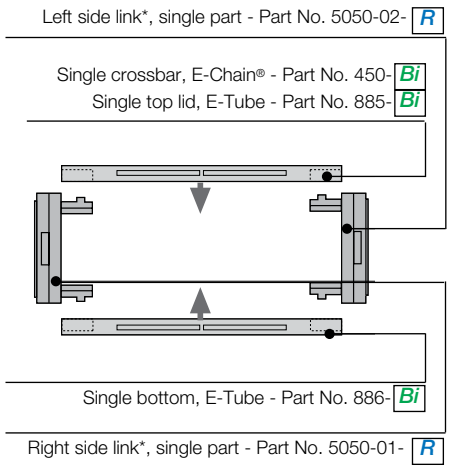


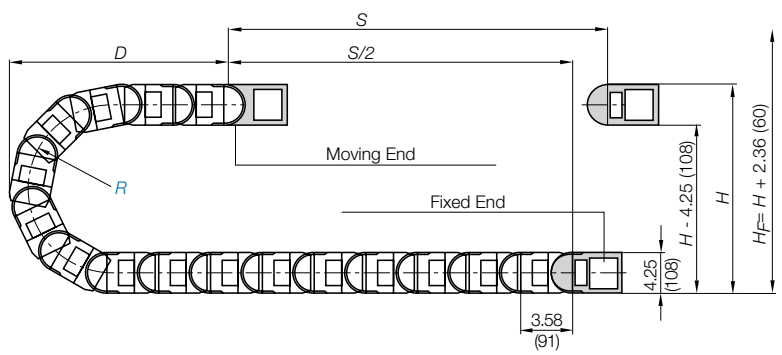

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 9850- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## E-Chain® as separate parts, links and side plates




*View from the moving end of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 5050/5150/R9850

Supplement part number with required radius. Example: 5050-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)



| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 5050 lbs/ft (kg/m) | 5150 lbs/ft (kg/m) | R9850 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|
| 5050-05- | 5150-05- | | -0 | 1.97 (50) | 3.94 (100) | ≈ 3.78 (5.63) | ≈ 3.78 (5.62) | – |
| 5050-06- | 5150-06- | | -0 | 2.56 (65) | 4.53 (115) | ≈ 3.83 (5.70) | ≈ 3.82 (5.68) | – |
| 5050-07- | 5150-07- | 9850-07- | -0* | 2.95 (75) | 4.92 (125) | ≈ 3.89 (5.79) | ≈ 3.83 (5.70) | ≈ 4.19 (6.24) |
| 5050-08- | 5150-08- | | -0 | 3.43 (87) | 5.39 (137) | ≈ 3.96 (5.89) | ≈ 3.87 (5.76) | – |
| 5050-10- | 5150-10- | 9850-10- | -0 | 3.94 (100) | 5.91 (150) | ≈ 4.00 (5.96) | ≈3.89 (5.79) | ≈ 4.38 (6.52) |
| 5050-11- | 5150-11 | - | -0 | 4.41 (112) | 6.42 (163) | ≈ 4.09 (6.09) | ≈3.93 (5.85) | – |
| 5050-12- | 5150-12- | 9850-12- | -0 | 4.92 (125) | 6.89 (175) | ≈ 4.14 (6.16) | ≈3.96 (5.89) | ≈ 4.63 (6.89) |
| 5050-13- | 5150-13- | | -0 | 5.39 (137) | 7.40 (188) | ≈ 4.23 (6.29) | ≈4.00 (5.95) | – |
| 5050-15- | 5150-15- | 9850-15- | -0 | 5.91 (150) | 7.87 (200) | ≈ 4.27 (6.36) | ≈4.02 (5.98) | ≈ 4.92 (7.32) |
| 5050-16- | 5150-16- | | -0 | 6.38 (162) | 8.39 (213) | ≈ 4.35 (6.47) | ≈4.06 (6.04) | – |
| 5050-17- | 5150-17- | 9850-17 | -0 | 6.89 (175) | 8.86 (225) | ≈ 4.42 (6.58) | ≈4.09 (6.09) | ≈ 5.09 (7.58) |
| 5050-18- | 5150-18- | | -0 | 7.36 (187) | 9.37 (238) | ≈ 4.50 (6.69) | ≈4.13 (6.15) | – |
| 5050-20- | 5150-20- | 9850-20- | -0 | 7.87 (200) | 9.84 (250) | ≈ 4.51 (6.71) | ≈4.14 (6.16) | ≈ 5.30 (7.89) |
| 5050-21- | 5150-21- | | -0 | 8.35 (212) | 10.35 (263) | ≈ 4.58 (6.82) | ≈4.18 (6.22) | – |
| 5050-22- | 5150-22- | | -0 | 8.86 (225) | 10.83 (275) | ≈ 4.63 (6.89) | ≈4.20 (6.25) | – |
| 5050-23- | 5150-23- | | -0 | 9.33 (237) | 11.34 (288) | ≈ 4.72 (7.02) | ≈4.24 (6.31) | – |
| 5050-25- | 5150-25- | 9850-25- | -0 | 9.84 (250) | 11.81 (300) | ≈ 4.78 (7.11) | ≈4.27 (6.36) | ≈ 5.79 (8.61) |
| 5050-26- | 5150-26- | | -0 | 10.31 (262) | 12.32 (313) | ≈ 4.83 (7.19) | ≈4.30 (6.40) | – |
| 5050-27- | 5150-27- | 9850-27 | -0 | 10.83 (275) | 12.80 (325) | ≈ 4.91 (7.30) | ≈4.34 (6.46) | ≈ 5.93 (8.82) |
| 5050-28- | 5150-28- | | -0 | 11.30 (287) | 13.31 (338) | ≈ 4.93 (7.33) | ≈4.35 (6.47) | – |
| 5050-30- | 5150-30- | 9850-30- | -0 | 11.81 (300) | 13.78 (350) | ≈ 5.07 (7.55) | ≈4.42 (6.58) | ≈ 6.23 (9.27) |
| 5050-31- | 5150-31- | | -0 | 12.28 (312) | 14.29 (363) | ≈ 5.09 (7.58) | ≈4.43 (6.60) | – |
| 5050-32- | 5150-32- | | -0 | 12.79 (325) | 14.76 (375) | ≈ 5.13 (7.63) | ≈4.45 (6.62) | – |
| 5050-33- | 5150-33- | | -0 | 13.27 (337) | 15.28 (388) | ≈ 5.25 (7.81) | ≈4.51 (6.71) | – |
| 5050-35- | 5150-35- | 9850-35- | -0 | 13.78 (350) | 15.75 (400) | ≈ 5.35 (7.96) | ≈4.56 (6.79) | ≈ 6.73 (10.02) |
| 5050-36- | 5150-36- | | -0 | 14.25 (362) | 16.26 (413) | ≈ 5.36 (7.97) | ≈4.57 (6.80) | – |
| 5050-37- | 5150-37- | | -0 | 14.76 (375) | 16.73 (425) | ≈ 5.37 (7.99) | ≈4.57 (6.80) | – |
| 5050-38- | 5150-38- | | -0 | 15.24 (387) | 17.24 (438) | ≈ 5.42 (8.07) | ≈4.60 (6.84) | – |
| 5050-40- | 5150-40- | 9850-40- | -0 | 15.75 (400) | 17.72 (450) | ≈ 5.56 (8.27) | ≈4.66 (6.94) | ≈ 7.38 (10.98) |
| 5050-41- | 5150-41- | | -0 | 16.22 (412) | 18.23 (463) | ≈ 5.66 (8.43) | ≈4.72 (7.02) | – |
| 5050-42- | 5150-42- | | -0 | 16.73 (425) | 18.70 (475) | ≈ 5.77 (8.58) | ≈4.77 (7.10) | – |
| 5050-43- | 5150-43- | | -0 | 17.20 (437) | 19.21 (488) | ≈ 5.81 (8.65) | ≈4.79 (7.13) | – |
| 5050-45- | 5150-45- | | -0 | 17.72 (450) | 19.69 (500) | ≈ 5.85 (8.71) | ≈4.81 (7.16) | – |
| 5050-46- | 5150-46- | 9850-46- | -0 | 18.19 (462) | 20.20 (513) | ≈ 5.87 (8.73) | ≈4.82 (7.17) | ≈ 7.69 (11.44) |
| 5050-47- | 5150-47- | | -0 | 18.70 (475) | 20.67 (525) | ≈ 5.96 (8.87) | ≈4.87 (7.24) | – |
| 5050-48- | 5150-48- | | -0 | 19.17 (487) | 21.99 (538) | ≈ 5.97 (8.88) | ≈4.88 (7.26) | – |
| 5050-50- | 5150-50- | | -0 | 19.69 (500) | 21.65 (550) | ≈ 6.05 (9.00) | ≈4.91 (7.30) | – |
| 5050-51- | 5150-51- | | -0 | 20.16 (512) | 22.16 (563) | ≈ 6.06 (9.02) | ≈4.92 (7.32) | – |
| 5050-52- | 5150-52- | | -0 | 20.67 (525) | 22.64 (575) | ≈ 6.09 (9.06) | ≈4.93 (7.34) | – |
| 5050-53- | 5150-53- | | -0 | 21.14 (537) | 23.15 (588) | ≈ 6.20 (9.22) | ≈4.98 (7.41) | – |
| 5050-55- | 5150-55- | | -0 | 21.65 (550) | 23.62 (600) | ≈ 6.52 (9.70) | ≈5.15 (7.66) | – |
| 5050-60- | 5150-60- | | -0 | 23.62 (600) | 25.59 (650) | ≈ 6.65 (9.90) | ≈5.21 (7.76) | – |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 5050-30-300-0

| | 150 | 200 | 250 | 300 | 350 | 400 | 500 | 550 | 600 | 650 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) | 21.65 (550) | 23.62 (600) | 25.59 (650) | 39.37 (1000) |
| $H^{0}_{+25}$ | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) | 47.56 (1208) | 51.50 (1308) | 55.43 (1408) | 82.99 (2108) |
| D | 11.61 (295) | 13.58 (345) | 15.55 (395) | 17.52 (445) | 19.49 (495) | 21.46 (545) | 25.39 (645) | 27.36 (695) | 29.33 (745) | 31.30 (795) | 45.08 (1145) |
| K | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) | 75.20 (1910) | 81.50 (2070) | 87.60 (2225) | 128.15 (3255) |

** This radius is not available for the R9850 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.259. For large diameter hoses see page 6.259

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Interior Separation

igus® E-Chain System®

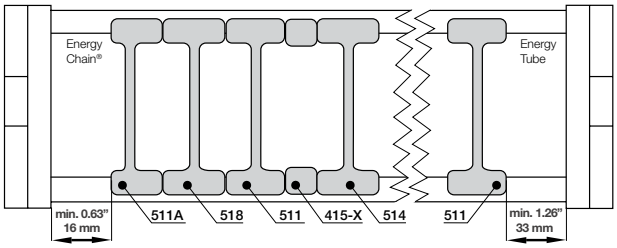
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

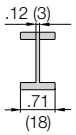
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



**STANDARD Vertical separator 501**

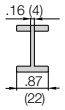



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Locking separator 504**

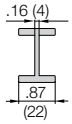



**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

**Locking separator 508**

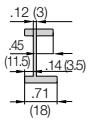



**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

**Asymmetric separator 501A**




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A for E-Chains®**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 405-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

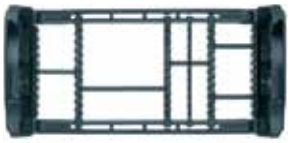
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

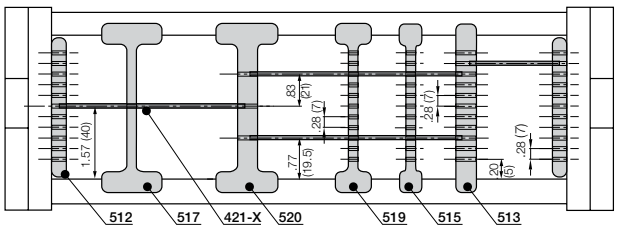
# E-Chain System® E4/4
# Series 5050/5150/R9850
# Interior Separation



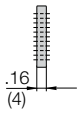
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.

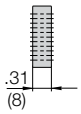



**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 502** |
| Assembled | **Part No. 512** |

**Side plate 502**

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

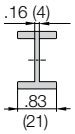



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

**Vertical separator 503**

- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

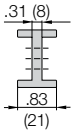



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

**Locking vertical separator 507**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.

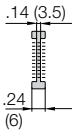



**Locking vertical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

**Locking vertical separator 510**

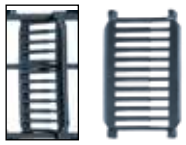
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



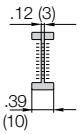

**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

**Closed slotted separator 505**



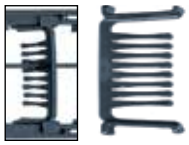
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

**Open slotted separator 509**

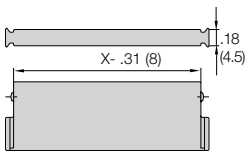


**Shelves 420-XX**

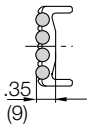
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Special Accessories

Part number example for E-Chain®

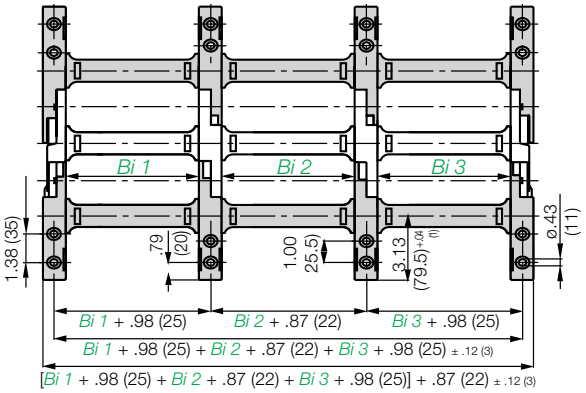
**5050-10/20/10-[200]-0**

**5050-*Bi1*/*Bi2*/*Bi3*-[*R*]-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

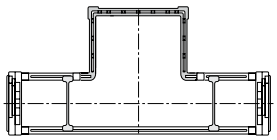
- For applications in which particularly high fill weights necessitate extremely wide E-Chains® (up to 118" (3000 mm)
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



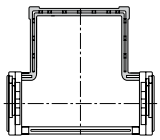
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

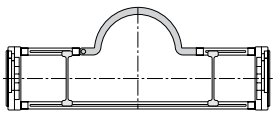
- Intended for cables and hoses with a maximum outer diameter of 10.63 in. (270 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



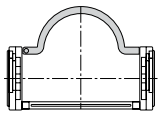
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

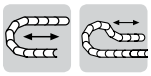
| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | By request | Round | No | Yes |
| **450-17-RD115** | By request | Round | Yes | No |
| **450-25-D150** | By request | Square | Yes | No |
| **450-30-D200** | By request | Square | Yes | No |
| **450-35-D250** | By request | Square | Yes | No |
| **450-40-D300** | By request | Square | Yes | No |
| **450-20-HD150** | By request | Square | No | Yes |
| **450-25-HD200** | By request | Square | No | Yes |
| **450-30-HD250** | By request | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

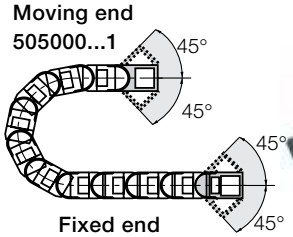
# E-Chain System® E4/4
# Series 5050/5150/R9850
# Mounting Brackets - KMA

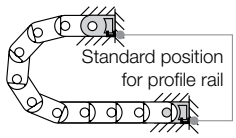


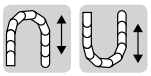
**Standard**

## Option 1: KMA pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

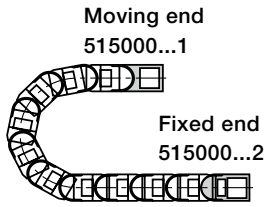


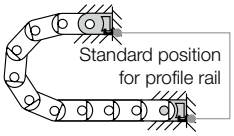


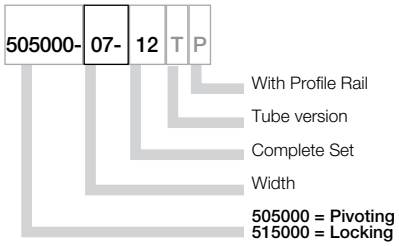
## Option 2: KMA locking

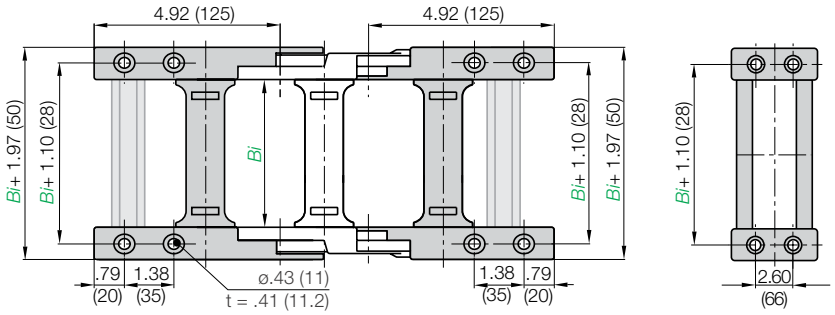
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels






**Part Number Structure**




**Full set, for both ends:**

505000- 05- 12 Full set, **each part with pin/bore**

**Single-part order:**

505000- 05- 1 Mounting bracket **with bore**

505000- 05- 2 Mounting bracket **with pin**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 515000**

**Part No. Full Set** (pivoting)
Series 5050 or 5150:
505000-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 5050 or 5150
505000-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R9850
505000-Width-12T

**Part No. Full Set** (pivoting)
with Profile Rail
Tube Series R9850
505000-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05 | 505000 | 515000 | -05-12 | | P | 1.97 (50) |
| -06 | 505000 | 515000 | -06-12 | | P | 2.56 (65) |
| -07 | 505000 | 515000 | -07-12 | T | P | 2.95 (75) |
| -08 | 505000 | 515000 | -08-12 | | | 3.43 (87) |
| -10 | 505000 | 515000 | -10-12 | T | P | 3.94 (100) |
| -11 | 505000 | 515000 | -11-12 | | P | 4.41 (112) |
| -12 | 505000 | 515000 | -12-12 | T | P | 4.92 (125) |
| -13 | 505000 | 515000 | -13-12 | | P | 5.39 (137) |
| -15 | 505000 | 515000 | -15-12 | T | P | 5.91 (150) |
| -16 | 505000 | 515000 | -16-12 | | P | 6.38 (162) |
| -17 | 505000 | 515000 | -17-12 | | P | 6.89 (175) |
| -18 | 505000 | 515000 | -18-12 | | P | 7.36 (187) |
| -20 | 505000 | 515000 | -20-12 | T | P | 7.87 (200) |
| -21 | 505000 | 515000 | -21-12 | | P | 8.35 (212) |
| -22 | 505000 | 515000 | -22-12 | | P | 8.86 (225) |
| -23 | 505000 | 515000 | -23-12 | | P | 9.33 (237) |
| -25 | 505000 | 515000 | -25-12 | T | P | 9.84 (250) |
| -26 | 505000 | 515000 | -26-12 | | P | 10.31 (262) |
| -27 | 505000 | 515000 | -27-12 | | P | 10.83 (275) |
| -28 | 505000 | 515000 | -28-12 | | P | 11.30 (287) |
| -30 | 505000 | 515000 | -30-12 | T | P | 11.81 (300) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -31 | 505000 | 515000 | -31-12 | | P | 12.28 (312) |
| -32 | 505000 | 515000 | -32-12 | | P | 12.79 (325) |
| -33 | 505000 | 515000 | -33-12 | | P | 13.27 (337) |
| -35 | 505000 | 515000 | -35-12 | T | P | 13.78 (350) |
| -36 | 505000 | 515000 | -36-12 | | P | 14.25 (362) |
| -37 | 505000 | 515000 | -37-12 | | P | 14.76 (375) |
| -38 | 505000 | 515000 | -38-12 | | P | 15.24 (387) |
| -40 | 505000 | 515000 | -40-12 | T | P | 15.75 (400) |
| -41 | 505000 | 515000 | -41-12 | | P | 16.22 (412) |
| -42 | 505000 | 515000 | -42-12 | | P | 16.73 (425) |
| -43 | 505000 | 515000 | -43-12 | | P | 17.20 (437) |
| -45 | 505000 | 515000 | -45-12 | | P | 17.72 (450) |
| -46 | 505000 | 515000 | -46-12 | T | P | 18.19 (462) |
| -47 | 505000 | 515000 | -47-12 | | P | 18.70 (475) |
| -48 | 505000 | 515000 | -48-12 | | P | 19.17 (487) |
| -50 | 505000 | 515000 | -50-12 | | P | 19.69 (500) |
| -51 | 505000 | 515000 | -51-12 | | P | 20.16 (512) |
| -52 | 505000 | 515000 | -52-12 | | P | 20.67 (525) |
| -53 | 505000 | 515000 | -53-12 | | P | 21.14 (537) |
| -55 | 505000 | 515000 | -55-12 | | P | 21.65 (550) |
| -60 | 505000 | 515000 | -60-12 | | P | 23.62 (600) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Mounting Brackets - Steel

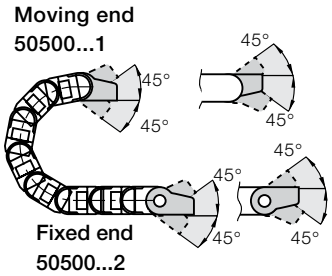


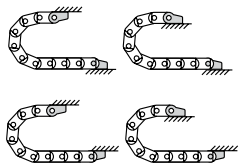
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



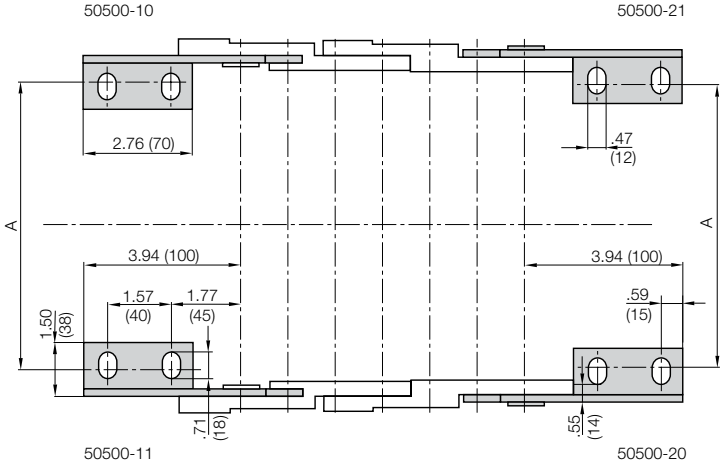


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 5050, 5150 or R9850:
**50500-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 5050, 5150 or R9850:
**50500-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 5050, 5150 or R9850:
**50500-2**



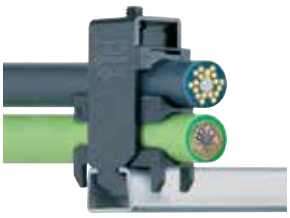

## Bracket mounting dimensions

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) | Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50) | 50500 | -12 | -1 | -2 | 1.18 (30) | 12.28 (312) | 50500 | -12 | -1 | -2 | 11.50 (292) |
| 2.56 (65) | 50500 | -12 | -1 | -2 | 1.77 (45) | 12.79 (325) | 50500 | -12 | -1 | -2 | 12.01 (305) |
| 2.95 (75) | 50500 | -12 | -1 | -2 | 2.17 (55) | 13.27 (337) | 50500 | -12 | -1 | -2 | 12.48 (317) |
| 3.43 (87) | 50500 | -12 | -1 | -2 | 2.64 (67) | 13.78 (350) | 50500 | -12 | -1 | -2 | 12.99 (330) |
| 3.94 (100) | 50500 | -12 | -1 | -2 | 3.15 (80) | 14.25 (362) | 50500 | -12 | -1 | -2 | 13.39 (342) |
| 4.41 (112) | 50500 | -12 | -1 | -2 | 3.62 (92) | 14.76 (375) | 50500 | -12 | -1 | -2 | 13.98 (355) |
| 4.92 (125) | 50500 | -12 | -1 | -2 | 4.17 (105) | 15.24 (387) | 50500 | -12 | -1 | -2 | 14.45 (367) |
| 5.39 (137) | 50500 | -12 | -1 | -2 | 4.61 (117) | 15.75 (400) | 50500 | -12 | -1 | -2 | 14.96 (380) |
| 5.91 (150) | 50500 | -12 | -1 | -2 | 5.12 (130) | 16.22 (412) | 50500 | -12 | -1 | -2 | 15.43 (392) |
| 6.38 (162) | 50500 | -12 | -1 | -2 | 5.59 (142) | 16.73 (425) | 50500 | -12 | -1 | -2 | 15.94 (405) |
| 6.89 (175) | 50500 | -12 | -1 | -2 | 6.10 (155) | 17.20 (437) | 50500 | -12 | -1 | -2 | 16.42 (417) |
| 7.36 (187) | 50500 | -12 | -1 | -2 | 6.57 (167) | 17.72 (450) | 50500 | -12 | -1 | -2 | 16.93 (430) |
| 7.87 (200) | 50500 | -12 | -1 | -2 | 7.09 (180) | 18.19 (462) | 50500 | -12 | -1 | -2 | 17.40 (442) |
| 8.35 (212) | 50500 | -12 | -1 | -2 | 7.56 (192) | 18.70 (475) | 50500 | -12 | -1 | -2 | 17.91 (455) |
| 8.86 (225) | 50500 | -12 | -1 | -2 | 8.07 (205) | 19.17 (487) | 50500 | -12 | -1 | -2 | 18.39 (467) |
| 9.33 (237) | 50500 | -12 | -1 | -2 | 8.54 (217) | 19.69 (500) | 50500 | -12 | -1 | -2 | 18.90 (480) |
| 9.84 (250) | 50500 | -12 | -1 | -2 | 9.06 (230) | 20.16 (512) | 50500 | -12 | -1 | -2 | 19.37 (492) |
| 10.31 (262) | 50500 | -12 | -1 | -2 | 9.53 (242) | 20.67 (525) | 50500 | -12 | -1 | -2 | 19.88 (505) |
| 10.83 (275) | 50500 | -12 | -1 | -2 | 10.04 (255) | 21.14 (537) | 50500 | -12 | -1 | -2 | 20.35 (517) |
| 11.30 (287) | 50500 | -12 | -1 | -2 | 10.51 (267) | 21.65 (550) | 50500 | -12 | -1 | -2 | 20.87 (530) |
| 11.81 (300) | 50500 | -12 | -1 | -2 | 11.02 (280) | 23.62 (600) | 50500 | -12 | -1 | -2 | 22.83 (580) |

*Mounting bracket feet must face outward

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Strain Relief

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

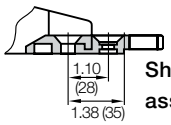
## Chainfix Clip

### Modular snap-on strain relief device

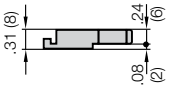
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

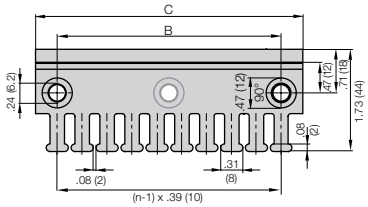



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Guide Troughs



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
5050-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 4.13 (105) | **96-50-225** |
| **-06** | 4.72 (120) | **96-50-250** |
| **-07** | 5.12 (130) | **96-50-250** |
| **-08** | 5.59 (142) | **96-50-275** |
| **-10** | 6.10 (155) | **96-50-275** |
| **-11** | 6.61 (168) | **96-50-300** |
| **-12** | 7.09 (180) | **96-50-300** |
| **-13** | 7.60 (193) | **96-50-325** |
| **-15** | 8.07 (205) | **96-50-325** |
| **-16** | 8.58 (218) | **96-50-350** |
| **-17** | 9.06 (230) | **96-50-350** |
| **-18** | 9.57 (243) | **96-50-375** |
| **-20** | 10.04 (255) | **96-50-375** |
| **-21** | 10.55 (268) | **96-50-400** |
| **-22** | 11.02 (280) | **96-50-400** |
| **-23** | 11.54 (293) | **96-50-425** |
| **-25** | 12.01 (305) | **96-50-425** |
| **-26** | 12.52 (318) | **96-50-450** |
| **-27** | 12.99 (330) | **96-50-450** |
| **-28** | 13.50 (343) | **96-50-475** |
| **-30** | 13.98 (355) | **96-50-475** |
| **-31** | 14.49 (368) | **96-50-500** |
| **-32** | 14.96 (380) | **96-50-500** |
| **-33** | 15.47 (393) | **96-50-525** |
| **-35** | 15.94 (405) | **96-50-525** |
| **-36** | 16.46 (418) | **96-50-550** |
| **-37** | 16.93 (430) | **96-50-550** |
| **-38** | 17.44 (443) | **96-50-575** |
| **-40** | 17.91 (455) | **96-50-575** |
| **-41** | 18.43 (468) | **96-50-600** |
| **-42** | 18.90 (480) | **96-50-600** |
| **-43** | 19.41 (493) | **96-50-625** |
| **-45** | 19.88 (505) | **96-50-625** |
| **-46** | 20.39 (518) | **96-50-650** |
| **-47** | 20.87 (530) | **96-50-650** |
| **-48** | 21.38 (543) | **96-50-675** |
| **-50** | 21.85 (555) | **96-50-675** |
| **-51** | 22.36 (568) | **96-50-700** |
| **-52** | 22.83 (580) | **96-50-700** |
| **-53** | 23.35 (593) | **96-50-725** |
| **-55** | 23.82 (605) | **96-50-725** |
| **-60** | 25.79 (655) | **96-50-775** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 99-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 96-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

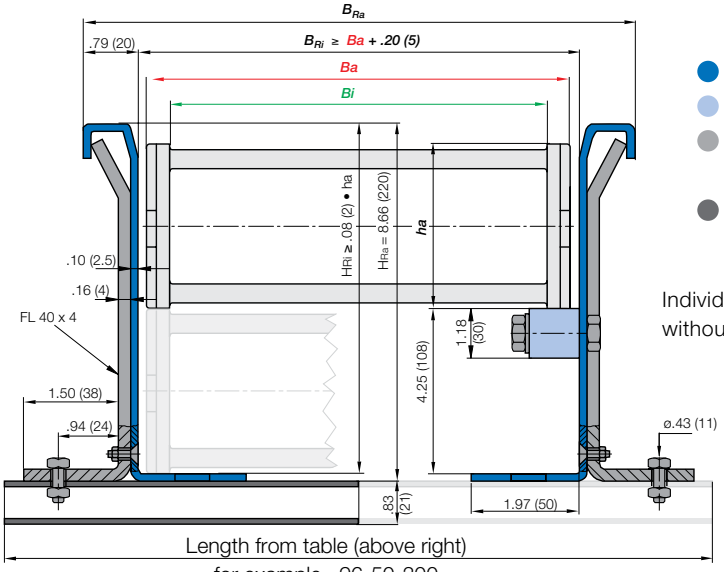
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 99-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

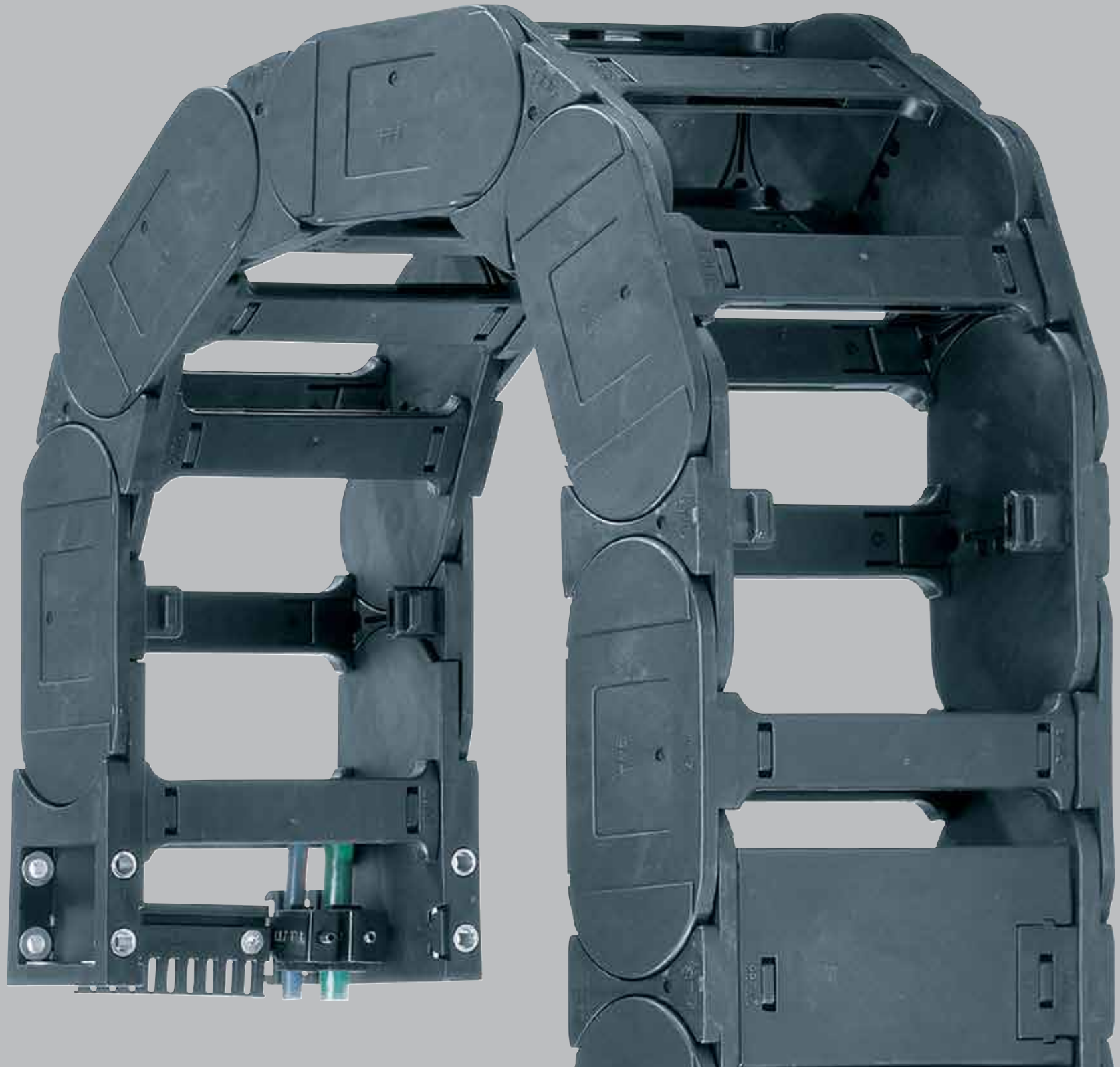
* Specialized guide trough available upon request

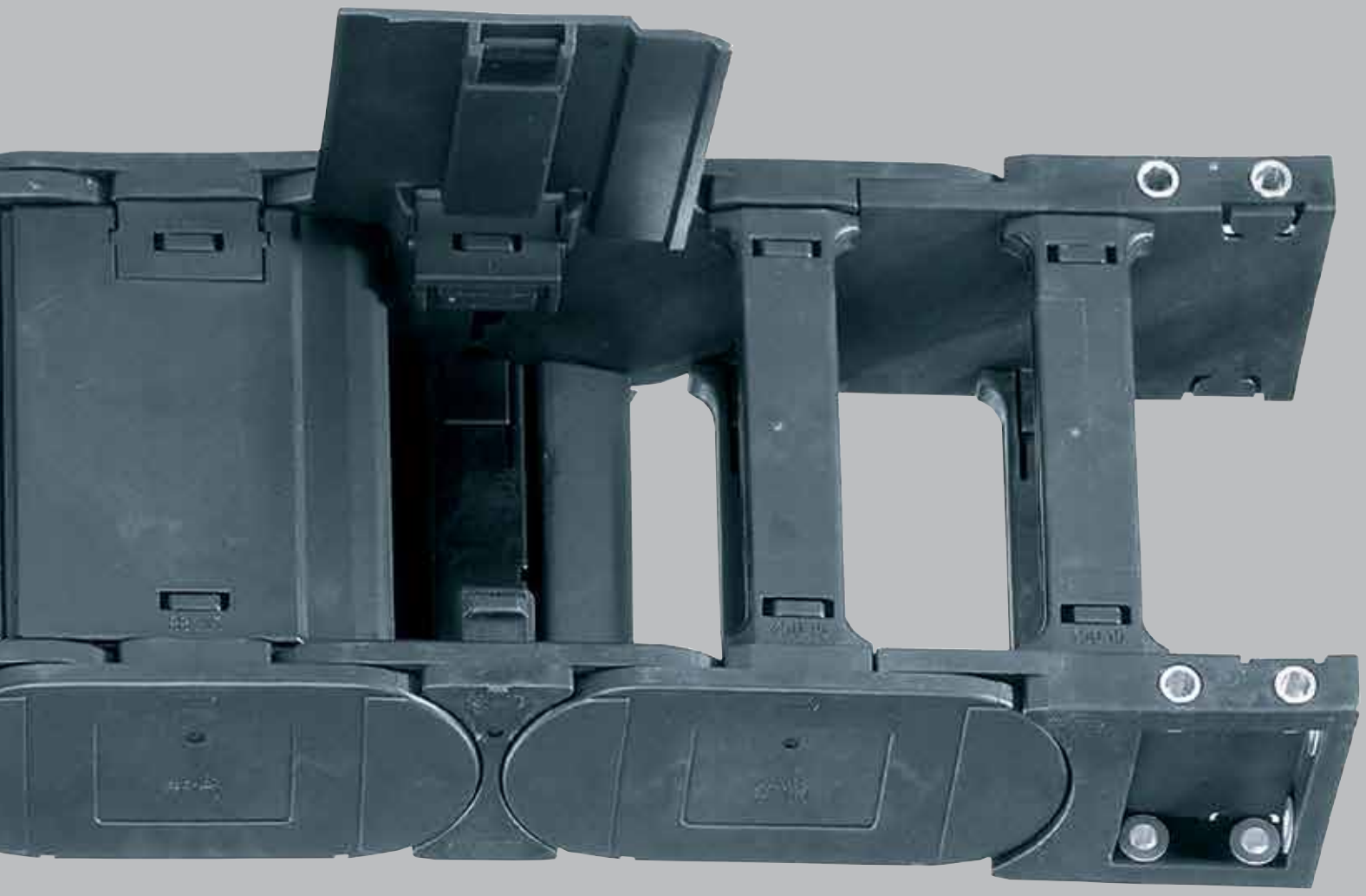
**For further technical information on guide troughs**
➤ **Chapter 9**

# E-Chain System® E4/4
# Series 5050/5150/R9850
# Application Example

Very robust E4/4 E-Chain® Series 5050 with middle strap in a steel factory. Heat and dust are no problem for the maintenance-free igus® E-Chain® which has been in operation for 3 years.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS





# E4/100

For new applications we recommend using System E4-1 in place of the following series: Series 220, 280, 380 and 400.
Continue to use the Series 600 and 640 until and E4-1 equivalent is available.

For new applications we recommend
System E4-1

# E4/100 - for smooth running and easy assembly

E4/00 has a unique design featuring inner and outer side links, which makes it extremely easy to assemble and disassemble on site. E4/00 can reduce noise by up to 50 percent and can handle high fill weights, high accelerations and high speeds. Available from stock.

### Typical industries and applications

- Robotics and handling
- Material handling
- Freezing environment
- Construction machinery
- Machine tools
- Woodworking machinery
- Machines of all kinds
- Semicon
- Cleanroom
- Welding machines
- General machinery

IPA Certificate, Cleanroom ISO Class 3 (DIN 14644-1) at v = 1 m/s for Series 280-10-100-0 tested with igus® Chainflex® cables

ATEX/ESD: Excellent performance with the special material igumid ESD (upon request) “Rear grip” achieves long-term electrical conductivity

High torsional rigidity

System E4/4 approved with long travels

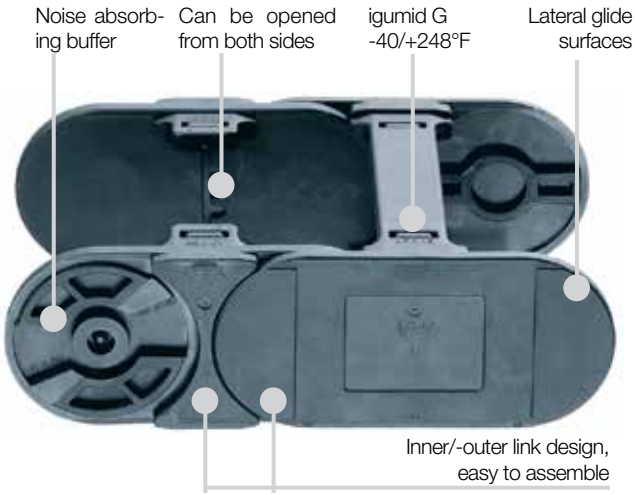
System E4 - 4-piece E-Chain® links

Long unsupported spans, high stability

Quiet and strong - ideal for handling applications

Sturdy design for construction equipment

# E-Chain System® E4/100
# Selection Guide




- Lowest noise in its class
- Further noise reduction with rubber pads (Series E4/101)
- Broad application spectrum
- Numerous interior separation possibilities
- Wide range of modular accessories
- Widths up to 118" (3000 mm) using extension links
- Maximum stability in the igus® range
- Can be opened along both the inner and outer radii
- Maximum travel: 656 - 1,312 ft. (200 - 400 m)
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Crossbars every link
**for particularly demanding applications**

| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **220** | 1.10 | (28) | 1.57-11.81 | (40-300) | 2.36-12.60 | (60-320) | 1.65 | (42) | 2.16-9.84 | (55-250) |
| **280** | 1.26 | (32) | 1.97-15.75 | (50-400) | 2.87-16.65 | (73-423) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **380** | 1.65 | (42) | 1.97-15.75 | (50-400) | 2.99-16.77 | (76-426) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **400** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.31-24.96 | (84-634) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **600** | 4.25 | (108) | 7.87-23.62 | (200-600) | 9.92-25.67 | (252-652) | 5.51 | (140) | 7.87-39.37 | (200-1000) |
| **640** | 4.41 | (112) | 3.43-22.13 | (87-562) | 5.47-24.17 | (139-614) | 5.51 | (140) | 7.87-39.37 | (200-1000) |
| **800** | 7.87 | (200) | 7.87-23.62 | (200-600) | 9.84-25.98 | (250-660) | 9.29 | (236) | 12.80-39.37 | (325-1000) |

## Crossbars every 2nd link
**for almost all applications**

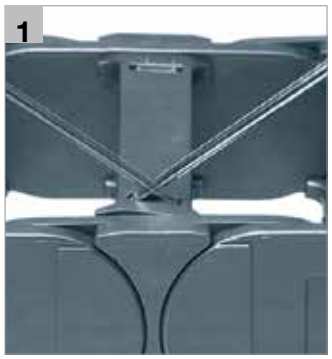
| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **290** | 1.26 | (32) | 1.97-15.75 | (50-400) | 2.87-16.65 | (73-423) | 2.13 | (54) | 2.48-11.81 | (63-300) |
| **390** | 1.65 | (42) | 1.97-15.75 | (50-400) | 2.99-16.77 | (76-426) | 2.52 | (64) | 2.95-13.78 | (75-350) |
| **410** | 2.20 | (56) | 1.97-23.62 | (50-600) | 3.31-24.96 | (84-634) | 3.31 | (84) | 5.31-19.69 | (135-500) |
| **601** | 4.25 | (108) | 7.87-23.62 | (200-600) | 9.92-25.67 | (252-652) | 5.51 | (140) | 7.87-39.37 | (200-1000) |

## E-Tubes
**fully enclosed, excellent cable protection**

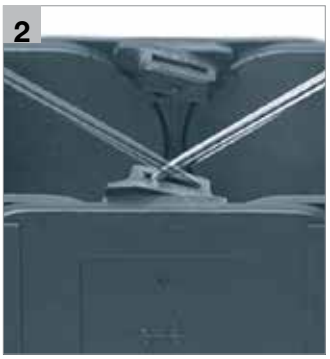
| Series | Inner height *hi* in. | (mm) | Inner width *Bi* in. | (mm) | Outer width *Ba* in. | (mm) | Outer height *ha* in. | (mm) | Bending radius *R* in. | (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| **R760** | 1.10 | (28) | 1.97-11.81 | (50-300) | 2.76-12.60 | (70-320) | 1.65 | (42) | 2.95-9.84 | (75-250) |
| **R770** | 1.26 | (32) | 1.97-11.81 | (50-300) | 2.87-12.72 | (73-323) | 2.13 | (54) | 4.92-11.81 | (125-300) |
| **R780** | 1.65 | (42) | 1.97-11.81 | (50-300) | 2.99-12.83 | (76-326) | 2.52 | (64) | 4.92-13.78 | (125-350) |
| **R880** | 2.20 | (56) | 2.95-18.19 | (75-462) | 4.29-19.57 | (109-497) | 3.31 | (84) | 5.91-19.69 | (150-500) |
| **R608** | 4.25 | (108) | 7.87-15.75 | (200-400) | 9.92-17.80 | (252-452) | 5.51 | (140) | 9.84-39.37 | (250-1000) |

# E-Chain System® E4/100
# Assembly instructions

## E-Chains® - Opening

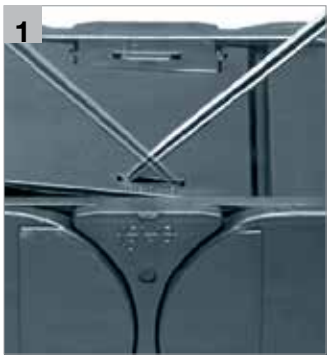



Remove crossbars - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the crossbar.

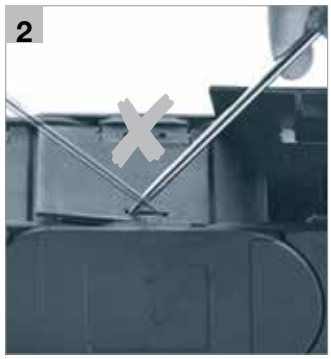



Remove clips - Insert screwdriver into the slot, using a lever action, apply pressure to the screwdriver to remove the clip

## E-Tube - Opening




Remove lids/bottoms - Insert screwdriver into the slot, using a lever action apply pressure to the screwdriver to release




Release only **one side** to open the lid

## E-Chains® and E-Tubes - Assembling

Line up two inner side links side by side. Attach an outer side link between

Assemble crossbars - push down and snap in using a screwdriver

Assemble clips (for E-Chains with crossbars every other link) - push down and snap in using a screwdriver

Assemble E-Tube lids and bottoms - Attach to the connector at an angle and snap in place

## E-Chains® and E-Tubes - Separating

Remove crossbars, clips, lids and bottoms at the outer links

Insert screwdriver into the slot between the side links. Using a lever action, release the side links

Remove the outer links

Separate the E-Chain®

# E-Chain System® E4/100
# Series 220/R760

For new applications use Series E4-28

1.10” 1.10”

## Features & Benefits

1. Locking or pivoting mounting brackets available
2. KMA mounting brackets with attachment points on all sides
3. Optimized glide pads with lateral wear allowance
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Integrated strain relief possible
6. Closed and open styles can be combined
7. Crossbars on E-Chains® are removable along both radii
8. Wide, rounded crossbars
9. Numerous interior separation possibilities
10. Stop dog with “brake” for noise reduction
11. E-Chains® also available with reverse bending radius “RBR”

Also available as
E4/00-NC without camber:
220-NC

### Price Index

Series 220 Series R760

### Special Features / Options

Low noise version E4/101 Series 221 available with special rubber pads

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

### Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

### Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 16.4 ft (5 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

### Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- For zig-zag lift applications
  ➤ **System E4/4**
- For side-mounted applications
  ➤ **System E4/4**
- If an extremely vibration-free E-Chain® is necessary
  ➤ **Series E6-29/R6-29**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 9.84 ft (3 m) **220-300-250-0** | **E-Chain®** |
| With 2 separators **2211** assembled every 2nd link | **Interior Separation** |
| 1 Set **2200-300-12** | **Mounting Bracket** |

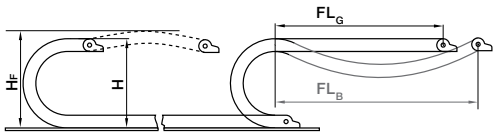
# E-Chain System® E4/100
# Series 220/R760
# Installation Dimensions

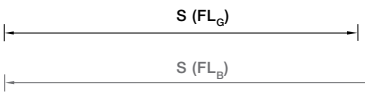


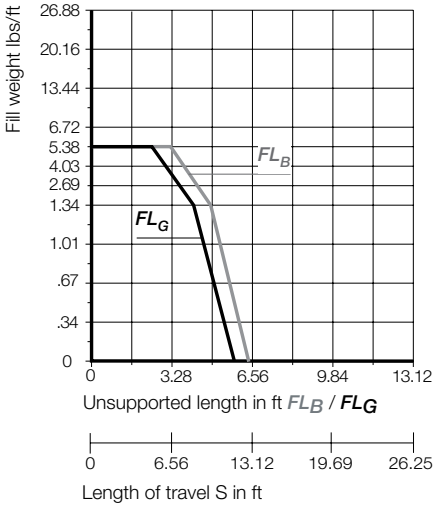
**Short travel, unsupported length**

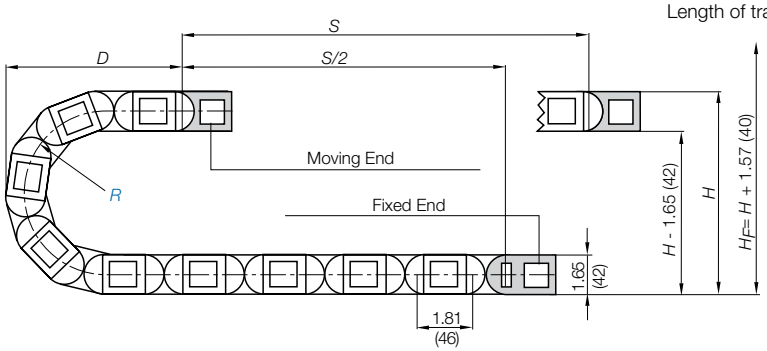
- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.71 (22)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with .67 lbs/ft (1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055**) | 2.48 (063*) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H | 6.06 (154) | 6.69 (170) | 7.64 (194) | 9.61 (244) | 11.57 (294) | 13.54 (344) | 15.51 (394) | 17.48 (444) | 21.42 (544) |
| D | 4.92 (125) | 5.24 (133) | 5.71 (145) | 6.69 (170) | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 12.60 (320) |
| K | 10.43 (265) | 11.42 (290) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

**Short Travels - Unsupported**

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

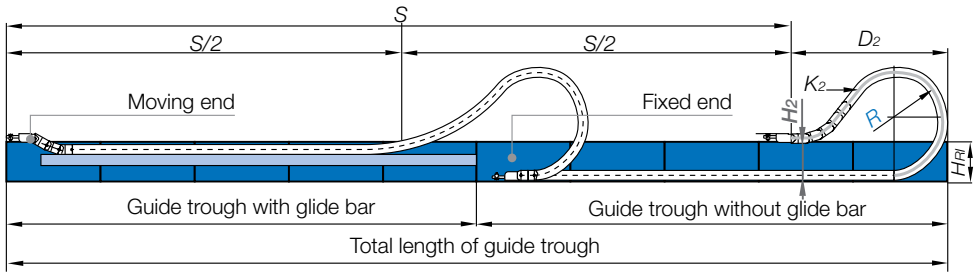
*If the mounting bracket location is set lower

**Not available for R760

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)**

**For center mount applications:**
**Chain length: =** $S/2 + K_2$




| R | 2.17 (055**) | 2.48 (063**) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| H2 | - | - | - | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) | 6.22 (158) |
| D2 | - | - | - | 13.78 (350) | 19.29 (490) | 20.87 (530) | 25.79 (655) | 28.74 (730) | 36.81 (935) |
| K2 | - | - | - | 23.54 (598) | 30.79 (782) | 36.22 (920) | 43.46 (1104) | 48.90 (1242) | 63.39 (1610) |

**Long Travels - Gliding**

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

**Not available for R760

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

**Technical Data**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

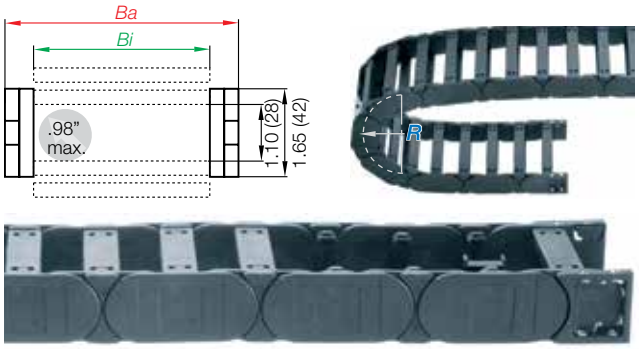
Details of material properties
**➤ Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/E-Chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 220/R760

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 220 - E-Chain® with crossbars every link



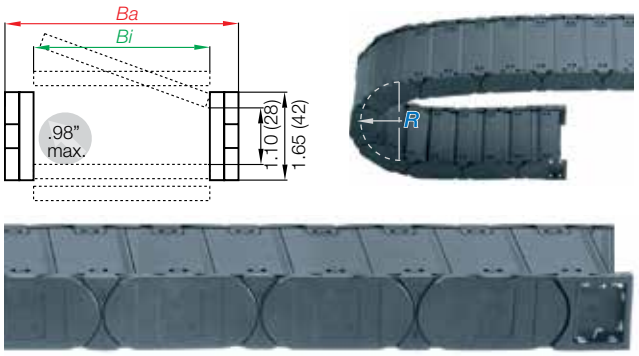

- Robust solution with crossbars every link
- Can be opened from two sides
- Removable crossbars

**Part Number Structure**

220- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

## Series R760 - fully enclosed E-Tube



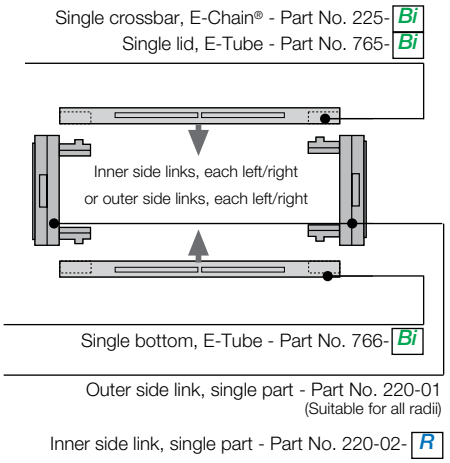

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

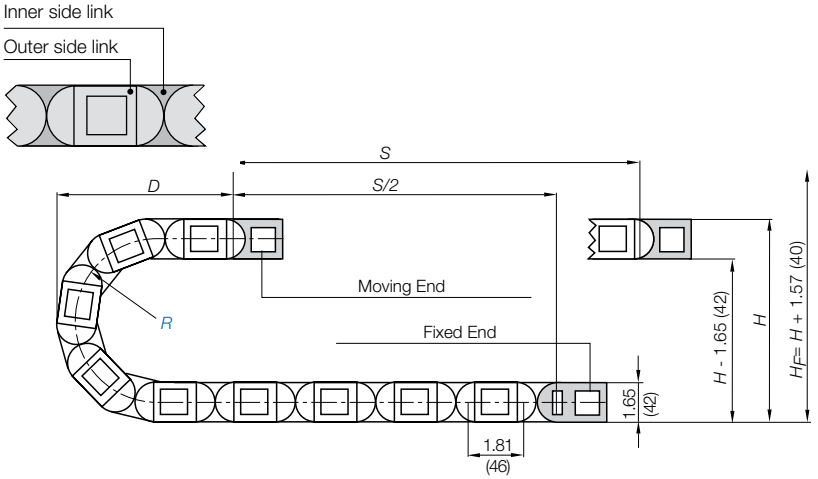
**Part Number Structure**

760- 300- 250- 0

- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4/100
# Series 220/R760

Supplement part number with required radius. Example: 220-300-250-0
Pitch: 1.81 in. (46mm) per link links/ft(m) = 6.71 (22)

| Part Number. Crossbars Every link | Tube Version | | Bi in. (mm) | Ba in. (mm) | 220 lbs/ft (kg/m) | R760 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| 220-040- | | -0 | 1.57 (40) | 2.36 (60) | ≈ 0.71 (1.06) | – |
| 220-050- | 760-050- | -0 | 1.97 (50) | 2.76 (70) | ≈ 0.74 (1.10) | ≈ 0.84 (1.25) |
| 220-062- | | -0 | 2.44 (62) | 3.23 (82) | ≈ 0.77 (1.14) | – |
| 220-070- | | -0 | 2.76 (70) | 3.54 (90) | ≈ 0.79 (1.18) | – |
| 220-075- | 760-075 | -0 | 2.95 (75) | 3.74 (95) | ≈ 0.81 (1.21) | ≈ 0.97 (1.44) |
| 220-087- | | -0 | 3.43 (87) | 4.21 (107) | ≈ 0.85 (1.27) | – |
| 220-100- | 760-100- | -0 | 3.94 (100) | 4.72 (120) | ≈ 0.89 (1.32) | ≈ 1.10 (1.64) |
| 220-125- | 760-125- | -0 | 4.92 (125) | 5.71 (145) | ≈ 0.96 (1.43) | ≈ 1.24 (1.84) |
| 220-150- | 760-150- | -0 | 5.91 (150) | 6.69 (170) | ≈ 1.03 (1.54) | ≈ 1.36 (2.02) |
| 220-175- | 760-175- | -0 | 6.89 (175) | 7.68 (195) | ≈ 1.11 (1.65) | ≈ 1.52 (2.26) |
| 220-200- | 760-200- | -0 | 7.87 (200) | 8.66 (220) | ≈ 1.18 (1.76) | ≈ 1.61 (2.40) |
| 220-225- | 760-225- | -0 | 8.86 (225) | 9.65 (245) | ≈ 1.26 (1.87) | ≈ 1.72 (2.56) |
| 220-250- | 760-250- | -0 | 9.84 (250) | 10.63 (270) | ≈ 1.33 (1.98) | ≈ 1.92 (2.85) |
| 220-275- | | -0 | 10.83 (275) | 11.61 (295) | ≈ 1.40 (2.09) | – |
| 220-300- | 760-300- | -0 | 11.81 (300) | 12.60 (320) | ≈ 1.48 (2.20) | ≈ 2.16 (3.21) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 220-300-250-0

| | 055** | 063** | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.17 (055*) | 2.48 (063*) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| *H* | 6.06 (154) | 6.69 (170) | 7.64 (194) | 9.61 (244) | 11.57 (294) | 13.54 (344) | 15.51 (394) | 17.48 (444) | 21.42 (544) |
| *D* | 4.92 (125) | 5.24 (133) | 5.71 (145) | 6.69 (170) | 7.68 (195) | 8.66 (220) | 9.65 (245) | 10.63 (270) | 12.60 (320) |
| *K* | 10.43 (265) | 11.42 (290) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) | 25.39 (645) | 28.54 (725) | 34.65 (880) |

** This radius is not available for the R760 Series
0=Standard color black. For other colors see Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

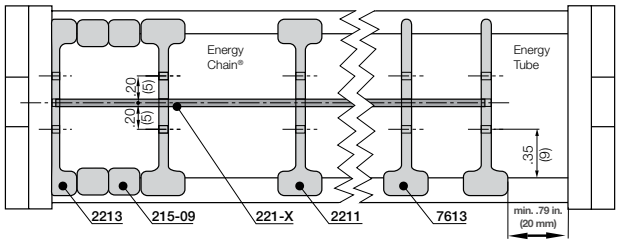
# E-Chain System® E4/100
# Series 220/R760
# Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: Vertical separators and spacers

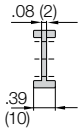
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least .79 in. (20mm) for E-Tubes and



Standard

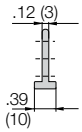
**Vertical separator 2201**




| Vertical separator (Chain only) | |
|---|---|
| Unassembled | **Part No. 2201** |
| Assembled | **Part No. 2211** |

- **Standard separator 2201 for E-Chains®**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

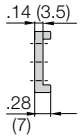
**Vertical separator 7603**




| Vertical separator (tube only) | |
|---|---|
| Unassembled | **Part No. 7603** |
| Assembled | **Part No. 7613** |

- **Vertical separator 7603 for E-Tubes**
  This separator is used for vertical subdivision. Because they are slotted, separators can also be used horizontally to form simple compartments.

**Side plate 2203**




| Side plate (chain only) | |
|---|---|
| Unassembled | **Part No. 2203** |
| Assembled | **Part No. 2213** |

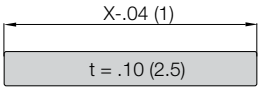
- **Side plate 2203 for E-Chains®**
  Used in conjunction with full-width shelf 220-X, this option is used for applications involving many thin cables with similar diameters.

**Spacers 205-09**

| Spacer (chain only) | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

### Full-width shelf 220-XX



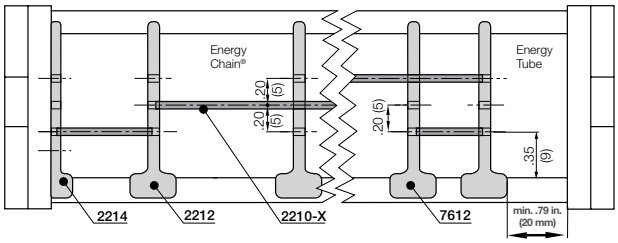
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.57 | (040) | **220-40** | **221-40** |
| 1.97 | (050) | **220-50** | **221-50** |
| 2.44 | (062) | **220-62** | **221-62** |
| 2.76 | (070) | **220-70** | **221-70** |
| 2.95 | (075) | **220-75** | **221-75** |
| 3.43 | (087) | **220-87** | **221-87** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 3.94 | (100) | **220-100** | **221-100** |
| 4.92 | (125) | **220-125** | **221-125** |
| 5.91 | (150) | **220-150** | **221-150** |
| 6.89 | (175) | **220-175** | **221-175** |
| 7.87 | (200) | **220-200** | **221-200** |

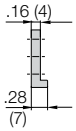
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.



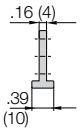

- **Side plates 2204**
  This component is used to form the basic pattern of a shelf system.




| Side plate | |
|---|---|
| Unassembled | **Part No. 2204** |
| Assembled | **Part No. 2214** |

Side plate
2204

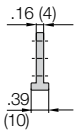
- **Vertical separator 2202 for E-Chain®**
  This component is used to form the basic pattern of a shelf system.




| Vertical separator (chain only) | |
|---|---|
| Unassembled | **Part No. 2202** |
| Assembled | **Part No. 2212** |

Vertical separator
2202

- **Vertical separator 7602 for E-Tube**
  This separator is slotted and able to be combined with shelves




| Vertical separator (tube only) | |
|---|---|
| Unassembled | **Part No. 7602** |
| Assembled | **Part No. 7612** |

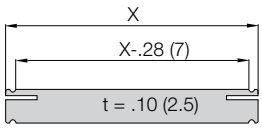
Vertical separator
7602

**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **2200-18** | **2210-18** |
| .91 | (23) | **2200-23** | **2210-23** |
| 1.10 | (28) | **2200-28** | **2210-28** |
| 1.30 | (33) | **2200-33** | **2210-33** |
| 1.50 | (38) | **2200-38** | **2210-38** |
| 1.69 | (43) | **2200-43** | **2210-43** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 1.89 | (48) | **2200-48** | **2210-48** |
| 2.28 | (58) | **2200-58** | **2210-58** |
| 2.68 | (68) | **2200-68** | **2210-68** |
| 2.87 | (73) | **2200-73** | **2210-73** |
| 3.46 | (88) | **2200-88** | **2210-88** |
| 3.90 | (99) | **2200-99** | **2210-99** |






PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

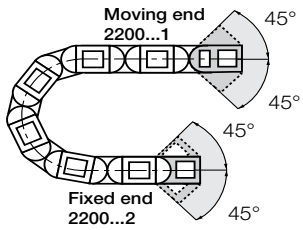
# E-Chain System® E4/100
# Series 220/R760
# Mounting Brackets - KMA

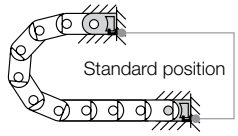
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



## Option 1: pivoting

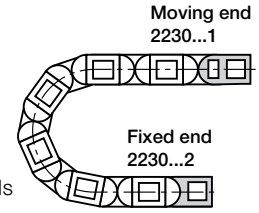
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

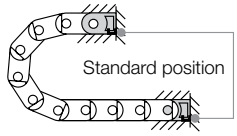




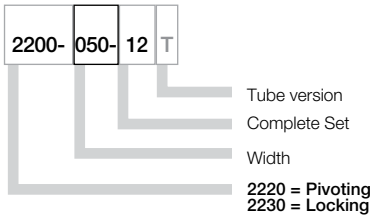

## Option 2: locking

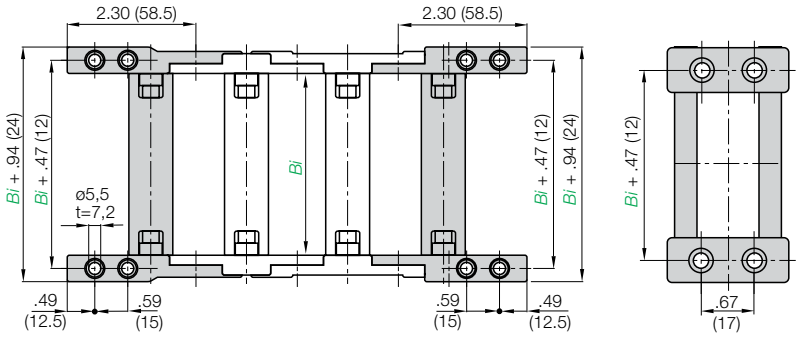
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels






### Part Number Structure




**Part number examples are shown for pivoting brackets. For locking brackets change part number to 2230**

**Part No. Full Set** (pivoting)
Series 220
2220-Width-12

**Part No. Full Set** (pivoting)
Tube Series R760
2220-Width-12T

**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

| Width | Part No. Full Set | | | Tube Option | *Bi* |
|---|---|---|---|---|---|
| | Pivoting | Locking | | | in. (mm) |
| -040 | 2220 | 2230 | -040-12 | | 1.57 (40) |
| -050 | 2220 | 2230 | -050-12 | T | 1.97 (50) |
| -062 | 2220 | 2230 | -062-12 | | 2.44 (62) |
| -070 | 2220 | 2230 | -070-12 | | 2.76 (70) |
| -075 | 2220 | 2230 | -075-12 | T | 2.95 (75) |
| -087 | 2220 | 2230 | -087-12 | | 3.43 (87) |
| -100 | 2220 | 2230 | -100-12 | T | 3.94 (100) |
| -125 | 2220 | 2230 | -125-12 | T | 4.92 (125) |
| -150 | 2220 | 2230 | -150-12 | T | 5.91 (150) |
| -175 | 2220 | 2230 | -175-12 | T | 6.89 (175) |
| -200 | 2220 | 2230 | -200-12 | T | 7.87 (200) |
| -225 | 2220 | 2230 | -225-12 | T | 8.86 (225) |
| -250 | 2220 | 2230 | -250-12 | T | 9.84 (250) |
| -275 | 2220 | 2230 | -275-12 | | 10.83 (275) |
| -300 | 2220 | 2230 | -300-12 | T | 11.81 (300) |

# E-Chain System® E4/100
# Series 220/R760
# Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 96-30**
- 1/2 travel length of glide bars
  **Part No. 92-01**
- Installation sets as end connectors
  **Part No. 95-50-XX**

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. Standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft. (50 m)
Center mounted

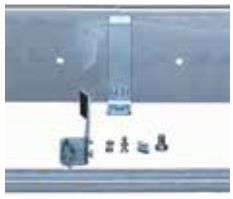
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar

= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 96-30**

= 13 sections of 6.56 ft. (2 m) glide bar
**Part No. 92-01**

**Required number of installation sets**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**95-50-XXX**
**Example:** 95-50-400 for 15.75 (400 mm) long profile rail

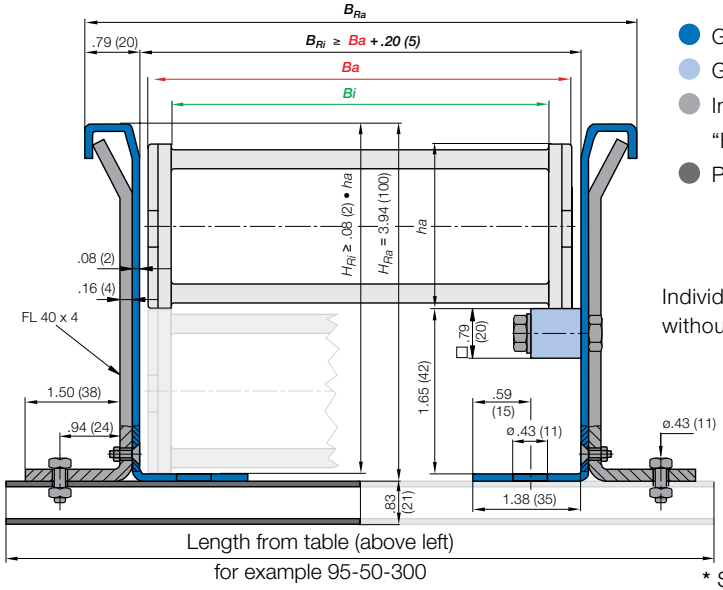
**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**



**Installation sets as section connectors**

Width of Crossbar
220-**040**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-040** | 2.56 (65) | * |
| **-050** | 2.95 (75) | **95-50-200** |
| **-062** | 3.43 (87) | **95-50-200** |
| **-070** | 3.74 (95) | **95-50-200** |
| **-075** | 3.94 (100) | **95-50-225** |
| **-100** | 4.92 (125) | **95-50-250** |
| **-125** | 5.91 (150) | **95-50-275** |
| **-150** | 6.89 (175) | **95-50-300** |
| **-175** | 7.87 (200) | **95-50-325** |
| **-200** | 8.86 (225) | **95-50-350** |
| **-225** | 9.84 (250) | **95-50-375** |
| **-250** | 10.83 (275) | **95-50-400** |
| **-275** | 11.81 (300) | **95-50-425** |
| **-300** | 12.80 (325) | **95-50-450** |




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 280/290/R770

For new applications use Series E4-32

1.26" 1.26"

## Price Index

Series 280

Series 290

Series R770

## Special Features / Options

Low noise version E4/101 Series 281 available with special rubber pads

IPA Certificate, Cleanroom ISO Class 3 (DIN 14644-1) at v = 1 m/s for Series 280.10.100.0 tested with igus® Chainflex® cables

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 262 ft (80 m) |
| Vertical, standing ≤ 16.4 ft (5 m) |
| Side-mounted, unsupp. ≤ 4.92 ft (1.5 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- If long, side-mounted, unsupported length is required
  ➤ **Series 2828/2928/R7728**
- If single-radius accessibility is sufficient
  ➤ **Series 26/27/27i, Chapter 4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Crossbars on E-Chains® are removable along both radii
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Closed and open styles can be combined
6. Optimized glide pads with lateral wear allowance
7. Integrated strain relief possible
8. Numerous interior separation possibilities
9. Wide, rounded crossbars
10. Stop dog with “brake” for noise reduction
11. E-Chains® also available with reverse bending radius “RBR”

Also available as E4/00-NC without camber: 280-NCST

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 13.12 ft (4 m) **280-30-300-0** | **E-Chain®** |
| With 2 separators **281** assembled every 2nd link | **Interior Separation** |
| 1 Set **28000-30-12P** | **Mounting Bracket** |

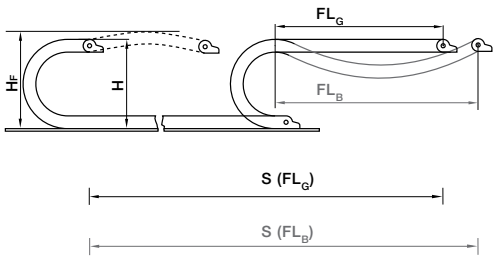
# E-Chain System® E4/100
# Series 280/290/R770
# Installation Dimensions

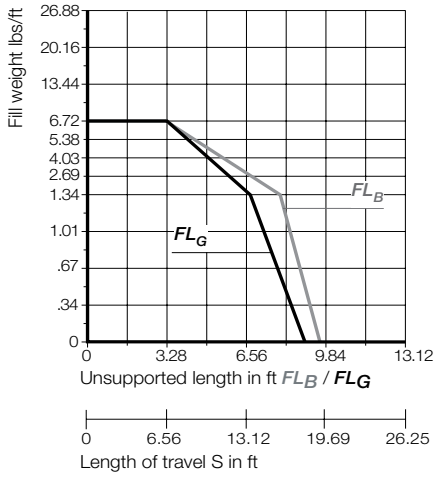
**Short travel, unsupported length**

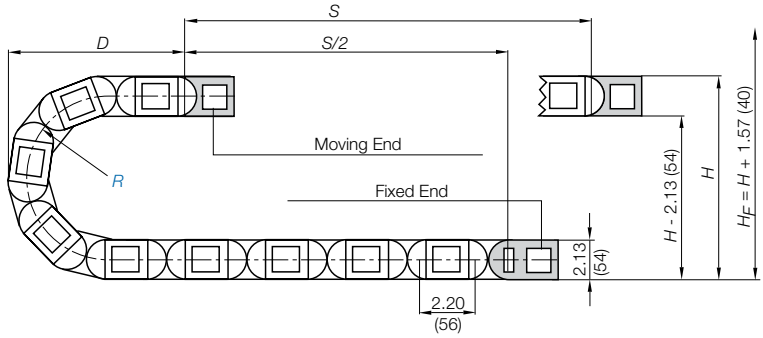
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

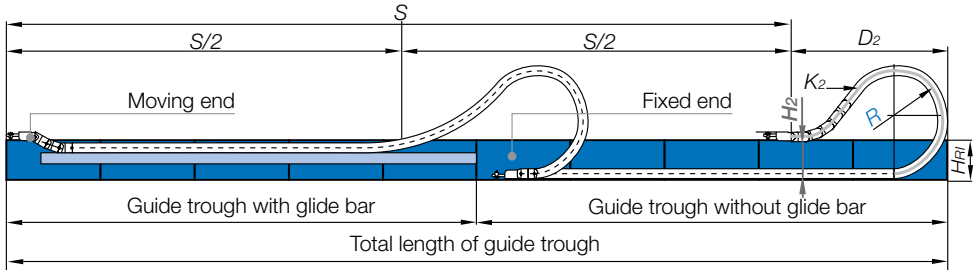
| R | 2.48 (063**) | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H^{0}_{+20}$ | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 15.51 (405) | 17.91 (455) | 19.49 (495) | 21.85 (555) | 25.79 (655) |
| D | 5.75 (146) | 6.22 (158) | 7.20 (183) | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 11.93 (303) | 13.11 (333) | 15.08 (383) |
| K | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 31.69 (805) | 35.43 (900) | 41.54 (1055) |

**Not available for R770

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 656 ft. (200m)**

**For center mount applications:**
**Chain length: =** $\frac{S}{2} + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 2.48 (063**) | 2.95 (075**) | 3.94 (100**) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | - | - | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$+25 | - | - | 14.57 (370) | 18.50 (470) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 35.43 (900) | 36.61 (930) | 43.31 (1100) |
| $K_2$ | - | - | 24.25 (616) | 30.87 (784) | 35.27 (896) | 44.10 (1120) | 50.71 (1288) | 57.32 (1456) | 61.73 (1568) | 75.00 (1904) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

**Not available for R770

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
**➤ Chapter 1**

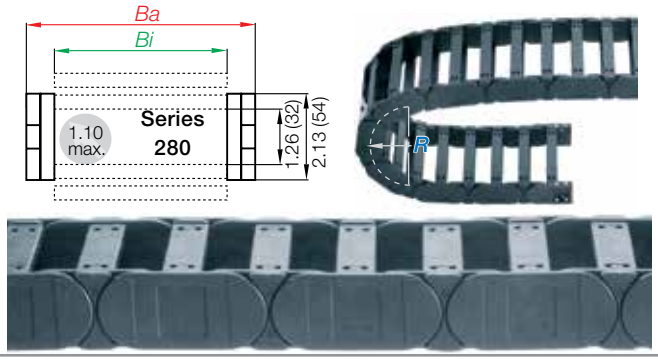



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 280/290/R770

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 280 - E-Chain® with crossbars every link

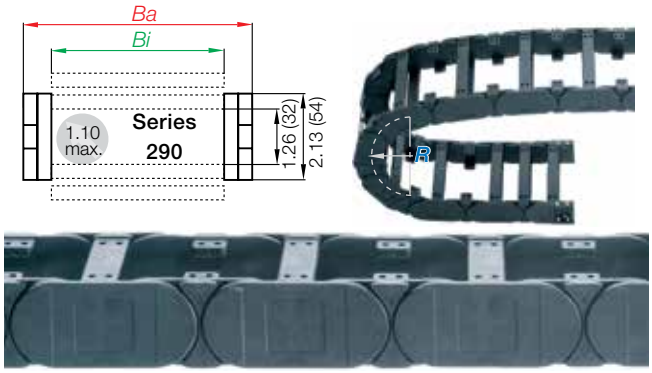



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 280 | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series 290 - E-Chain® with crossbars every other link

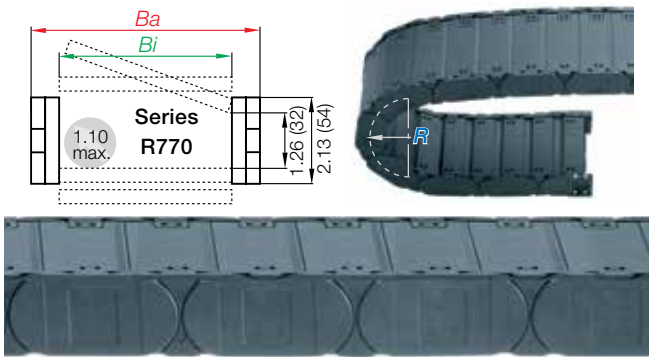



- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 290- | 20- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## Series R770 - fully enclosed E-Tube

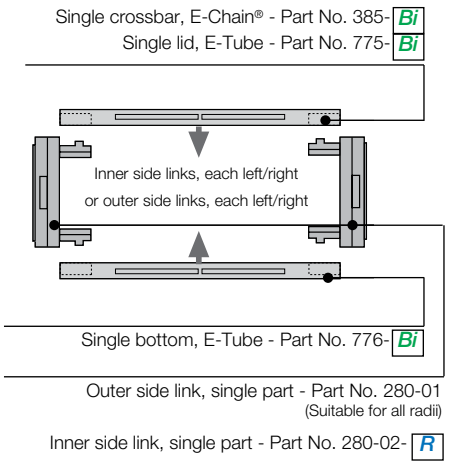


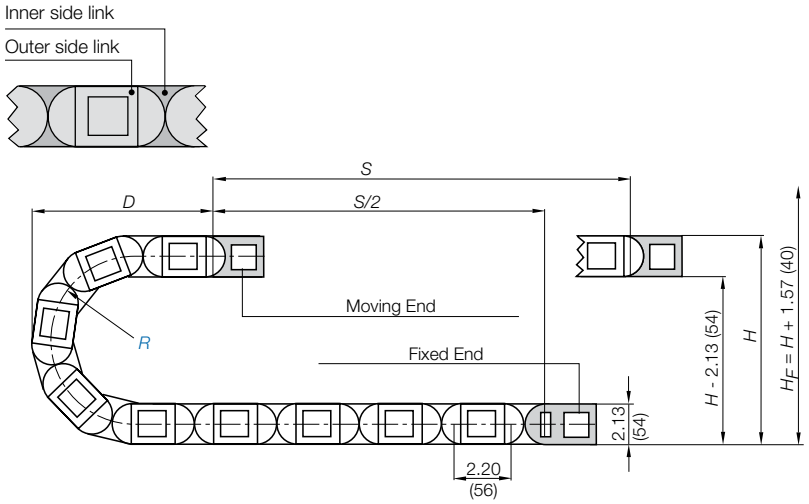

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 770- | 30- | 300- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

## E-Chain® as separate parts, links and side plates



Supplement part number with required radius. Example: 280-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft (m) = 5.49 (18)

| Part Number | | | | | | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 280 lbs/ft (kg/m) | 290 lbs/ft (kg/m) | R770 lbs/ft (kg/m) |
| 280-05- | 290-05 | *770-05- | [ ]-0 | 1.97 (50) | 2.87 (73) | ≈ 1.16 (1.73) | ≈ 1.10 (1.64) | ≈ 1.76 (2.63) |
| 280-06- | 290-06- | | [ ]-0 | 2.68 (68) | 3.58 (91) | ≈ 1.20 (1.79) | ≈ 1.12 (1.67) | – |
| 280-07- | 290-07 | 770-07- | [ ]-0 | 2.95 (75) | 3.86 (98) | ≈ 1.24 (1.84) | ≈ 1.14 (1.69) | ≈ 1.84 (2.75) |
| 280-087- | 290-087- | | [ ]-0 | 3.43 (87) | 4.33 (110) | ≈ 1.30 (1.93) | ≈ 1.16 (1.73) | – |
| 280-10- | 290-10- | 770-10- | [ ]-0 | 3.94 (100) | 4.84 (123) | ≈ 1.36 (2.02) | ≈ 1.20 (1.78) | ≈ 1.90 (2.83) |
| 280-11- | 290-11- | 770-11- | [ ]-0 | 4.25 (108) | 5.16 (131) | ≈ 1.40 (2.08) | ≈ 1.22 (1.81) | ≈ 1.98 (2.94) |
| 280-112- | 290-112- | | [ ]-0 | 4.41(112) | 5.35 (136) | ≈ 1.44 (2.15) | ≈ 1.24 (1.84) | – |
| 280-12- | 290-12- | 770-12- | [ ]-0 | 4.92 (125) | 5.83 (148) | ≈ 1.48 (2.20) | ≈ 1.26 (1.87) | ≈ 2.04 (3.03) |
| 280-137- | 290-137- | | [ ]-0 | 5.39 (137) | 6.34 (161) | ≈ 1.54 (2.29) | ≈ 1.28 (1.91) | – |
| 280-15- | 290-15- | 770-15- | [ ]-0 | 5.91 (150) | 6.81 (173) | ≈ 1.60 (2.38) | ≈ 1.32 (1.96) | ≈ 2.14 (3.19) |
| 280-162- | 290-162- | | [ ]-0 | 6.38 (162) | 7.32 (186) | ≈ 1.64 (2.44) | ≈ 1.34 (1.99) | – |
| 280-17- | 290-17- | 770-17- | [ ]-0 | 6.61 (168) | 7.52 (191) | ≈ 1.69 (2.51) | ≈ 1.36 (2.02) | ≈ 2.28 (3.39) |
| 280-18- | 290-18- | | [ ]-0 | 6.89 (175) | 7.80 (198) | ≈ 1.72 (2.56) | ≈ 1.38 (2.05) | – |
| 280-187- | 290-187- | | [ ]-0 | 7.36 (187) | 8.31 (211) | ≈ 1.78 (2.65) | ≈ 1.40 (2.09) | – |
| 280-20- | 290-20- | 770-20- | [ ]-0 | 7.87 (200) | 8.78 (223) | ≈ 1.84 (2.74) | ≈ 1.44 (2.14) | ≈ 2.41 (3.59) |
| 280-212- | 290-212- | | [ ]-0 | 8.35 (212) | 9.29 (236) | ≈ 1.93 (2.87) | ≈ 1.48 (2.20) | – |
| 280-23- | 290-23- | | [ ]-0 | 8.86 (225) | 9.76 (248) | ≈ 1.96 (2.92) | ≈ 1.49 (2.22) | – |
| 280-237- | 290-237- | | [ ]-0 | 9.33 (237) | 10.28 (261) | ≈ 2.05 (3.05) | ≈ 1.54 (2.29) | – |
| 280-25- | 290-25- | 770-25- | [ ]-0 | 9.84 (250) | 10.75 (273) | ≈ 2.08 (3.10) | ≈ 1.56 (2.32) | ≈ 2.72 (4.04) |
| 280-262- | 290-262- | | [ ]-0 | 10.31 (262) | 11.26 (286) | ≈ 2.14 (3.19) | ≈ 1.59 (2.36) | – |
| 280-28 | 290-28- | | [ ]-0 | 10.83 (275) | 11.73 (298) | ≈ 2.20 (3.28) | ≈ 1.62 (2.41) | – |
| 280-29- | 290-29- | | [ ]-0 | 11.30 (287) | 12.24 (311) | ≈ 2.26 (3.37) | ≈ 1.65 (2.45) | – |
| 280-30- | 290-30- | 770-30- | [ ]-0 | 11.81 (300) | 12.72 (323) | ≈ 2.33 (3.46) | ≈ 1.68 (2.50) | ≈ 2.98 (4.43) |
| 280-312- | 290-312- | | [ ]-0 | 12.28 (312) | 13.23 (336) | ≈ 3.86 (3.59) | ≈ 1.72 (2.56) | – |
| 280-325- | 290-325- | | [ ]-0 | 12.79 (325) | 13.70 (348) | ≈ 2.47 (3.68) | ≈ 1.75 (2.60) | – |
| 280-337- | 290-337- | | [ ]-0 | 13.27 (337) | 14.21 (361) | ≈ 2.53 (3.77) | ≈ 1.78 (2.65) | – |
| 280-350- | 290-350- | | [ ]-0 | 13.78 (350) | 14.69 (373) | ≈ 2.59 (3.86) | ≈ 1.81 (2.69) | – |
| 280-362- | 290-362- | | [ ]-0 | 14.25 (362) | 15.20 (386) | ≈ 2.65 (3.95) | ≈ 1.84 (2.74) | – |
| 280-375- | 290-375- | | [ ]-0 | 14.76 (375) | 15.67 (398) | ≈ 2.72 (4.04) | ≈ 1.88 (2.79) | – |
| 280-387- | 290-387- | | [ ]-0 | 15.24 (387) | 16.18 (411) | ≈ 2.76 (4.11) | ≈ 1.90 (2.82) | – |
| 280-400 | 290-400- | | [ ]-0 | 15.75 (400) | 16.65 (423) | ≈ 2.81 (4.18) | ≈ 1.92 (2.86) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 280-07-150-0

| | 063** | 075** | 100** | 125 | 150 | 175 | 200 | 220 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 2.48 (063*) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
| *H* $^{-0}_{+20}$ | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 15.94 (405) | 17.91 (455) | 19.49 (495) | 21.85 (555) | 25.79 (655) |
| *D* | 5.75 (146) | 6.22 (158) | 7.20 (183) | 8.19 (208) | 9.17 (233) | 10.16 (258) | 11.14 (283) | 11.93 (303) | 13.11 (333) | 15.08 (383) |
| *K* | 12.20 (310) | 13.78 (350) | 16.93 (430) | 19.88 (505) | 23.03 (585) | 26.18 (665) | 29.33 (745) | 31.69 (805) | 35.43 (900) | 41.54 (1055) |

** This radius is not available for the R770 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.285. For large diameter hoses see page 6.285

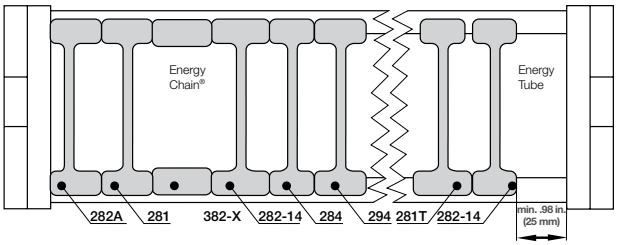
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 280/290/R770
# Interior Separation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

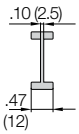
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.
**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



Standard

**Vertical separator 280**




**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 280** |
| Assembled | **Part No. 281** |

- **Standard separator 280 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

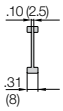
**Vertical separator 280 -14**

**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 280-14** |
| Assembled | **Part No. 281-14** |

- **Vertical separator 280-14 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its broad base design when used with thick cables or hoses.

**Vertical separator 283**

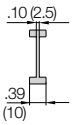



**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 283** |
| Assembled | **Part No. 284** |

- **Vertical separator 283 for E-Chains®**
  This separator features a narrow base for use in applications where a large number of small cables need to be individually separated.

**Locking separator 293**

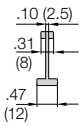



**Locking Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 293** |
| Assembled | **Part No. 294** |

- **Locking separator 293 for E-Chains®**
  This separator is used in applications with very high relative humidity It features increased retention force which is produced by asymmetrical retention “clamps” attached to the chain’s cross-bar. Please ensure that they are properly aligned.

**Locking separator 281T**

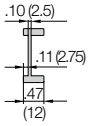



**Locking Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 280T** |
| Assembled | **Part No. 281T** |

- **Locking separator 281T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal.

**Asymmetric separator 281A**




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 280A** |
| Assembled | **Part No. 281A** |

- **Asymmetrical separator 281A for E-Chains®**
  This separator features an (12mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 381-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

Spacers available in the following sizes:

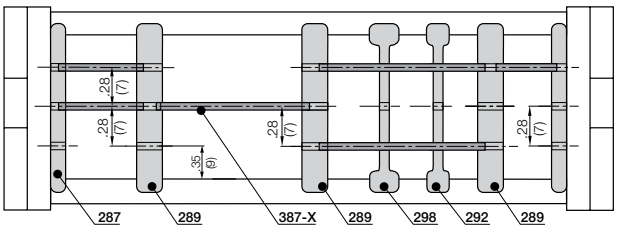
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | 79” | (20) |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

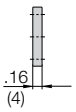
# E-Chain System® E4/100
# Series 280/290/R770
# Interior Separation

## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 286**
  This component is used to form the basic pattern of a shelf system.




| Side Plate | |
|---|---|
| Unassembled | **Part No. 286** |
| Assembled | **Part No. 287** |

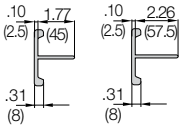
Side plate 286

- **Vertical separator 288**
  This component is used to form the basic pattern of a shelf system.

| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 288** |
| Assembled | **Part No. 289** |

Vertical separator 288

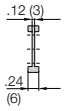
- **Locking vertical separator 281-S**
  This separator is slotted and able to be combined with shelves




| Separators w/Integrated Shelf | |
|---|---|
| Unassembled | **Part No. 281-S-45** |
| Assembled | **Part No. 282-S-45** |
| Unassembled | **Part No. 281-S-57** |
| Assembled | **Part No. 282-S-57** |

Separator with integrated shelf 281-S

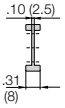
- **Closed Slotted separators 291**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.




| Slotted Separators | |
|---|---|
| Unassembled | **Part No. 291** |
| Assembled | **Part No. 292** |

Closed slotted separator 291

- **Open slotted separator 297**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle slot only.



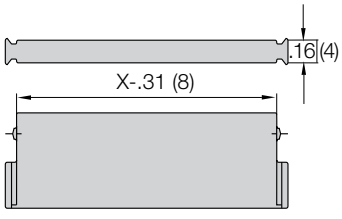

| Slotted Separators, Open | |
|---|---|
| Unassembled | **Part No. 297** |
| Assembled | **Part No. 298** |

Open slotted separator 297

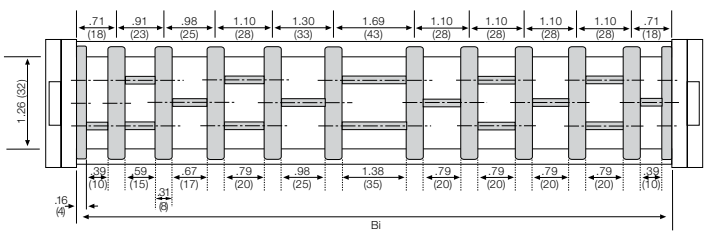
| Width X | | Usable Width | | Part No. | Part No. |
|---|---|---|---|---|---|
| in. | (mm) | in. | (mm) | Unassembled | Assembled |
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 3 different heights in .28" (7mm) increments




The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator.***




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 280/290/R770
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

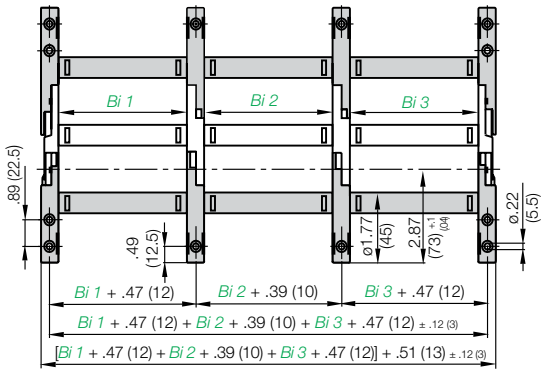
**280-10/20/10-** 200 **-0**

**280-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

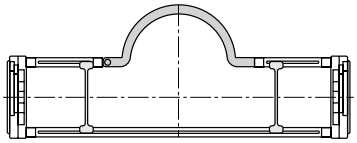
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



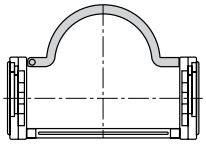

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.13 in. (105 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**



**Round extender crossbar combined with standard snap-open crossbars.**

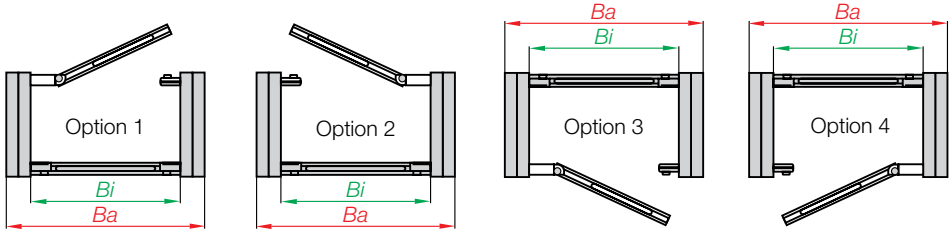


**Attached directly to the side link.**

| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.13 (105) | Round | No | Yes |
| **385-18-RD115** | 4.13 (105) | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance

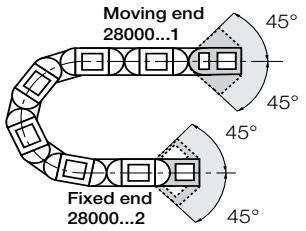


# E-Chain System® E4/100
# Series 280/290/R770
# Mounting Brackets - KMA

**Standard**

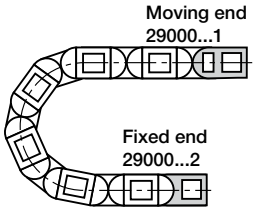
## Option 1: pivoting

- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

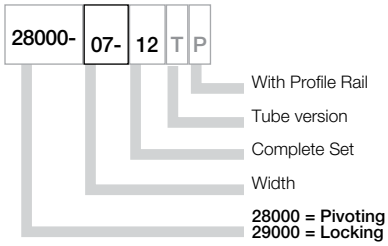


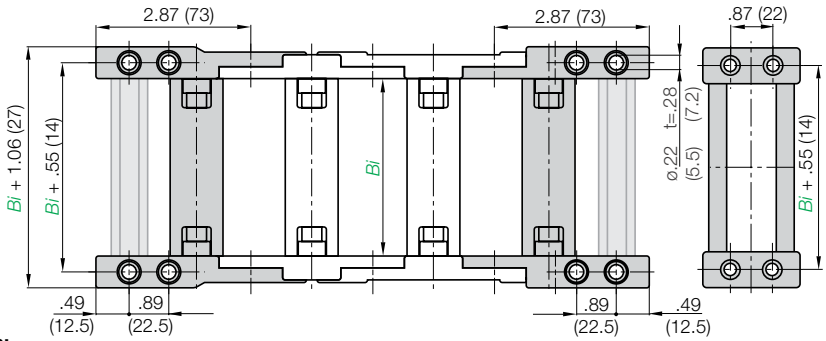
## Option 2: locking

- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations



### Part Number Structure




**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 29000**

**Part No. Full Set** (pivoting)
Series 2828 or 290:
28000-Width-12

**Part No. Full Set** (pivoting)
with profile rail
Series 2828 or 290
28000-Width-12P

**Part No. Full Set** (pivoting)
Tube Series R770
28000-Width-12T

**Part No. Full Set** (pivoting)
with Profile Rail
Series 770
28000-Width-12TP

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05* | 28000 | 29000 | -05-12 | T | P | 1.97 (50) |
| -06 | 28000 | 29000 | -06-12 | | P | 2.68 (68) |
| -07 | 28000 | 29000 | -07-12 | T | P | 2.95 (75) |
| -087 | 28000 | 29000 | -087-12 | | P | 3.43 (87) |
| -10 | 28000 | 29000 | -10-12 | T | P | 3.94 (100) |
| -11 | 28000 | 29000 | -11-12 | T | P | 4.25 (108) |
| -112 | 28000 | 29000 | -112-12 | | P | 4.41 (112) |
| -12 | 28000 | 29000 | -12-12 | T | P | 4.92 (125) |
| -137 | 28000 | 29000 | -137-12 | | P | 5.39 (137) |
| -15 | 28000 | 29000 | -15-12 | T | P | 5.91 (150) |
| -162 | 28000 | 29000 | -162-12 | | P | 6.38 (162) |
| -17 | 28000 | 29000 | -17-12 | T | P | 6.61 (168) |
| -18 | 28000 | 29000 | -18-12 | | P | 6.89 (175) |
| -187 | 28000 | 29000 | -187-12 | | P | 7.36 (187) |
| -20 | 28000 | 29000 | -20-12 | T | P | 7.87 (200) |
| -212 | 28000 | 29000 | -212-12 | | P | 8.35 (212) |

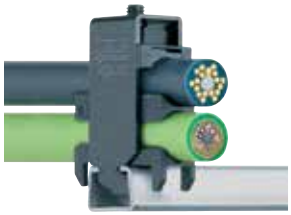
| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -23 | 28000 | 29000 | -23-12 | | P | 8.86 (225) |
| -237 | 28000 | 29000 | -237-12 | | P | 9.33 (237) |
| -25 | 28000 | 29000 | -25-12 | T | P | 9.84 (250) |
| -262 | 28000 | 29000 | -262-12 | | P | 10.31 (262) |
| -28 | 28000 | 29000 | -28-12 | | P | 10.83 (275) |
| -29 | 28000 | 29000 | -29-12 | | P | 11.30 (287) |
| -30 | 28000 | 29000 | -30-12 | T | P | 11.81 (300) |
| -312 | 28000 | 29000 | -312-12 | | P | 12.28 (312) |
| -325 | 28000 | 29000 | -325-12 | | P | 12.79 (325) |
| -337 | 28000 | 29000 | -337-12 | | P | 13.27 (337) |
| -350 | 28000 | 29000 | -350-12 | | P | 13.78 (350) |
| -362 | 28000 | 29000 | -362-12 | | P | 14.25 (362) |
| -375 | 28000 | 29000 | -375-12 | | P | 14.76 (375) |
| -387 | 28000 | 29000 | -387-12 | | P | 15.24 (387) |
| -400 | 28000 | 29000 | -400-12 | | P | 15.75 (400) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 280/290/R770
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1M | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1M | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1M | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1M | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1M | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1M | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1M | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1M | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1M | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1M | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1M | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

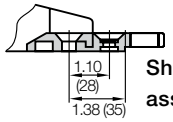
## Chainfix Clip

### Modular snap-on strain relief device

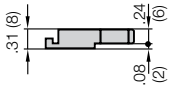
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

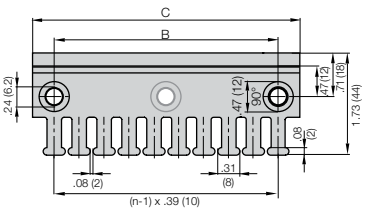



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4/100
# Series 280/290/R770
# Guide Troughs

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part Number 98-30**
- 1/2 travel length of glide bars
  **Part number 92-01**
- Installation sets as end connectors
  **Part Number 93-50-XX**

Width of Crossbar
280-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.15 (78) | **93-50-200** |
| **-06** | 3.86 (96) | **93-50-225** |
| **-07** | 4.13 (103) | **93-50-225** |
| **-087** | 4.61 (115) | **93-50-225** |
| **-10** | 5.12 (128) | **93-50-250** |
| **-11** | 5.43 (136) | **93-50-250** |
| **-112** | 5.59 (141) | **93-50-250** |
| **-12** | 6.10 (153) | **93-50-275** |
| **-137** | 6.57 (166) | **93-50-275** |
| **-15** | 7.09 (178) | **93-50-300** |
| **-162** | 7.56 (191) | **93-50-300** |
| **-17** | 7.80 (196) | **93-50-325** |
| **-18** | 8.07 (203) | **93-50-325** |
| **-187** | 8.54 (216) | **93-50-325** |
| **-20** | 9.06 (228) | **93-50-350** |
| **-212** | 9.53 (241) | **93-50-350** |
| **-23** | 10.04 (253) | **93-50-375** |
| **-237** | 10.51 (266) | **93-50-375** |
| **-25** | 11.02 (278) | **93-50-400** |
| **-262** | 11.50 (291) | **93-50-400** |
| **-28** | 12.01 (303) | **93-50-425** |
| **-29** | 12.48 (316) | **93-50-425** |
| **-30** | 12.99 (328) | **93-50-450** |
| **-312** | 13.46 (341) | **93-50-450** |
| **-325** | 13.98 (353) | **93-50-475** |
| **-337** | 14.45 (366) | **93-50-475** |
| **-350** | 14.96 (378) | **93-50-500** |
| **-362** | 15.43 (391) | **93-50-500** |
| **-375** | 15.94 (403) | **93-50-525** |
| **-387** | 16.42 (416) | **93-50-525** |
| **-400** | 16.93 (428) | **93-50-550** |

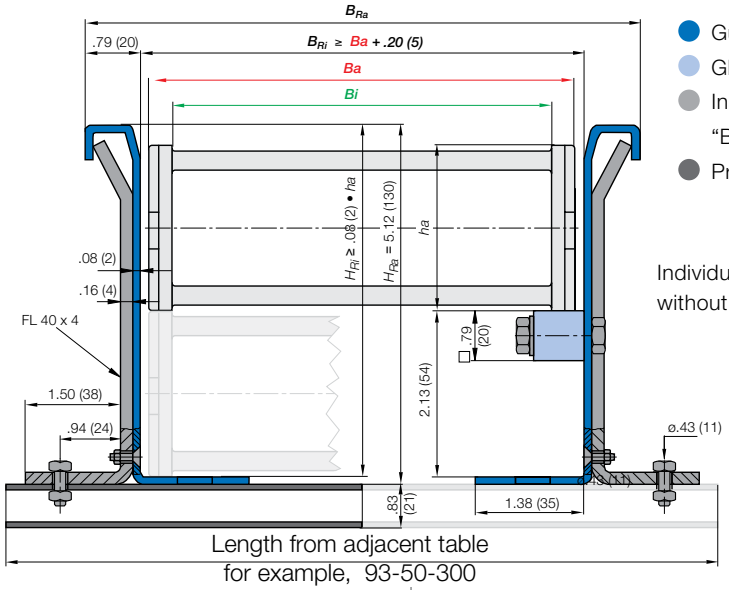
Standard length profile rail

**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m.) The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 98-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 92-01**
**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**93-50-XXX**
Example: 93-50-400 for 15.75" (400 mm) long profile rail.

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 380/390/R780

For new applications use Series E4-42

1.65” 1.65”

## Price Index

Series 380 Series 390

Series R780

## Special Features / Options

Low noise version E4/101 Series 381 available with special rubber pads

Clean-Room Cleanroom test upon request

EX ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 6.56 ft (2 m) |
| Rotary requires further calculation |

## Usage Guidelines

- If quiet operation is required
- If very high speeds and/or accelerations are required
- Long travels
- High fill weights

- If long, side-mounted, unsupported length is required
  ➤ **Series 3838/3938/R7838**
- If single-radius accessibility is sufficient
  ➤ **Series 340/350, Chapter 4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Locking or pivoting mounting brackets available
3. Crossbars on E-Chains® are removable along both radii
4. Hinged snap-open removable lids along the outer radius of the Energy tube
5. Optimized glide pads with lateral wear allowance
6. Closed and open styles can be combined
7. Integrated strain relief possible
8. Stop dog with “brake” for noise reduction
9. Numerous interior separation possibilities
10. Wide, rounded crossbars
11. E-Chains® also available with reverse bending radius “RBR”

Also available as
E4/00-NC without camber:
380-NCST

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

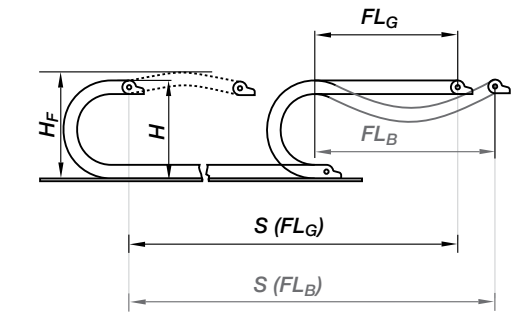
| | |
|---|---|
| 16.4 ft (5 m) **380-20-300-0** | **E-Chain®** |
| With 2 separators **381** assembled every 2nd link | **Interior Separation** |
| 1 Set **38000-20-12P** | **Mounting Bracket** |

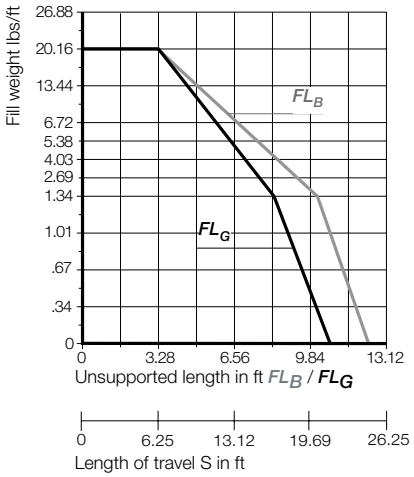
# E-Chain System® E4/100
# Series 380/390/R780
# Installation Dimensions

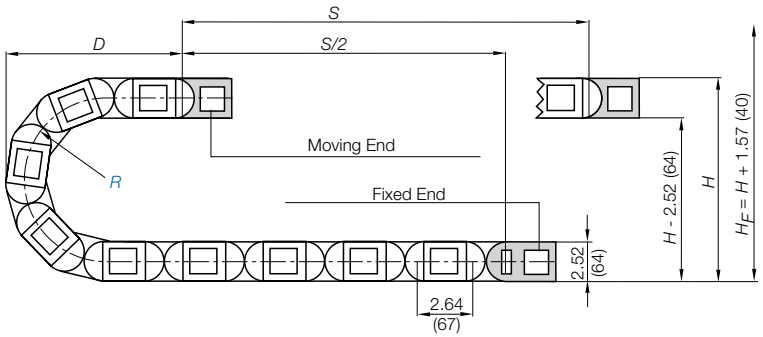
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $_{S}/_{2}$ + K

The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H $^{-0}_{+25}$ | 8.46 (215) | 10.43 (265) | 11.61 (295) | 12.40 (315) | 14.37 (365) | 15.94 (405) | 18.31 (465) | 19.49 (495) | 22.24 (565) | 26.18 (665) | 30.12 (765) |
| D | 6.85 (174) | 7.83 (199) | 8.43 (214) | 8.82 (224) | 9.80 (249) | 10.59 (269) | 11.77 (299) | 12.36 (314) | 13.74 (349) | 15.71 (399) | 17.68 (449) |
| K | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 26.38 (670) | 30.12 (765) | 31.89 (810) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

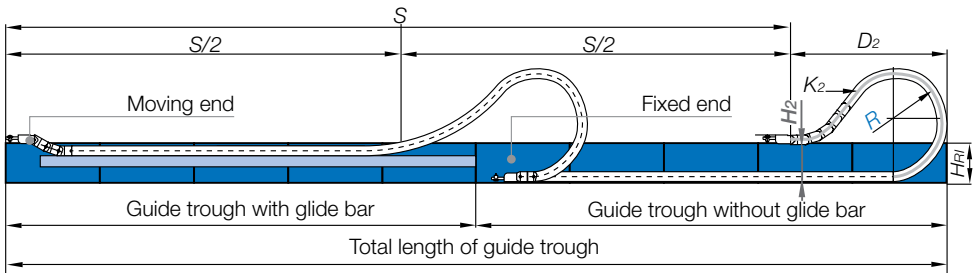
S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 984 ft. (300 m)**

**For center mount applications:**
**Chain length =** $_{S}/_{2}$ + $K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | - | - | - | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ $^{}_{+25}$ | - | - | - | 18.70 (475) | 22.44 (570) | 24.41 (620) | 30.71 (780) | 34.06 (865) | 40.55 (1030) | 45.28 (1150) | 59.06 (1500) |
| $K_2$ | - | - | - | 31.65 (804) | 36.93 (938) | 42.20 (1072) | 52.76 (1340) | 55.39 (1407) | 65.94 (1675) | 76.50 (1943) | 94.96 (2412) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

## Technical Data

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

Details of material properties
**➤ Chapter 1**

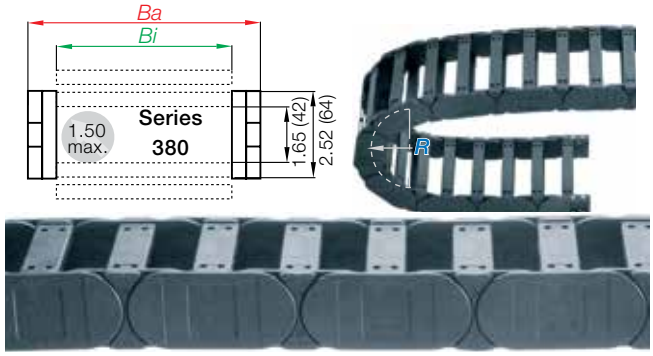



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 380/390/R780

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 380 - E-Chain® with crossbars every link

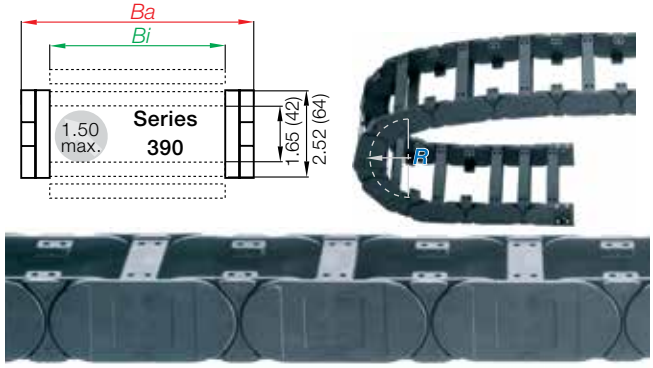



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

| 380- | 400- | 300- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## Series 390 - E-Chain® with crossbars every other link

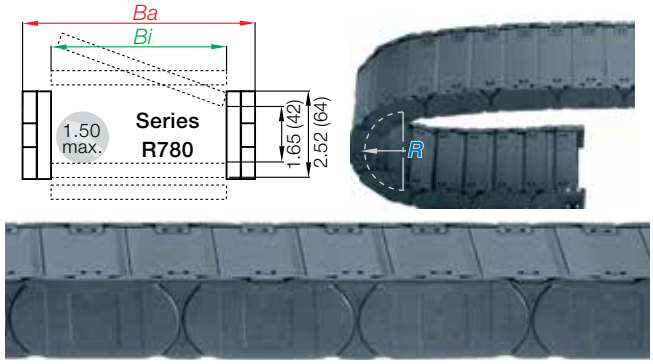



- Crossbars every other link Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

| 390- | 400- | 300- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## Series R780 - fully enclosed E-Tube

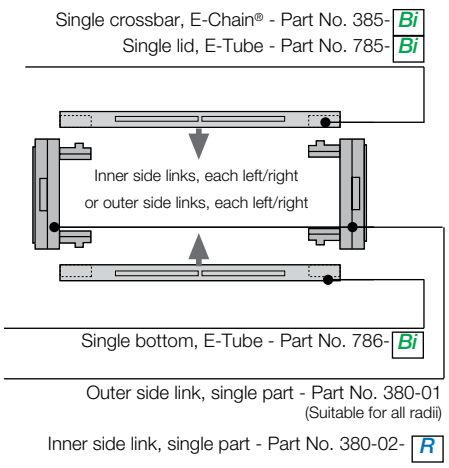


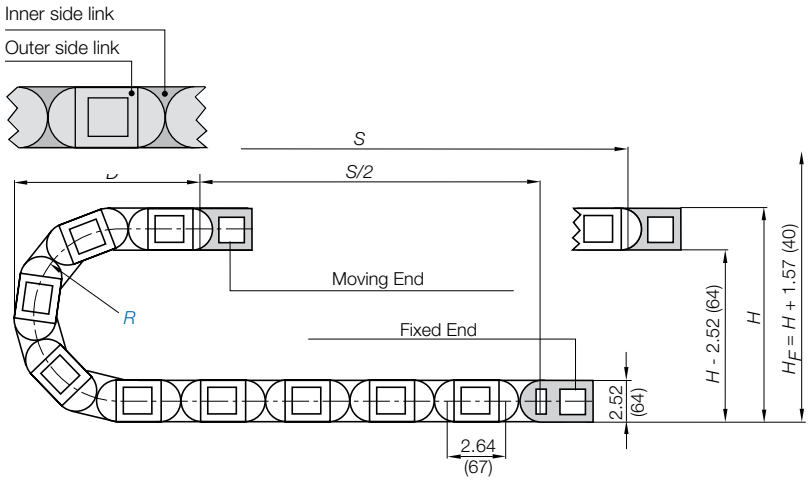

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**

| 780- | 25- | 300- | 0 |
|---|---|---|---|
| Series | Width | Bending radius | Color - Black |

## E-Chain® as separate parts, links and side plates



Supplement part number with required radius. Example: 380-30-300-0
Pitch: 2.64 in. (67mm) per link, links/ft (m) = 4.57 (15)

| Part Number | | | | | | Weight | | |
|---|---|---|---|---|---|---|---|---|
| Crossbars Every link | Crossbars Every other | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 380 lbs/ft (kg/m) | 390 lbs/ft (kg/m) | R780 lbs/ft (kg/m) |
| 380-05- | 390-05 | *780-05- | [ ]-0 | 1.97 (50) | 2.99 (76) | ≈ 1.38 (2.06) | ≈ 1.33 (1.98) | ≈ 1.51 (2.25) |
| 380-06- | 390-06- | | [ ]-0 | 2.68 (68) | 3.70 (94) | ≈ 1.40 (2.09) | ≈ 1.34 (1.99) | – |
| 380-07- | 390-07 | 780-07- | [ ]-0 | 2.95 (75) | 3.98 (101) | ≈ 1.42 (2.12) | ≈ 1.35 (2.01) | ≈ 1.60 (2.38) |
| 380-087- | 390-087- | | [ ]-0 | 3.43 (87) | 4.49 (114) | ≈ 1.47 (2.18) | ≈ 1.37 (2.04) | – |
| 380-10- | 390-10- | 780-10- | [ ]-0 | 3.94 (100) | 4.96 (126) | ≈ 1.51 (2.25) | ≈ 1.40 (2.08) | ≈ 1.75 (2.60) |
| 380-11- | 390-11- | 780-11- | [ ]-0 | 4.25 (108) | 5.28 (134) | ≈ 1.55 (2.30) | ≈ 1.41 (2.10) | ≈ 1.78 (2.65) |
| 380-112- | 390-112- | | [ ]-0 | 4.41(112) | 5.47 (139) | ≈ 1.55 (2.30) | ≈ 1.41 (2.10) | – |
| 380-12- | 390-12- | 780-12- | [ ]-0 | 4.92 (125) | 5.94 (151) | ≈ 1.61 (2.40) | ≈ 1.44 (2.15) | ≈ 1.89 (2.81) |
| 380-137- | 390-137- | | [ ]-0 | 5.39 (137) | 6.46 (164) | ≈ 1.64 (2.44) | ≈ 1.46 (2.17) | – |
| 380-15- | 390-15- | 780-15- | [ ]-0 | 5.91 (150) | 6.93 (176) | ≈ 1.70 (2.53) | ≈ 1.49 (2.21) | ≈ 2.06 (3.07) |
| 380-162- | 390-162- | | [ ]-0 | 6.38 (162) | 7.44 (189) | ≈ 1.71 (2.55) | ≈ 1.49 (2.22) | – |
| 380-17- | 390-17- | 780-17- | [ ]-0 | 6.61 (168) | 7.64 (194) | ≈ 1.76 (2.62) | ≈ 1.52 (2.26) | ≈ 2.18 (3.24) |
| 380-18- | 390-18- | | [ ]-0 | 6.89 (175) | 7.91 (201) | ≈ 1.76 (2.62) | ≈ 1.52 (2.26) | – |
| 380-187- | 390-187- | | [ ]-0 | 7.36 (187) | 8.43 (214) | ≈ 1.81 (2.69) | ≈ 1.55 (2.30) | – |
| 380-20- | 390-20- | 780-20- | [ ]-0 | 7.87 (200) | 8.90 (226) | ≈ 1.86 (2.77) | ≈ 1.57 (2.33) | ≈ 2.37 (3.53) |
| 380-212- | 390-212- | | [ ]-0 | 8.35 (212) | 9.41 (239) | ≈ 1.91 (2.84) | ≈ 1.59 (2.37) | – |
| 380-23- | 390-23- | | [ ]-0 | 8.86 (225) | 9.88 (251) | ≈ 1.96 (2.92) | ≈ 1.62 (2.41) | – |
| 380-237- | 390-237- | | [ ]-0 | 9.33 (237) | 10.39 (264) | ≈ 1.99 (2.96) | ≈ 1.63 (2.43) | – |
| 380-25- | 390-25- | 780-25- | [ ]-0 | 9.84 (250) | 10.87 (276) | ≈ 2.05 (3.05) | ≈ 1.66 (2.47) | ≈ 2.91 (4.33) |
| 380-262- | 390-262- | | [ ]-0 | 10.31 (262) | 11.38 (289) | ≈ 2.06 (3.06) | ≈ 1.67 (2.48) | – |
| 380-28 | 390-28- | | [ ]-0 | 10.83 (275) | 11.85 (301) | ≈ 2.13 (3.17) | ≈ 1.70 (2.53) | – |
| 380-29- | 390-29- | | [ ]-0 | 11.30 (287) | 12.36 (314) | ≈ 2.14 (3.19) | ≈ 1.71 (2.54) | – |
| 380-30- | 390-30- | 780-30- | [ ]-0 | 11.81 (300) | 12.83 (326) | ≈ 2.23 (3.32) | ≈ 1.75 (2.61) | ≈ 3.29 (4.89) |
| 380-312- | 390-312- | | [ ]-0 | 12.28 (312) | 13.35 (339) | ≈ 2.24 (3.34) | ≈ 1.76 (2.62) | – |
| 380-325- | 390-325- | | [ ]-0 | 12.79 (325) | 13.82 (351) | ≈ 2.29 (3.41) | ≈ 1.79 (2.66) | – |
| 380-337- | 390-337- | | [ ]-0 | 13.27 (337) | 14.33 (364) | ≈ 2.33 (3.46) | ≈ 1.80 (2.68) | – |
| 380-350- | 390-350- | | [ ]-0 | 13.78 (350) | 14.80 (376) | ≈ 2.47 (3.68) | ≈ 1.88 (2.79) | – |
| 380-362- | 390-362- | | [ ]-0 | 14.25 (362) | 15.31 (389) | ≈ 2.51 (3.74) | ≈ 1.90 (2.82) | – |
| 380-375- | 390-375- | | [ ]-0 | 14.76 (375) | 15.83 (402) | ≈ 2.55 (3.79) | ≈ 1.91 (2.84) | – |
| 380-387- | 390-387- | | [ ]-0 | 15.24 (387) | 16.30 (414) | ≈ 2.59 (3.85) | ≈ 1.93 (2.87) | – |
| 380-400 | 390-400- | | [ ]-0 | 15.75 (400) | 16.77 (426) | ≈ 2.62 (3.90) | ≈ 1.95 (2.90) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 380-30-150-0

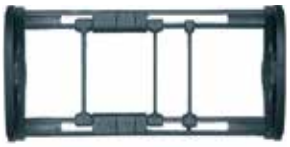
| | 075** | 100** | 115** | 125 | 150 | 170 | 200 | 215 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 4.53 (115) | 4.92 (125) | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| H $^{0}_{+20}$ | 8.46 (215) | 10.43 (265) | 11.61 (295) | 12.40 (315) | 14.37 (365) | 15.94 (405) | 18.31 (465) | 19.49 (495) | 22.24 (565) | 26.18 (665) | 30.12 (765) |
| D | 6.85 (174) | 7.83 (199) | 8.43 (214) | 8.82 (224) | 9.80 (249) | 10.59 (269) | 11.77 (299) | 12.36 (314) | 13.74 (349) | 15.71 (399) | 17.68 (449) |
| K | 14.57 (370) | 17.72 (450) | 19.69 (500) | 20.87 (530) | 24.02 (610) | 26.38 (670) | 30.12 (765) | 31.89 (810) | 36.22 (920) | 42.52 (1080) | 48.62 (1235) |

** This radius is not available for the R780 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.295. For large diameter hoses see page 6.295

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

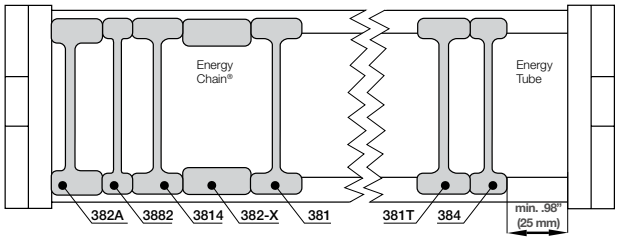
# E-Chain System® E4/100
# Series 380/390/R780
# Interior Separation



## Option 1: Vertical separators and spacers

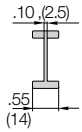
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least .98 in. (25mm) for E-Tubes



Standard

**Vertical separator 380**

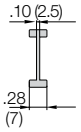



**Separator (chain/tube)**

| | |
|---|---|
| Unassembled | **Part No. 380** |
| Assembled | **Part No. 381** |

- **Standard separator 380 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Vertical separator 3881**

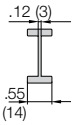



**Separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 3881** |
| Assembled | **Part No. 3882** |

- **Vertical separator 3881 for E-Chains®**
  This separator features a narrow 7mm base for applications where a large number of small cables need to be individually separated.

**Vertical separator 380T**

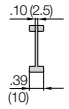



**Vertical Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 380T** |
| Assembled | **Part No. 381T** |

- **Vertical separator 380T for E-Tubes**
  It clamps to the fixed radius and remains free along the other radius to facilitate lid removal. When installing please ensure they are identically aligned.

**Locking separator 383**

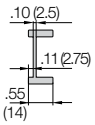



**Locking Separator (tubes only)**

| | |
|---|---|
| Unassembled | **Part No. 383** |
| Assembled | **Part No. 384** |

- **Locking separator 383 for E-Tubes**
  This separator features an increased retention force for applications exposed to very high humidity or extreme loads. It features asymmetric claws for the crossbar which results in the increased retention force.

**Asymmetric separator 381A**




**Asymmetric separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381A** |
| Assembled | **Part No. 382A** |

- **Asymmetrical separator 381A for E-Chains®**
  This separator features an (14mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 381-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

XX = width of the spacer

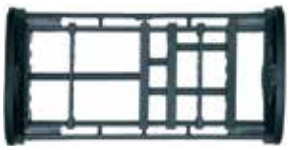
Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | 79” | (20) |

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08” (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16” (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

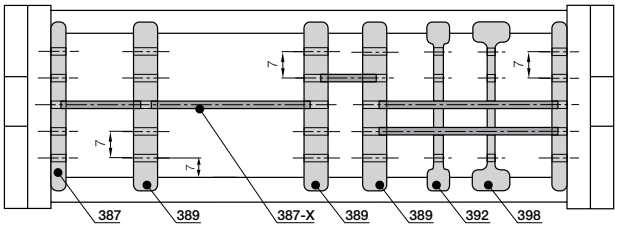
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/100
# Series 380/390/R780
# Interior Separation

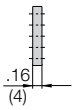


## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements. ➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 386**
  This component is used to form the basic pattern of a shelf system.




| Side Plate | |
|---|---|
| Unassembled | **Part No. 386** |
| Assembled | **Part No. 387** |

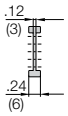
Side plate 386

- **Vertical separator 388**
  This component is used to form the basic pattern of a shelf system.

| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 388** |
| Assembled | **Part No. 389** |

Vertical separator 388

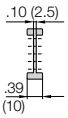
- **Closed Slotted separators 391**
  These are used for complex subdivisions. However, they cannot be retrofitted into an existing interior separation system without removing the shelves first.




| Slotted Separators | |
|---|---|
| Unassembled | **Part No. 391** |
| Assembled | **Part No. 392** |

Closed slotted separator 391

- **Open slotted separator 397**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into the middle 3 slots only.



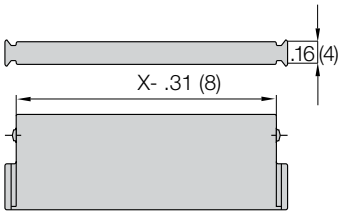

| Slotted Separators, Open | |
|---|---|
| Unassembled | **Part No. 397** |
| Assembled | **Part No. 398** |

Open slotted separator 397

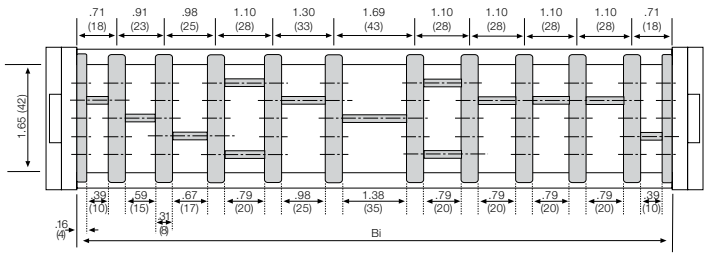
| Width X | | Usable Width | | Part No. | Part No. |
|---|---|---|---|---|---|
| in. | (mm) | in. | (mm) | Unassembled | Assembled |
| .71 | (18) | .39 | (10) | **386-18** | **387-18** |
| .91 | (23) | .59 | (15) | **386-23** | **387-23** |
| .98 | (25) | .67 | (17) | **386-25** | **387-25** |
| 1.10 | (28) | .79 | (20) | **386-28** | **387-28** |
| 1.30 | (33) | .98 | (25) | **386-33** | **387-33** |
| 1.69 | (43) | 1.38 | (35) | **386-43** | **387-43** |
| 1.97 | (50) | 1.65 | (42) | **386-50** | **387-50** |
| 2.13 | (54) | 1.81 | (46) | **386-54** | **387-54** |
| 2.44 | (62) | 2.13 | (54) | **386-62** | **387-62** |
| 2.95 | (75) | 2.64 | (67) | **386-75** | **387-75** |
| 3.43 | (87) | 3.12 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | 3.62 | (92) | **386-100** | **387-100** |
| 4.25 | (108) | 3.94 | (100) | **386-108** | **387-108** |
| 4.92 | (125) | 4.61 | (117) | **386-125** | **387-125** |
| 5.91 | (150) | 5.59 | (142) | **386-150** | **387-150** |
| 6.89 | (175) | 6.57 | (167) | **386-175** | **387-175** |
| 7.87 | (200) | 7.56 | (192) | **386-200** | **387-200** |
| 8.19 | (208) | 7.87 | (200) | **386-208** | **387-208** |

**Shelves 386-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 5 different heights in .28" (7mm) increments




The diagram below is for reference purposes only. Multiple configurations are possible. To create your E-Chain shelving cross section please see our online E-Chain configurator. Call 1-800-521-2747 for assistance and/or go to igus.com click on the ***Products*** drop down menu, choose ***E-Chain Cable Carriers*** and on the next drop down menu simply click on ***E-Chain Configurator***.




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 380/390/R780
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Part number example for E-Chain®

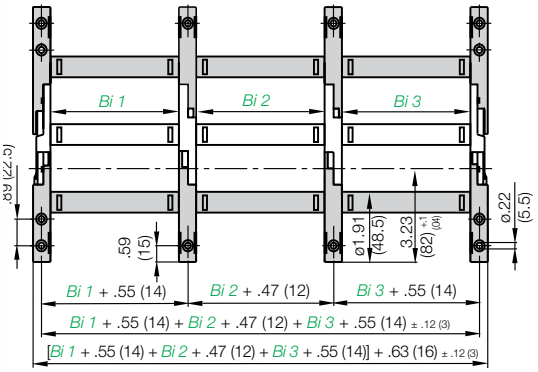
**380-10/20/10-** 200 **-0**

**380-*Bi1*/*Bi2*/*Bi3*-** R **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

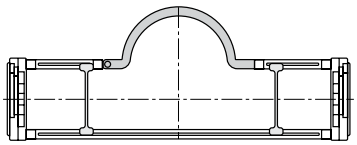
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



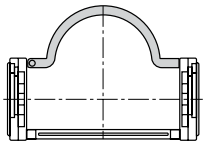

## Extender crossbars - For careful guiding of large diameter cables and hoses

- Intended for cables and hoses with a maximum outer diameter of 4.53 in. (115 mm).
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**



**Round extender crossbar combined with standard snap-open crossbars.**

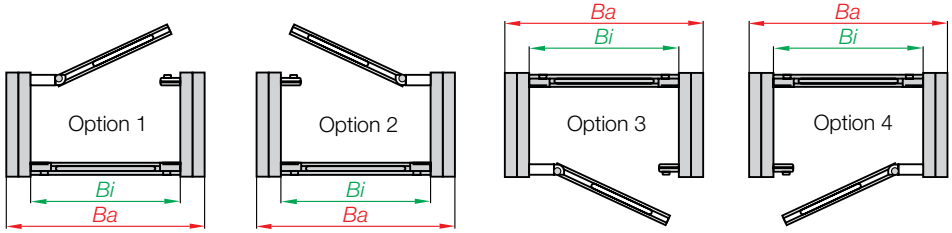


**Attached directly to the side link.**

| Part No. | Max Ø Hose in. (mm) | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **385-15-RHD115** | 4.53 (115) | Round | No | Yes |
| **385-18-RD115** | 4.53 (115) | Round | Yes | No |

## Hinged crossbars

- Typically, E-Chain® crossbars are completely removable. In cases where it is preferable that the opening crossbars remain on the E-Chain®, a hinged design has been developed.
- Please consult igus® for design assistance

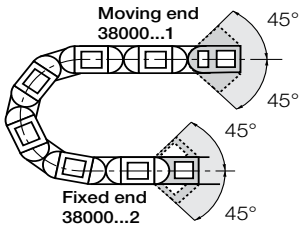


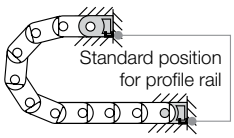
# E-Chain System® E4/100
# Series 380/390/R780
# Mounting Brackets - KMA

Standard

## Option 1: KMA pivoting

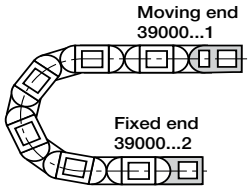
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

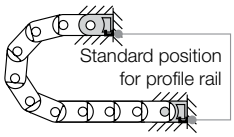




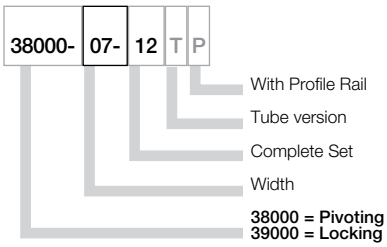

## Option 2: KMA locking

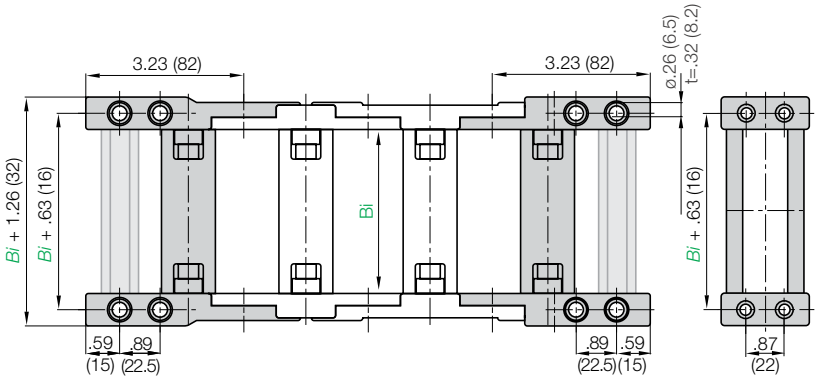
- Profile rail option
- Universal use
- Corrosion resistant
- Vertical hanging/standing travels
- Extreme accelerations






### Part Number Structure




**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 39000**

**Part No. Full Set** (pivoting)
**Series 380 or 390:**
**38000-Width-12**

**Part No. Full Set** (pivoting)
**with profile rail**
**Series 380 or 390**
**38000-Width-12P**

**Part No. Full Set** (pivoting)
**Tube Series R780**
**38000-Width-12T**

**Part No. Full Set** (pivoting)
**with Profile Rail**
**Series 780**
**38000-Width-12TP**

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05* | 38000 | 39000 | -05-12 | T | P | 1.97 (50) |
| -06 | 38000 | 39000 | -06-12 | | P | 2.68 (68) |
| -07 | 38000 | 39000 | -07-12 | T | P | 2.95 (75) |
| -087 | 38000 | 39000 | -087-12 | | P | 3.43 (87) |
| -10 | 38000 | 39000 | -10-12 | T | P | 3.94 (100) |
| -11 | 38000 | 39000 | -11-12 | T | P | 4.25 (108) |
| -112 | 38000 | 39000 | -112-12 | | P | 4.41 (112) |
| -12 | 38000 | 39000 | -12-12 | T | P | 4.92 (125) |
| -137 | 38000 | 39000 | -137-12 | | P | 5.39 (137) |
| -15 | 38000 | 39000 | -15-12 | T | P | 5.91 (150) |
| -162 | 38000 | 39000 | -162-12 | | P | 6.38 (162) |
| -17 | 38000 | 39000 | -17-12 | T | P | 6.61 (168) |
| -18 | 38000 | 39000 | -18-12 | | P | 6.89 (175) |
| -187 | 38000 | 39000 | -187-12 | | P | 7.36 (187) |
| -20 | 38000 | 39000 | -20-12 | T | P | 7.87 (200) |
| -212 | 38000 | 39000 | -212-12 | | P | 8.35 (212) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -23 | 38000 | 39000 | -23-12 | | P | 8.86 (225) |
| -237 | 38000 | 39000 | -237-12 | | P | 9.33 (237) |
| -25 | 38000 | 39000 | -25-12 | T | P | 9.84 (250) |
| -262 | 38000 | 39000 | -262-12 | | P | 10.31 (262) |
| -28 | 38000 | 39000 | -28-12 | | P | 10.83 (275) |
| -29 | 38000 | 39000 | -29-12 | | P | 11.30 (287) |
| -30 | 38000 | 39000 | -30-12 | T | P | 11.81 (300) |
| -312 | 38000 | 39000 | -312-12 | | P | 12.28 (312) |
| -325 | 38000 | 39000 | -325-12 | | P | 12.79 (325) |
| -337 | 38000 | 39000 | -337-12 | | P | 13.27 (337) |
| -350 | 38000 | 39000 | -350-12 | | P | 13.78 (350) |
| -362 | 38000 | 39000 | -362-12 | | P | 14.25 (362) |
| -375 | 38000 | 39000 | -375-12 | | P | 14.76 (375) |
| -387 | 38000 | 39000 | -387-12 | | P | 15.24 (387) |
| -400 | 38000 | 39000 | -400-12 | | P | 15.75 (400) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

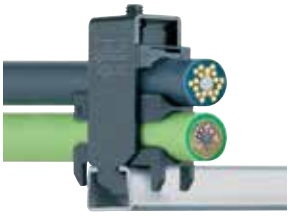
# E-Chain System® E4/100
# Series 380/390/R780
# Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

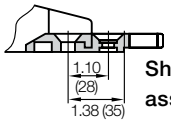
## Chainfix Clip

### Modular snap-on strain relief device

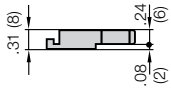
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

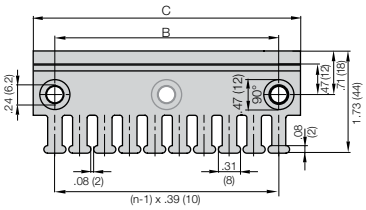



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3850-ZS | 5 | 1.89 | (48) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4/100
# Series 380/390/R780
# Guide Trough



Width of Crossbar
380-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.19 (81) | **93-50-200** |
| **-06** | 3.90 (99) | **93-50-225** |
| **-07** | 4.17 (106) | **93-50-225** |
| **-087** | 4.69 (119) | **93-50-250** |
| **-10** | 5.16 (131) | **93-50-250** |
| **-11** | 5.47 (139) | **93-50-250** |
| **-112** | 5.67 (144) | **93-50-275** |
| **-12** | 6.14 (156) | **93-50-275** |
| **-137** | 6.65 (169) | **93-50-300** |
| **-15** | 7.12 (181) | **93-50-300** |
| **-162** | 7.64 (194) | **93-50-325** |
| **-17** | 7.83 (199) | **93-50-325** |
| **-18** | 8.11 (206) | **93-50-325** |
| **-187** | 8.62 (219) | **93-50-350** |
| **-20** | 9.09 (231) | **93-50-350** |
| **-212** | 9.61 (244) | **93-50-375** |
| **-23** | 10.08 (256) | **93-50-375** |
| **-237** | 10.59 (269) | **93-50-400** |
| **-25** | 11.06 (281) | **93-50-400** |
| **-262** | 11.57 (294) | **93-50-425** |
| **-28** | 12.05 (306) | **93-50-425** |
| **-29** | 12.56 (319) | **93-50-450** |
| **-30** | 13.03 (331) | **93-50-450** |
| **-312** | 13.54 (344) | **93-50-475** |
| **-325** | 14.01 (356) | **93-50-475** |
| **-337** | 14.52 (369) | **93-50-500** |
| **-350** | 15.00 (381) | **93-50-500** |
| **-362** | 15.51 (394) | **93-50-525** |
| **-375** | 16.02 (407) | **93-50-525** |
| **-387** | 16.50 (419) | **93-50-550** |
| **-400** | 16.97 (431) | **93-50-550** |

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 93-30**
- 1/2 travel length of glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 93-50-XX**

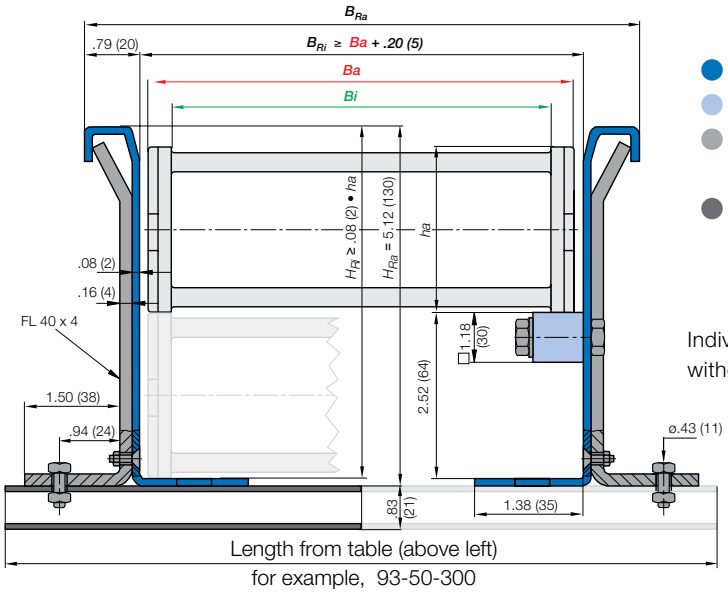
**-XX** indicates the length of the profile rail on which the guide trough is mounted. The values and part numbers are specified in the table below. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel

**Example:**
Length of travel 164 ft (50 m)
Center mounted
**Required guide troughs:**
164 ft (50 m) guide trough,
82 ft (25 m) glide bar
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 93-30**
= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

Required number of installation sets:
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **93-50-XXX**
Example: 93-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

Standard length profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 400/410/R880

**For new applications use Series E4-56**

## Price Index

Series 400 ●●●
Series 410 ●◑●
Series R880 ●●◑

## Special Features / Options

Low noise version E4/101 Series 401 available with special rubber pads

Clean-Room — Cleanroom test upon request

EX — ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 8.20 ft (2.5 m) |
| Rotary requires further calculation |

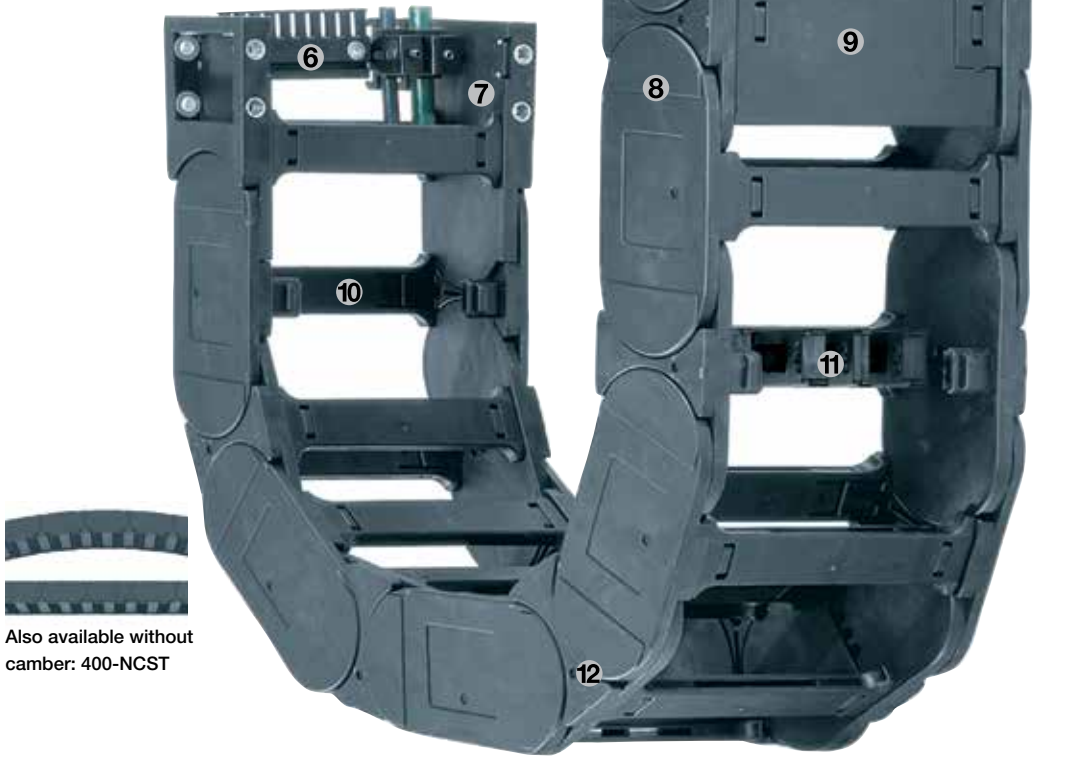
## Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When side-mounting with a long unsupported length is required
  ➤ **Series 4040/4041/R8840**
- When a simpler, low-cost solution is required
  ➤ **Series 14040/R18840**
- If an extreme vibration-free solution is required
  ➤ **Series 14040/R18840**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Crossbars on E-Chains® are removable along both radii
3. Stop dog with brake for noise reduction
4. Hinged snap-open removable lids along the outer radius
5. Optimized glide pads with lateral wear allowance
6. Integrated strain relief possible
7. Locking or pivoting mounting brackets available
8. Dirt-repellent exterior
9. Closed and open styles can be combined
10. Wide, rounded crossbars
11. Numerous interior separation possibilities
12. E-Chains® also available with reverse bending radius “RBR”






Also available without camber: 400-NCST

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

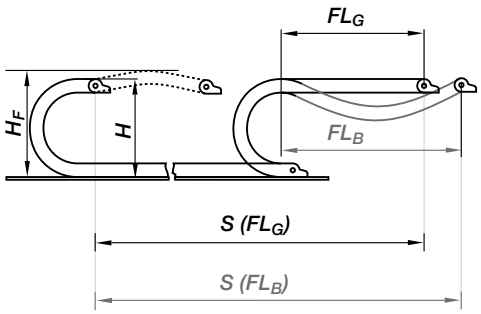
| | |
|---|---|
| 9.84 ft (3 m) **400-30-300-0** | **E-Chain®** |
| With 2 separators **411** assembled every 2nd link | **Interior separation** |
| 1 Set **40000-30-12P** | **Mounting bracket** |

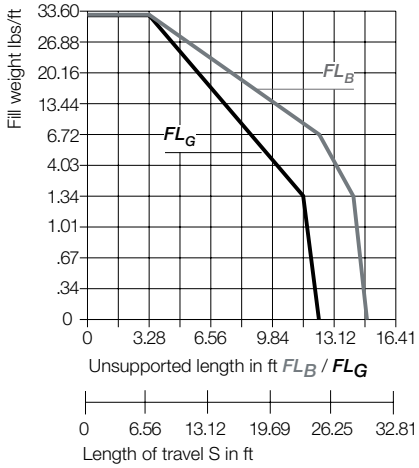
# E-Chain System® E4/100
# Series 400/410/R880
# Installation Dimensions

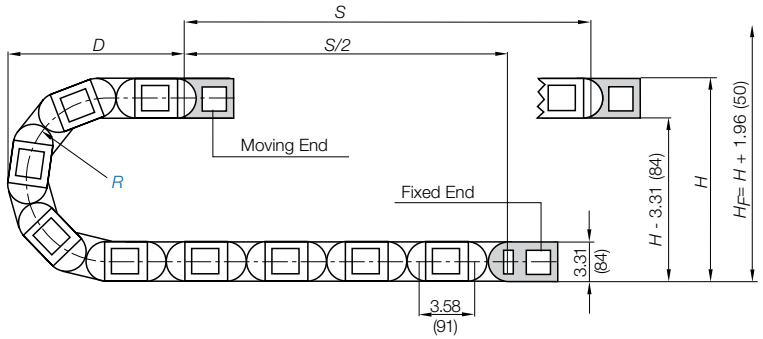
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ **Design, Chapter 1**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

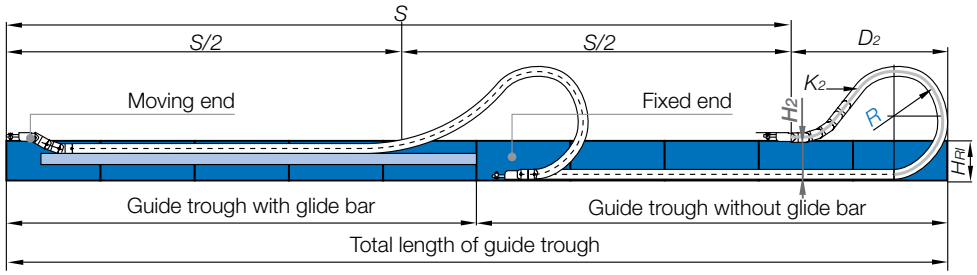
The required clearance height: $H_F = H + 1.96$ **in. (50 mm)** (with 2.02 lbs/ft (3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H^{*0}_{+25}$ | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 22.24 (565) | 23.03 (585) | 26.97 (685) | 30.91 (785) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 14.76 (375) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 40.16 (1020) | 41.34 (1050) | 48.23 (1225) | 52.76 (1340) | 57.09 (1450) | 69.88 (1775) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,312.4 ft. (400m)**

**For center mount applications:**
**Chain length: =** $\frac{S}{2} + K_2$




| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.68 (500) |
|---|---|---|---|---|---|---|---|---|---|---|
| H2 | - | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| D2 | - | 18.90 (480) | 23.62 (600) | 28.74 (730) | 36.22 (920) | 37.40 (950) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 74.80 (1900) |
| K2 | - | 32.24 (819) | 42.99 (1092) | 50.16 (1274) | 60.91 (1547) | 60.91 (1547) | 78.82 (2002) | 89.57 (2275) | 100.31(2548) | 128.98 (3276) |

For support of the lower run, **see Chapter 9** for the **Support Tray tool kit**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • *R + safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.
**Design, Chapter 1**

## Technical Data

Details of material properties
➤ **Design , Chapter 1**




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 400/410/R880

igus® E-Chain System®
Telephone 1-800-521-2747
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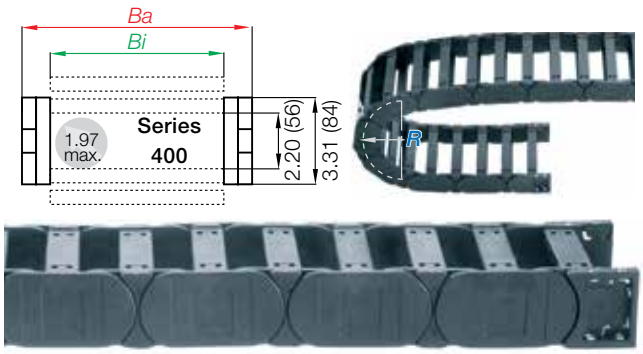
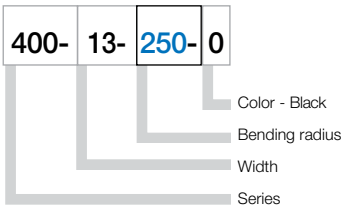
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 400 - E-Chain® with crossbars every link

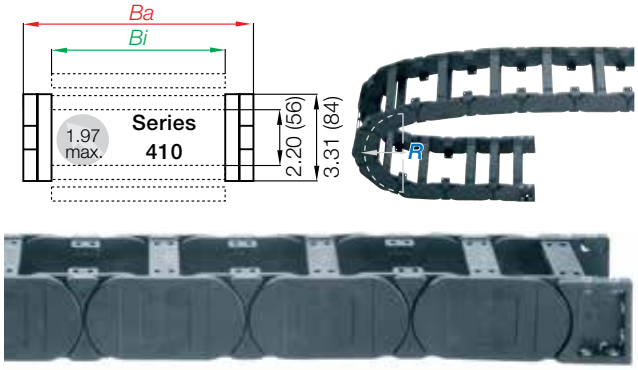



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

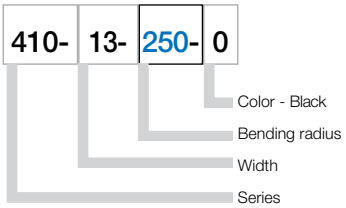



## Series 410 - E-Chain® with crossbars every other link

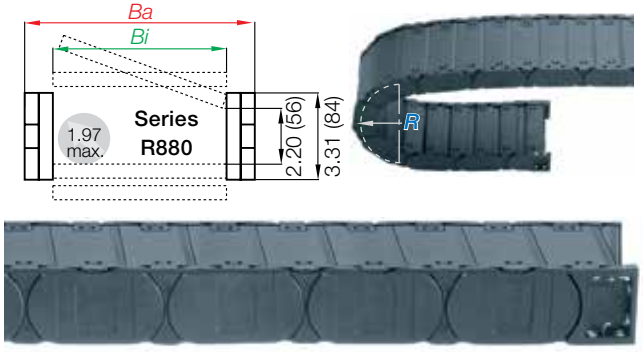



- Crossbars every other link
- Standard configuration
- For nearly every situation
- Can be opened from both sides
- Easy assembly
- Stable
- Cost-effective

**Part Number Structure**

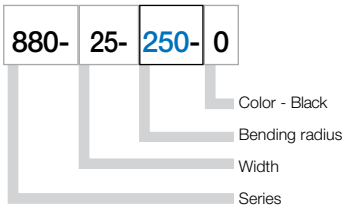



## Series R880 - fully enclosed E-Tube

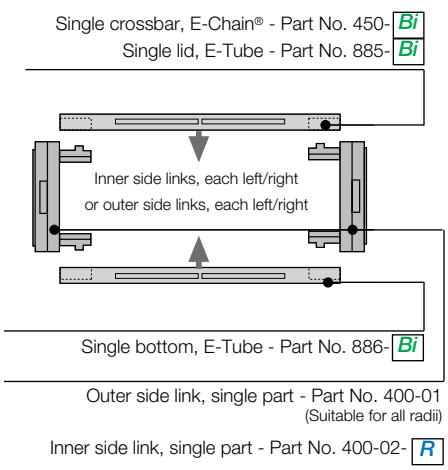


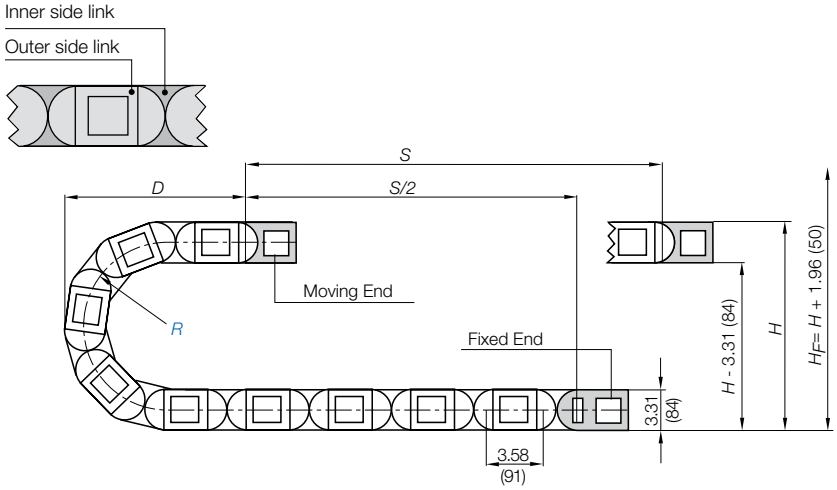

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates



# E-Chain System® E4/100
# Series 400/410/R880

Supplement part number with required radius. Example: 400-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)



| Part Number. Crossbars Every link | Crossbars Every other | Tube Version | | | *Bi* in. (mm) | *Ba* in. (mm) | 400 lbs/ft (kg/m) | 410 lbs/ft (kg/m) | R880 lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|
| 400-05- | 410-05- | | [ ] | -0 | 1.97 (50) | 3.31 (84) | ≈ 2.31 (3.44) | ≈ 2.10 (3.12) | – |
| 400-06- | 410-06- | | [ ] | -0 | 2.56 (65) | 3.90 (99) | ≈ 2.35 (3.50) | ≈ 2.15 (3.20) | – |
| 400-07- | 410-07- | 880-07- | [ ] | -0* | 2.95 (75) | 4.29 (109) | ≈ 2.37 (3.53) | ≈ 2.31 (3.44) | ≈ 2.67 (3.98) |
| 400-10- | 410-10- | 880-10- | [ ] | -0 | 3.94 (100) | 5.28 (134) | ≈ 2.49 (3.71) | ≈ 2.37 (3.53) | ≈ 2.87 (4.27) |
| 400-11- | 410-11 | - | [ ] | -0 | 4.41 (112) | 5.79 (147) | ≈ 2.58 (3.84) | ≈ 2.42 (3.60) | – |
| 400-12- | 410-12- | 880-12- | [ ] | -0 | 4.92 (125) | 6.26 (159) | ≈ 2.63 (3.91) | ≈ 2.44 (3.63) | ≈ 3.11 (4.63) |
| 400-13- | 410-13- | | [ ] | -0 | 5.39 (137) | 6.77 (172) | ≈ 2.72 (4.04) | ≈ 2.49 (3.70) | – |
| 400-15- | 410-15- | 880-15- | [ ] | -0 | 5.91 (150) | 7.24 (184) | ≈ 2.76 (4.10) | ≈ 2.51 (3.73) | ≈ 3.40 (5.06) |
| 400-16- | 410-16- | | [ ] | -0 | 6.38 (162) | 7.76 (197) | ≈ 2.83 (4.21) | ≈ 2.54 (3.78) | – |
| 400-17- | 410-17- | | [ ] | -0 | 6.89 (175) | 8.23 (209) | ≈ 2.90 (4.32) | ≈ 2.58 (3.84) | – |
| 400-18- | 410-18- | | [ ] | -0 | 7.36 (187) | 8.74 (222) | ≈ 2.98 (4.43) | ≈ 2.61 (3.89) | – |
| 400-20- | 410-20- | 880-20- | [ ] | -0 | 7.87 (200) | 9.21 (234) | ≈ 3.00 (4.46) | ≈ 2.63 (3.91) | ≈ 3.78 (5.63) |
| 400-21- | 410-21- | | [ ] | -0 | 8.35 (212) | 9.72 (247) | ≈ 3.07 (4.57) | ≈ 2.66 (3.96) | – |
| 400-22- | 410-22- | | [ ] | -0 | 8.86 (225) | 10.20 (259) | ≈ 3.11 (4.63) | ≈ 2.68 (3.99) | – |
| 400-23- | 410-23- | | [ ] | -0 | 9.33 (237) | 10.71 (272) | ≈ 3.20 (4.76) | ≈ 2.73 (4.06) | – |
| 400-25- | 410-25- | 880-25- | [ ] | -0 | 9.84 (250) | 11.18 (284) | ≈ 3.26 (4.85) | ≈ 2.76 (4.10) | ≈ 4.27 (6.36) |
| 400-26- | 410-26- | | [ ] | -0 | 10.31 (262) | 11.69 (297) | ≈ 3.32 (4.94) | ≈ 2.79 (4.15) | – |
| 400-27- | 410-27- | 880-27- | [ ] | -0 | 10.83 (275) | 12.17 (309) | ≈ 3.39 (5.05) | ≈ 2.82 (4.20) | ≈ 4.52 (6.72) |
| 400-28- | 410-28- | | [ ] | -0 | 11.30 (287) | 12.68 (322) | ≈ 3.41 (5.07) | ≈ 2.83 (4.21) | – |
| 400-30- | 410-30- | 880-30- | [ ] | -0 | 11.81 (300) | 13.15 (334) | ≈ 3.56 (5.29) | ≈ 2.90 (4.32) | ≈ 4.72 (7.02) |
| 400-31- | 410-31- | | [ ] | -0 | 12.28 (312) | 13.66 (347) | ≈ 3.56 (5.29) | ≈ 2.90 (4.32) | – |
| 400-32- | 410-32- | | [ ] | -0 | 12.79 (325) | 14.13 (359) | ≈ 3.62 (5.38) | ≈ 2.94 (4.37) | – |
| 400-33- | 410-33- | | [ ] | -0 | 13.27 (337) | 14.65 (372) | ≈ 3.74 (5.56) | ≈ 3.00 (4.46) | – |
| 400-35- | 410-35- | 880-35- | [ ] | -0 | 13.78 (350) | 15.12 (384) | ≈ 3.84 (5.71) | ≈ 3.04 (4.53) | ≈ 5.19 (7.72) |
| 400-36- | 410-36- | | [ ] | -0 | 14.25 (362) | 15.63 (397) | ≈ 3.84 (5.71) | ≈ 3.04 (4.53) | – |
| 400-37- | 410-37- | | [ ] | -0 | 14.76 (375) | 16.10 (409) | ≈ 3.85 (5.73) | ≈ 3.05 (4.54) | – |
| 400-38- | 410-38- | | [ ] | -0 | 15.24 (387) | 16.61 (422) | ≈ 3.91 (5.82) | ≈ 3.08 (4.59) | – |
| 400-40- | 410-40- | 880-40- | [ ] | -0 | 15.75 (400) | 17.09 (434) | ≈ 4.05 (6.02) | ≈ 3.15 (4.69) | ≈ 5.86 (8.72) |
| 400-41- | 410-41- | | [ ] | -0 | 16.22 (412) | 17.60 (447) | ≈ 4.15 (6.17) | ≈ 3.20 (4.76) | – |
| 400-42- | 410-42- | | [ ] | -0 | 16.73 (425) | 18.07 (459) | ≈ 4.25 (6.33) | ≈ 3.25 (4.84) | – |
| 400-43- | 410-43- | | [ ] | -0 | 17.20 (437) | 18.58 (472) | ≈ 4.29 (6.39) | ≈ 3.27 (4.87) | – |
| 400-45- | 410-45- | | [ ] | -0 | 17.72 (450) | 19.06 (484) | ≈ 4.34 (6.46) | ≈ 3.30 (4.91) | – |
| 400-46- | 410-46- | 880-46- | [ ] | -0 | 18.19 (462) | 19.57 (497) | ≈ 4.35 (6.48) | ≈ 3.31 (4.92) | ≈ 6.18 (9.19) |
| 400-47- | 410-47- | | [ ] | -0 | 18.70 (475) | 20.04 (509) | ≈ 4.44 (6.61) | ≈ 3.35 (4.98) | – |
| 400-48- | 410-48- | | [ ] | -0 | 19.17 (487) | 20.55 (522) | ≈ 4.47 (6.65) | ≈ 3.37 (5.01) | – |
| 400-50- | 410-50- | | [ ] | -0 | 19.69 (500) | 21.02 (534) | ≈ 4.53 (6.74) | ≈ 3.39 (5.05) | – |
| 400-51- | 410-51- | | [ ] | -0 | 20.16 (512) | 21.54 (547) | ≈ 4.55 (6.77) | ≈ 3.40 (5.06) | – |
| 400-52- | 410-52- | | [ ] | -0 | 20.67 (525) | 22.01 (559) | ≈ 4.58 (6.81) | ≈ 3.41 (5.08) | – |
| 400-53- | 410-53- | | [ ] | -0 | 21.14 (537) | 22.52 (572) | ≈ 4.68 (6.96) | ≈ 3.47 (5.16) | – |
| 400-55- | 410-55- | | [ ] | -0 | 21.65 (550) | 22.99 (584) | ≈ 5.01 (7.45) | ≈ 3.63 (5.40) | – |
| 400-60- | 410-60- | | [ ] | -0 | 23.62 (600) | 24.96 (634) | ≈ 5.14 (7.65) | ≈ 3.70 (5.50) | – |

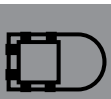
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 400-30-[300]-0

| | 135** | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|
| R | 5.31 (135) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
| H**+25 | 14.17 (360) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 22.24 (565) | 23.03 (585) | 26.97 (685) | 30.91 (785) | 34.84 (885) | 42.72 (1085) |
| D | 10.63 (270) | 11.22 (285) | 12.20 (310) | 13.19 (335) | 14.76 (375) | 15.16 (385) | 17.13 (435) | 19.09 (485) | 21.06 (535) | 25.00 (635) |
| K | 25.59 (650) | 29.53 (750) | 32.48 (825) | 35.43 (900) | 40.16 (1020) | 41.34 (1050) | 48.23 (1225) | 52.76 (1340) | 57.09 (1450) | 69.88 (1775) |

** This radius is not available for the R880 Series
*Removable lid only, no hinged option

0=Standard color black. For other colors see Chapter 1
For wider chains see page 6.305. For large diameter hoses see page 6.305

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain System® E4/100
# Series 400/410/R880
# Interior Separation



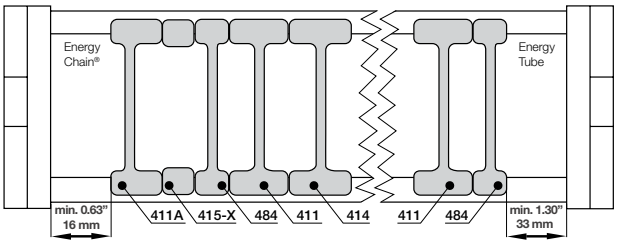
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Option 1: Vertical separators and spacers

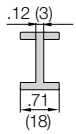
Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



Standard

**Vertical separator 401**

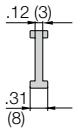



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 401** |
| Assembled | **Part No. 411** |

- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Vertical separator 483**

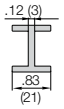



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 483** |
| Assembled | **Part No. 484** |

- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.

**Locking separator 404**

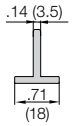



**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 404** |
| Assembled | **Part No. 414** |

- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

**Locking separator 406**

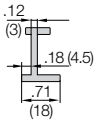



**Locking separator (tube only)**

| | |
|---|---|
| Unassembled | **Part No. 406** |
| Assembled | **Part No. 416** |

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar

**Asymmetric separator 401A**




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 401A** |
| Assembled | **Part No. 411A** |

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 405-XX**

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

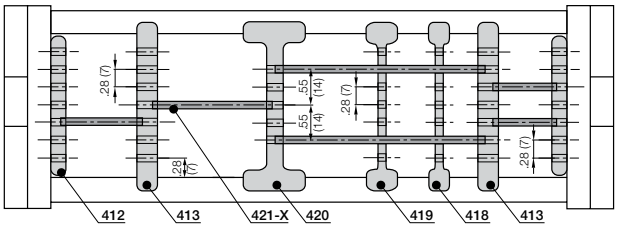
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | .79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

# E-Chain System® E4/100
# Series 400/410/R880
# Interior Separation

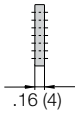
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.

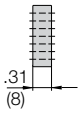



**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 402** |
| Assembled | **Part No. 412** |

**Side plate 402**

- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

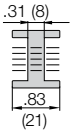



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 403** |
| Assembled | **Part No. 413** |

**Vertical separator 403**

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves

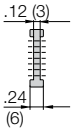



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 410** |
| Assembled | **Part No. 420** |

**Locking vertical separator 410**

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.

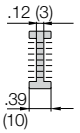



**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 408** |
| Assembled | **Part No. 418** |

**Closed slotted separator 408**

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 409** |
| Assembled | **Part No. 419** |

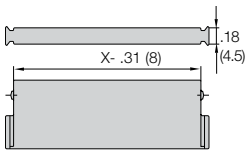
**Open slotted separator 409**

### Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

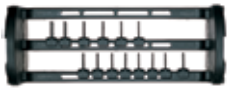
| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

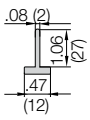
| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



**Center crossbar** - developed for applications involving a very large number of thin cables, individually separated. This offers the option of subdividing the E-Chain® into upper and lower halves, with mutually independent separators.

**Rollclip** - minimizes

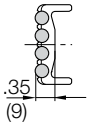





**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 405** |
| Assembled | **Part No. 415** |

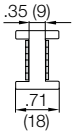
abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

**Roller separator** - performs a similar function to the Rollclip, but doubles as a separator. Consult igus® if you have any questions regarding the roller separator.




**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 429** |
| Assembled | **Part No. 430** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®

Telephone 1-800-521-2747
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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E4/100
# Series 400/410/R880
# Special Accessories

Part number example for E-Chain®

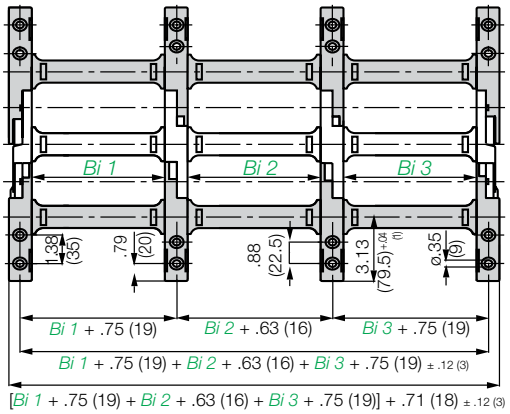
**400-10/20/10-** 200 **-0**

**400-*Bi1*/*Bi2*/*Bi3*-** *R* **-0**

We **strongly recommend** on-site consultation with an igus® technician for individual advice regarding mounting brackets, guide troughs and other design details.

## Extension links - for extremely wide E-Chains® up to 9.84 ft (3m)

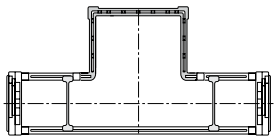
- For applications in which particularly high fill weights necessitate extremely wide E-Chains®
- The extension link design allows virtually limitless side-by-side attachment of chains
- The unsupported length of a chain can be increased when additional loads are required
- Extension links can be used with E-Chains®, E-Tubes or a combination of both
- They are suitable for unsupported and gliding applications in a guide trough
- E-Chains® with extension links are attached with KMA or steel mounting brackets.



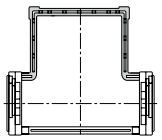
**Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.**

## Extender crossbars - For careful guiding of large diameter cables and hoses

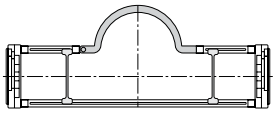
- Intended for cables and hoses with a maximum outer diameter of 9.65 in. (245 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



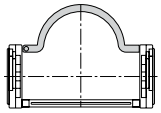
**Square extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**



**Round extender crossbar combined with standard snap-open crossbars.**



**Attached directly to the side link.**

| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | By request | Round | No | Yes |
| **450-17-RD115** | By request | Round | Yes | No |
| **450-25-D150** | By request | Square | Yes | No |
| **450-30-D200** | By request | Square | Yes | No |
| **450-35-D250** | By request | Square | Yes | No |
| **450-40-D300** | By request | Square | Yes | No |
| **450-20-HD150** | By request | Square | No | Yes |
| **450-25-HD200** | By request | Square | No | Yes |
| **450-30-HD250** | By request | Square | No | Yes |

## E4 clip on cable binder

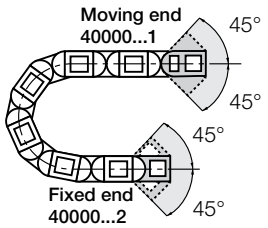
- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

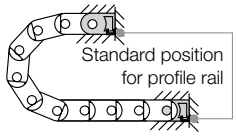
| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

# E-Chain System® E4/100
# Series 400/410/R880
# Mounting Brackets, KMA

## Option 1: pivoting

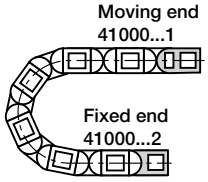
- Profile rail option
- Universal use
- Corrosion resistant
- Short and long travels
- Space-restricted conditions

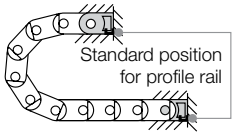




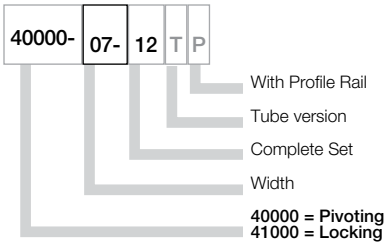

## Option 2: locking

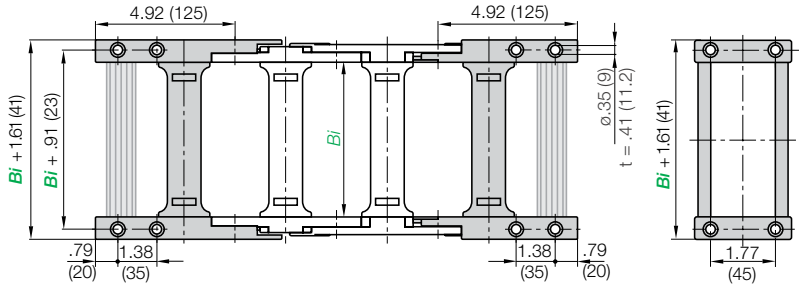
- Profile rail option
- Universal use
- Corrosion resistant
- Extreme accelerations
- Vertical hanging/standing travels






### Part Number Structure




**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**

**Part number examples are shown for pivoting brackets. For locking brackets change part number to 41000**

**Part No. Full Set** (pivoting)
**Series 400 or 410:**
**40000-Width-12**

**Part No. Full Set** (pivoting)
**with profile rail**
**Series 400 or 410**
**40000-Width-12P**

**Part No. Full Set** (pivoting)
**Tube Series R880**
**40000-Width-12T**

**Part No. Full Set** (pivoting)
**with Profile Rail**
**Series R880**
**40000-Width-12TP**

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -05 | 40000 | 41000 | -05-12 | | P | 1.97 (50) |
| -06 | 40000 | 41000 | -06-12 | | P | 2.56 (65) |
| -07 | 40000 | 41000 | -07-12 | T | P | 2.95 (75) |
| -10 | 40000 | 41000 | -10-12 | T | P | 3.94 (100) |
| -11 | 40000 | 41000 | -11-12 | | P | 4.41 (112) |
| -12 | 40000 | 41000 | -12-12 | T | P | 4.92 (125) |
| -13 | 40000 | 41000 | -13-12 | | P | 5.39 (137) |
| -15 | 40000 | 41000 | -15-12 | T | P | 5.91 (150) |
| -16 | 40000 | 41000 | -16-12 | | P | 6.38 (162) |
| -17 | 40000 | 41000 | -17-12 | | P | 6.89 (175) |
| -18 | 40000 | 41000 | -18-12 | | P | 7.36 (187) |
| -20 | 40000 | 41000 | -20-12 | T | P | 7.87 (200) |
| -21 | 40000 | 41000 | -21-12 | | P | 8.35 (212) |
| -22 | 40000 | 41000 | -22-12 | | P | 8.86 (225) |
| -23 | 40000 | 41000 | -23-12 | | P | 9.33 (237) |
| -25 | 40000 | 41000 | -25-12 | T | P | 9.84 (250) |
| -26 | 40000 | 41000 | -26-12 | | P | 10.31 (262) |
| -27 | 40000 | 41000 | -27-12 | T | P | 10.83 (275) |
| -28 | 40000 | 41000 | -28-12 | | P | 11.30 (287) |
| -30 | 40000 | 41000 | -30-12 | T | P | 11.81 (300) |
| -31 | 40000 | 41000 | -31-12 | | P | 12.28 (312) |

| Width | Part No. Full Set Pivoting | Part No. Full Set Locking | | Tube Option | With Profile Rail | *Bi* in. (mm) |
|---|---|---|---|---|---|---|
| -32 | 40000 | 41000 | -32-12 | | P | 12.79 (325) |
| -33 | 40000 | 41000 | -33-12 | | P | 13.27 (337) |
| -35 | 40000 | 41000 | -35-12 | T | P | 13.78 (350) |
| -36 | 40000 | 41000 | -36-12 | | P | 14.25 (362) |
| -37 | 40000 | 41000 | -37-12 | | P | 14.76 (375) |
| -38 | 40000 | 41000 | -38-12 | | P | 15.24 (387) |
| -40 | 40000 | 41000 | -40-12 | T | P | 15.75 (400) |
| -41 | 40000 | 41000 | -41-12 | | P | 16.22 (412) |
| -42 | 40000 | 41000 | -42-12 | | P | 16.73 (425) |
| -43 | 40000 | 41000 | -43-12 | | P | 17.20 (437) |
| -45 | 40000 | 41000 | -45-12 | | P | 17.72 (450) |
| -46 | 40000 | 41000 | -46-12 | T | P | 18.19 (462) |
| -47 | 40000 | 41000 | -47-12 | | P | 18.70 (475) |
| -48 | 40000 | 41000 | -48-12 | | P | 19.17 (487) |
| -50 | 40000 | 41000 | -50-12 | | P | 19.69 (500) |
| -51 | 40000 | 41000 | -51-12 | | P | 20.16 (512) |
| -52 | 40000 | 41000 | -52-12 | | P | 20.67 (525) |
| -53 | 40000 | 41000 | -53-12 | | P | 21.14 (537) |
| -55 | 40000 | 41000 | -55-12 | | P | 21.65 (550) |
| -60 | 40000 | 41000 | -60-12 | | P | 23.62 (600) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 400/410/R880
# Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

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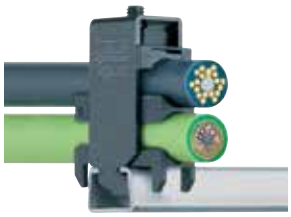
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Chainfix clamps for the profile rail



igus® Chainfix strain relief elements are available in either steel or stainless steel. They can be adjusted with a hexagon socket and are available in single, double and triple configurations.

| Part No. Single Clamp | | Part No. Double Clamp | | Part No. Triple Clamp | | Cable ø | |
|---|---|---|---|---|---|---|---|
| Steel | Stainless | Steel | Stainless | Steel | Stainless | in. | (mm) |
| CFX12-1 | CFX12-1E | CFX12-2 | CFX12-2E | CFX12-3 | – | .24 - .47 | (06 - 12) |
| CFX14-1 | CFX14-1E | CFX14-2 | CFX14-2E | CFX14-3 | – | .47 - .55 | (12 - 14) |
| CFX16-1 | CFX16-1E | CFX16-2 | CFX16-2E | CFX16-3 | – | .55 - .63 | (14 - 16) |
| CFX18-1 | CFX18-1E | CFX18-2 | CFX18-2E | CFX18-3 | – | .63 - .71 | (16 - 18) |
| CFX20-1 | CFX20-1E | CFX20-2 | CFX20-2E | CFX20-3 | – | .71 - .79 | (18 - 20) |
| CFX22-1 | CFX22-1E | CFX22-2 | CFX22-2E | CFX22-3 | – | .79 - .87 | (20 - 22) |
| CFX26-1 | CFX26-1E | CFX26-2 | CFX26-2E | – | – | .87 - 1.02 | (22 - 26) |
| CFX30-1 | CFX30-1E | CFX30-2 | CFX30-2E | – | – | 1.02 - 1.18 | (26 - 30) |
| CFX34-1 | CFX34-1E | CFX34-2 | CFX34-2E | – | – | 1.18 - 1.34 | (30 - 34) |
| CFX38-1 | CFX38-1E | – | – | – | – | 1.34 - 1.50 | (34 - 38) |
| CFX42-1 | CFX42-1E | – | – | – | – | 1.50 - 1.65 | (38 - 42) |

**For more information please refer to strain relief section of Chapter 10**

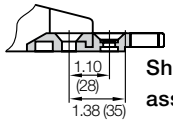
## Chainfix Clip

### Modular snap-on strain relief device

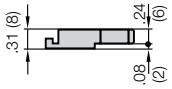
Chainfix clip is available for cable diameters ranging from .16" (4mm) to .94" (24 mm). It is suitable for assembly on KMA mounting brackets, clip-on strain relief for crossbars as well as profile rails. Quick assembly without the use of tools. **For more information please refer to strain relief section of Chapter 10**

| Cable ø | | Part No. | Part No. |
|---|---|---|---|
| in. | (mm) | Clamp | Bottom |
| .16-.31 | (04-08) | CFC-08-M | CFC-08-C |
| .31-.47 | (08-12) | CFC-12-M | CFC-12-C |
| .47-.63 | (12-16) | CFC-16-M | CFC-16-C |
| .63-.79 | (16-20) | CFC-20-M | CFC-20-C |
| .79-.94 | (20-24) | CFC-24-M | CFC-24-C |

## Tiewrap Plates




Shown assembled

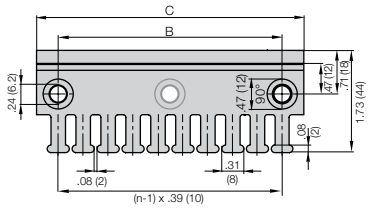



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| 3050-ZB | 5 | 1.97 (50) | 1.18 (30) | no |
| 3075-ZB | 7 | 2.95 (75) | 2.16 (55) | no |
| 3100-ZB | 10 | 3.94 (100) | 3.15 (80) | no |
| 3115-ZB | 11 | 4.53 (115) | 3.74 (95) | no |
| 3125-ZB | 12 | 4.92 (125) | 4.13 (105) | no |
| 3150-ZB | 15 | 5.91 (150) | 5.12 (130) | no |
| 3175-ZB | 17 | 6.89 (175) | 6.10 (155) | no |
| 3200-ZB | 20 | 7.87 (200) | 7.09 (180) | yes |
| 3225-ZB | 22 | 8.86 (225) | 8.07 (205) | yes |
| 3250-ZB | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add "KMA" to the end of the part number.
**Example: 3050-ZBKMA**

**For more information please refer to strain relief section of Chapter 10**

### Option 2:
### Clip-on Tiewrap plates

Available as a clip-on tiewrap plate without the use of bolts They are inserted and removed with a screwdriver used as a lever. Clip-on tiewrap plates are also available as an attachment to the opening crossbars.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For more information please refer to strain relief section of Chapter 10**

### Option 3:
### Clip-on Tiewrap plates for opening crossbars

Clip-on tiewrap plates are also available as an attachment to opening crossbars. They can be positioned at any point along the E-Chain®.

| Part No. | Number of Teeth | Width of Strain Relief in. | (mm) |
|---|---|---|---|
| 4550-ZS | 5 | 1.89 | (48) |
| 4575-ZS | 7 | 2.91 | (74) |

**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4/100
# Series 400/410/R880
# Guide Trough



Width of Crossbar
400-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 3.50 (89) | * |
| **-06** | 4.09 (104) | **94-50-225** |
| **-07** | 4.49 (114) | **94-50-225** |
| **-10** | 5.47 (139) | **94-50-250** |
| **-11** | 5.98 (152) | **94-50-275** |
| **-12** | 6.46 (164) | **94-50-275** |
| **-13** | 6.97 (177) | **94-50-300** |
| **-15** | 7.44 (189) | **94-50-300** |
| **-16** | 7.95 (202) | **94-50-325** |
| **-17** | 8.42 (214) | **94-50-325** |
| **-18** | 8.94 (227) | **94-50-350** |
| **-20** | 9.41 (239) | **94-50-350** |
| **-21** | 9.92 (252) | **94-50-375** |
| **-22** | 10.39 (264) | **94-50-375** |
| **-23** | 10.91 (277) | **94-50-400** |
| **-25** | 11.38 (289) | **94-50-400** |
| **-26** | 11.89 (302) | **94-50-425** |
| **-27** | 12.36 (314) | **94-50-425** |
| **-28** | 12.87 (327) | **94-50-450** |
| **-30** | 13.35 (339) | **94-50-450** |
| **-31** | 13.86 (352) | **94-50-475** |
| **-32** | 14.33 (364) | **94-50-475** |
| **-33** | 14.84 (377) | **94-50-500** |
| **-35** | 15.31 (389) | **94-50-500** |
| **-36** | 15.82 (402) | **94-50-525** |
| **-37** | 16.30 (414) | **94-50-525** |
| **-38** | 16.81 (427) | **94-50-550** |
| **-40** | 17.28 (439) | **94-50-550** |
| **-41** | 17.79 (452) | **94-50-575** |
| **-42** | 18.27 (464) | **94-50-575** |
| **-43** | 18.78 (477) | **94-50-600** |
| **-45** | 19.25 (489) | **94-50-600** |
| **-46** | 19.76 (502) | **94-50-625** |
| **-47** | 20.24 (514) | **94-50-625** |
| **-48** | 20.75 (527) | **94-50-650** |
| **-50** | 21.22 (539) | **94-50-650** |
| **-51** | 21.73 (552) | **94-50-675** |
| **-52** | 22.20 (564) | **94-50-675** |
| **-53** | 22.72 (577) | **94-50-700** |
| **-55** | 23.19 (589) | **94-50-700** |
| **-60** | 25.16 (639) | **94-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2m). The required overall length of the guide trough directly correlates to the length of travel.

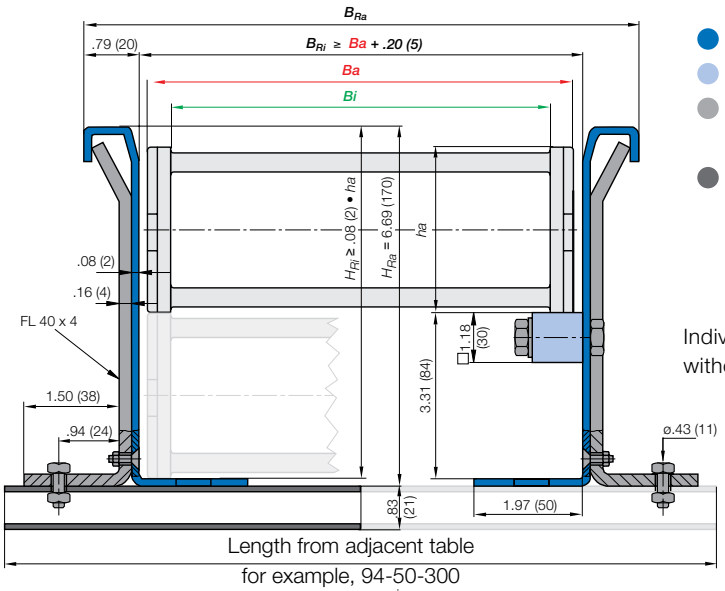
**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars

= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**

= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail




Length from adjacent table
for example, 94-50-300

- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 640

4.41”

## Price Index

Series 640

## Special Features / Options

This E4 Series is a low-noise version

Cleanroom test upon request

ESD classification: Electrically conductive ESD/ ATEX version upon request

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 13.12 ft (4 m) |
| Rotary requires further calculation |

## Usage Guidelines

- When quiet operation is required
- When very high speeds and/or accelerations are required
- For long travels
- For high fill weights

- When a simpler, low-cost solution is required
  ➤ **Series 1640**
- If higher stability is required
  ➤ **Series 600/601/R608**
- If an enclosed solution is required
  ➤ **Series R608**

## Features & Benefits

1. Crossbars on E-Chains® are removable along both radii
2. Dirt-repellent exterior
3. Optimum ratio of inner height to outer height
4. Numerous interior separation possibilities
5. Optimized glide pads with lateral wear allowance
6. Wide, rounded crossbars
7. Stop dog with brake for noise reduction
8. E-Chains® also available with reverse bending radius “RBR”

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 13.12 ft (4 m) **640-33-300-0** | **E-Chain®** |
| With 2 separators **6411** assembled every 2nd link | **Interior Separation** |
| 1 Set **6000-12** | **Mounting Bracket** |

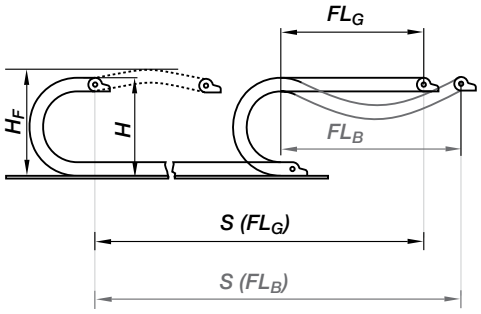
# E-Chain System® E4/100
# Series 640
# Installation Dimensions

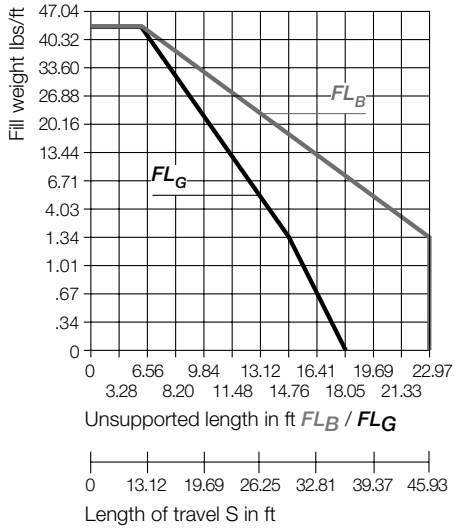
**Short travel, unsupported length**

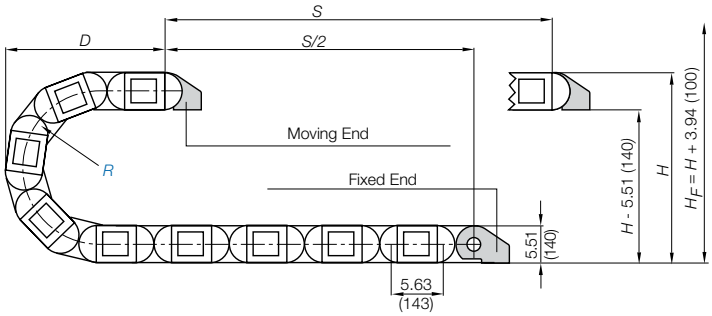
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 5.63" (143 mm)
**Links per ft (m): =** 2.13 (7)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = $\pi \bullet R$ + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

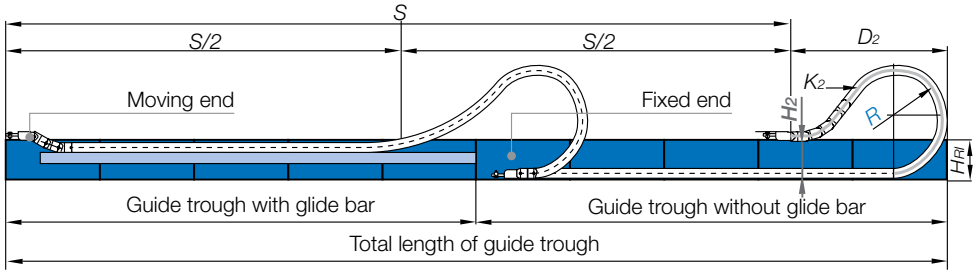
The required clearance height: **$H_F = H$ + 3.94 in. (100 mm)** (with 3.36 lbs/ft (5 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| H | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| D | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| K | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) | 104.72 (2660) | 135.24 (3435) |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10 m) to max. 1,476 ft. (450 m)**

**For center mount applications:**
**Chain length: =** $^{S}/_{2} + K_2$




## Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | 12.80 (325) | - |
| $D_{2\,+20}$ | 31.50 (800) | 35.43 (900) | 43.31 (1100) | 47.24 (1200) | 56.30 (1430) | 62.20 (1580) | 66.93 (1700) | 72.83 (1850) | 80.71 (2050) | 112.20 (2850) | - |
| $K_2$ | 50.67 (1287) | 56.30 (1430) | 73.19 (1859) | 84.45 (2145) | 101.33 (2574) | 112.60 (2860) | 123.86 (3146) | 135.12 (3432) | 152.01 (3861) | 197.05 (5005) | - |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties

➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

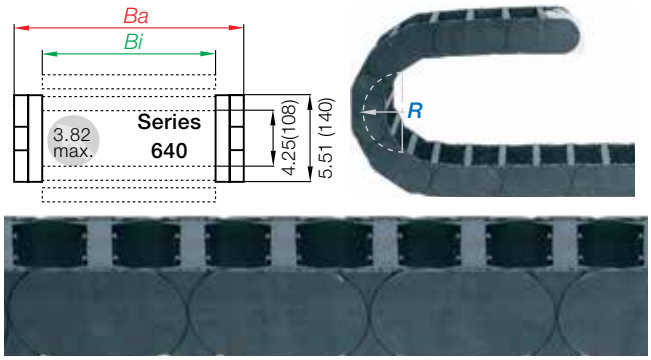
# E-Chain System® E4/100
# Series 640



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 600 - E-Chain® with crossbars every link



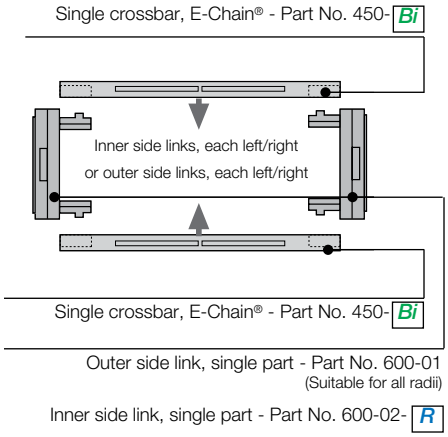

- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

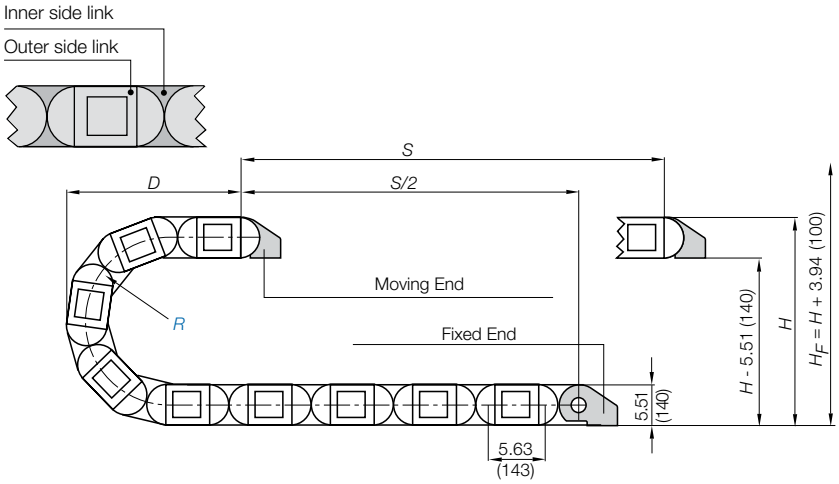
**Part Number Structure**

| 640- | 33- | 300- | 0 |
|---|---|---|---|

Color - Black
Bending radius
Width
Series

## E-Chain® as separate parts, links and side plates



# E-Chain System® E4/100
# Series 640

Supplement part number with required radius. Example: 640-33-300-0
Pitch: 5.63 in. (143 mm) per link links/ft (m) = 2.13 (7)

| Part Number. Crossbars Every link | | | *Bi* in. (mm) | *Ba* in. (mm) | 640 lbs/ft (kg/m) |
|---|---|---|---|---|---|
| 640-12- | | -0 | 3.43 (87) | 5.47 (139) | ≈ 5.09 (7.57) |
| 640-13- | | -0 | 3.90 (99) | 5.98 (152) | ≈ 5.15 (7.66) |
| 640-15- | | -0 | 4.41 (112) | 6.46 (164) | ≈ 5.17 (7.70) |
| 640-16- | | -0 | 4.88 (124) | 6.97 (177) | ≈ 5.22 (7.77) |
| 640-17- | | -0 | 5.39 (137) | 7.44 (189) | ≈ 5.27 (7.84) |
| 640-18- | | -0 | 5.87 (149) | 7.95 (202) | ≈ 5.32 (7.91) |
| 640-20- | | -0 | 6.38 (162) | 8.43 (214) | ≈ 5.32 (7.92) |
| 640-21- | | -0 | 6.85 (174) | 8.94 (227) | ≈ 5.37 (7.99) |
| 640-22- | | -0 | 7.36 (187) | 9.41 (239) | ≈ 5.40 (8.04) |
| 640-23- | | -0 | 7.83 (199) | 9.92 (252) | ≈ 5.46 (8.12) |
| 640-25- | | -0 | 8.35 (212) | 10.39 (264) | ≈ 5.50 (8.18) |
| 640-26- | | -0 | 8.82 (224) | 10.91 (277) | ≈ 5.53 (8.23) |
| 640-27- | | -0 | 9.33 (237) | 11.38 (289) | ≈ 5.58 (8.30) |
| 640-28- | | -0 | 9.80 (249) | 11.89 (302) | ≈ 5.59 (8.32) |
| 640-30- | | -0 | 10.31 (262) | 12.36 (314) | ≈ 5.69 (8.39) |
| 640-31- | | -0 | 10.79 (274) | 12.87 (327) | ≈ 5.69 (8.46) |
| 640-32- | | -0 | 11.30 (287) | 13.35 (339) | ≈ 5.73 (8.51) |
| 640-33- | | -0 | 11.81 (300) | 13.86 (352) | ≈ 5.79 (8.62) |
| 640-35- | | -0 | 12.28 (312) | 14.33 (364) | ≈ 5.86 (8.68) |
| 640-36- | | -0 | 12.76 (324) | 14.84 (377) | ≈ 5.86 (8.72) |
| 640-37- | | -0 | 13.27 (337) | 15.31 (389) | ≈ 5.87 (8.74) |
| 640-38- | | -0 | 13.74 (349) | 15.83 (402) | ≈ 5.91 (8.79) |
| 640-40- | | -0 | 14.25 (362) | 16.30 (414) | ≈ 5.99 (8.92) |
| 640-41- | | -0 | 14.72 (374) | 16.81 (427) | ≈ 6.06 (9.02) |
| 640-42- | | -0 | 15.24 (387) | 17.28 (439) | ≈ 6.12 (9.11) |
| 640-43- | | -0 | 15.71 (399) | 17.80 (452) | ≈ 6.16 (9.16) |
| 640-45- | | -0 | 16.22 (412) | 18.27 (464) | ≈ 6.18 (9.20) |
| 640-46- | | -0 | 16.69 (424) | 18.78 (477) | ≈ 6.19 (9.21) |
| 640-47- | | -0 | 17.20 (437) | 19.25 (489) | ≈ 6.25 (9.26) |
| 640-48- | | -0 | 17.67 (449) | 19.76 (502) | ≈ 6.25 (9.30) |
| 640-50- | | -0 | 18.19 (462) | 20.24 (514) | ≈ 6.30 (9.38) |
| 640-51- | | -0 | 18.66 (474) | 20.75 (527) | ≈ 6.31 (9.39) |
| 640-52- | | -0 | 19.17 (487) | 21.22 (539) | ≈ 6.33 (9.42) |
| 640-53- | | -0 | 19.65 (499) | 21.73 (552) | ≈ 6.40 (9.52) |
| 640-55- | | -0 | 20.16 (512) | 22.20 (564) | ≈ 6.61 (9.83) |
| 640-60- | | -0 | 22.13 (562) | 24.17 (614) | ≈ 6.69 (9.95) |

Choose from the radii below for all of the above sizes

*Radius* (mm) Example: 640-33-300-0

| | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 750 | 1000 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 29.53 (750) | 39.37 (1000) |
| H | 21.46 (545) | 25.39 (645) | 29.33 (745) | 33.27 (845) | 37.20 (945) | 41.14 (1045) | 45.08 (1145) | 49.02 (1245) | 52.95 (1345) | 64.76 (1645) | 84.45 (2145) |
| D | 16.34 (415) | 18.31 (465) | 20.27 (515) | 22.24 (565) | 24.21 (615) | 26.18 (665) | 28.15 (715) | 30.12 (765) | 32.09 (815) | 37.99 (965) | 47.83 (1215) |
| K | 36.22 (920) | 42.52 (1080) | 48.82 (1240) | 55.12 (1400) | 61.42 (1560) | 67.72 (1720) | 73.62 (1870) | 79.53 (2020) | 85.63 (2175) | 104.72 (2660) | 135.24 (3435) |

0=Standard color black. For other colors see Chapter 1
. For large diameter hoses see page 6.315

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 640
# Interior Separation



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

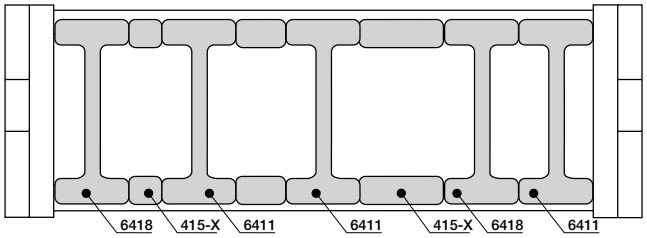
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

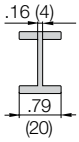
Exception: Minimum spacing

Locking separator 6008 = .91" (23 mm)



Standard

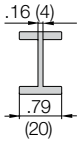
**Vertical separator 6401**




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 6401** |
| Assembled | **Part No. 6411** |

- **Standard separator 6401 for E-Chains®**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

**Locking separator 6408**




| Locking separator (chain only) | |
|---|---|
| Unassembled | **Part No. 6408** |
| Assembled | **Part No. 6418** |

- **Locking separator 6408 for E-Chains®**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

**Spacers 405-XX**

- NOTE ON SPACERS
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

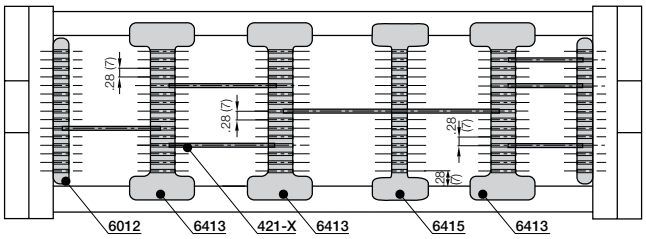
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| 405 -10 | 415 -10 | .39" | (10) |
| 405 -15 | 415 -15 | .59" | (15) |
| 405 -20 | 415 -20 | 79" | (20) |
| 405 -30 | 415 -30 | 1.18" | (30) |
| 405 -40 | 415 -40 | 1.57" | (40) |

# E-Chain System® E4/100
# Series 640
# Interior Separation

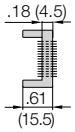
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.




- **Side plates 6002**
  This component is used to form the basic pattern of a shelf system.

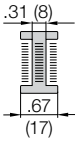



**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 6002** |
| Assembled | **Part No. 6012** |

Side plate 6002

- **Vertical separator 6403**
  This component is used to form the basic pattern of a shelf system.

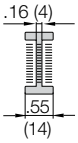



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 6403** |
| Assembled | **Part No. 6413** |

Vertical separator 6403

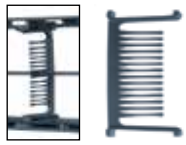
- **Slotted separator 6405**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 13 middle slots




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 6405** |
| Assembled | **Part No. 6415** |

Open slotted separator 6405

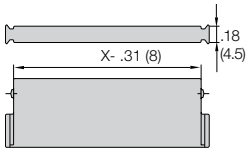


**Shelves 420-XX**

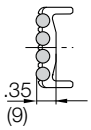
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

| Width X in. | Width X (mm) | Usable Width in. | Usable Width (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

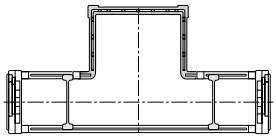
# E-Chain System® E4/100
# Series 640
# Special Accessories

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

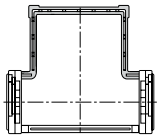
Consult igus® for your extender crossbar applications. We will be happy to assist you with your design layout.

## Extender crossbars - For careful guiding of large diameter cables and hoses

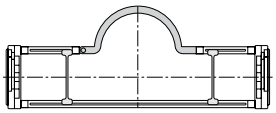
- Intended for cables and hoses with a maximum outer diameter of 11.81 in. (300 mm).
- Can be attached along either the inner or outer radius, inner radius preferred
- Gliding operation with crossbars assembled along the outer radius in conjunction with a special guide trough
- Gliding operation not guaranteed with crossbars assembled along the inner radius
- The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.



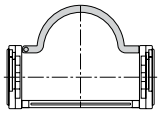
Square extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.



Round extender crossbar combined with standard snap-open crossbars.



Attached directly to the side link.

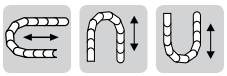
| Part No. | Max Ø Hose | Style | Installation Side Link | Combined with Snap-Open Crossbars |
|---|---|---|---|---|
| **450-15-RHD115** | By request | Round | No | Yes |
| **450-17-RD115** | By request | Round | Yes | No |
| **450-25-D150** | By request | Square | Yes | No |
| **450-30-D200** | By request | Square | Yes | No |
| **450-35-D250** | By request | Square | Yes | No |
| **450-40-D300** | By request | Square | Yes | No |
| **450-20-HD150** | By request | Square | No | Yes |
| **450-25-HD200** | By request | Square | No | Yes |
| **450-30-HD250** | By request | Square | No | Yes |

## E4 clip on cable binder

- For side mounted applications
- Serves as a clip-on, lateral guide for hoses and cables on E-Chains®
- The loops can be adjusted as needed
- Compatible with many E4 E-Chains®
- Economical
- One clip and one locking band are needed for each chain link

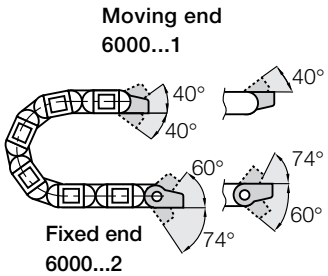
| Part No. | Form |
|---|---|
| **450-B12** | Locking clip, comprised of a locking element |
| **450-B12-200** | Locking band, comprised of a locking element and band; 12 x 1.5 x 200 mm |

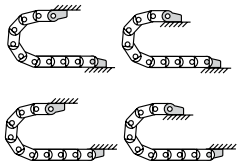
# E-Chain System® E4/100
# Series 640
# Mounting Brackets - Steel



## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive





Possible installation configurations -

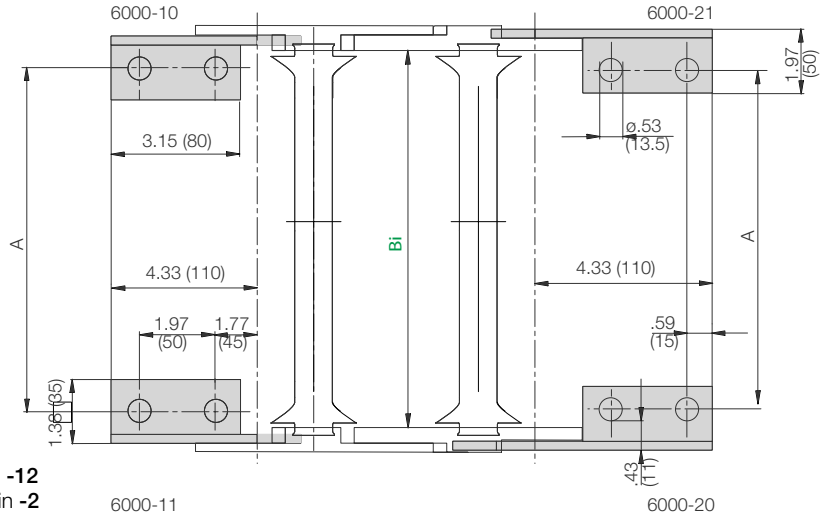
**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 640
**6000-12**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 640
**6000-1**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 640
**6000-2**

**Due to the design of the E4/100 series chains, please note the following when ordering brackets:**

**Even number of links =** full set, part number ending in **-12**
**Odd number of links =** 2 pieces, part number ending in **-2**




## Bracket Mounting Dimensions

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 3.43 (87) | 6000 | -12 | -1 | -2 | 2.24 (57) |
| 3.90 (99) | 6000 | -12 | -1 | -2 | 2.72 (69) |
| 4.41 (112) | 6000 | -12 | -1 | -2 | 3.23 (82) |
| 4.88 (124) | 6000 | -12 | -1 | -2 | 3.70 (94) |
| 5.39 (137) | 6000 | -12 | -1 | -2 | 4.21 (107) |
| 5.87 (149) | 6000 | -12 | -1 | -2 | 4.69 (119) |
| 6.38 (162) | 6000 | -12 | -1 | -2 | 5.20 (132) |
| 6.85 (174) | 6000 | -12 | -1 | -2 | 5.67 (144) |
| 7.36 (187) | 6000 | -12 | -1 | -2 | 6.18 (157) |
| 7.83 (199) | 6000 | -12 | -1 | -2 | 6.65 (169) |
| 8.35 (212) | 6000 | -12 | -1 | -2 | 7.16 (182) |
| 8.82 (224) | 6000 | -12 | -1 | -2 | 7.64 (194) |
| 9.33 (237) | 6000 | -12 | -1 | -2 | 8.15 (207) |
| 9.80 (249) | 6000 | -12 | -1 | -2 | 8.62 (219) |
| 10.31 (262) | 6000 | -12 | -1 | -2 | 9.13 (232) |
| 10.79 (274) | 6000 | -12 | -1 | -2 | 9.61 (244) |
| 11.30 (287) | 6000 | -12 | -1 | -2 | 10.12 (257) |
| 11.77 (299) | 6000 | -12 | -1 | -2 | 10.59 (269) |

| Width of Chain *Bi* | Mounting Brackets Part Number | Full Set | Moving End Only | Fixed End Only | Mounting Dimension A in. (mm) |
|---|---|---|---|---|---|
| 12.28 (312) | 6000 | -12 | -1 | -2 | 11.10 (282) |
| 12.76 (324) | 6000 | -12 | -1 | -2 | 11.57 (294) |
| 13.27 (337) | 6000 | -12 | -1 | -2 | 12.09 (307) |
| 13.74 (349) | 6000 | -12 | -1 | -2 | 12.56 (319) |
| 14.25 (362) | 6000 | -12 | -1 | -2 | 13.07 (332) |
| 14.72 (374) | 6000 | -12 | -1 | -2 | 13.54 (344) |
| 15.24 (387) | 6000 | -12 | -1 | -2 | 14.06 (357) |
| 15.71 (399) | 6000 | -12 | -1 | -2 | 14.53 (369) |
| 16.22 (412) | 6000 | -12 | -1 | -2 | 15.04 (382) |
| 16.69 (424) | 6000 | -12 | -1 | -2 | 15.51 (394) |
| 17.20 (437) | 6000 | -12 | -1 | -2 | 16.02 (407) |
| 17.68 (449) | 6000 | -12 | -1 | -2 | 16.49 (419) |
| 18.19 (462) | 6000 | -12 | -1 | -2 | 17.01 (432) |
| 18.66 (474) | 6000 | -12 | -1 | -2 | 17.48 (444) |
| 19.17 (487) | 6000 | -12 | -1 | -2 | 17.99 (457) |
| 19.65 (499) | 6000 | -12 | -1 | -2 | 18.46 (469) |
| 20.16 (512) | 6000 | -12 | -1 | -2 | 18.98 (482) |
| 22.13 (562) | 6000 | -12 | -1 | -2 | 20.94 (532) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/100
# Series 640
# Guide Trough



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Width of Crossbar
640-**12**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-12** | 5.67 (144) | **97-50-275** |
| **-13** | 6.18 (157) | **97-50-275** |
| **-15** | 6.65 (169) | **97-50-300** |
| **-16** | 7.16 (182) | **97-50-300** |
| **-17** | 6.46 (164) | **97-50-325** |
| **-18** | 8.15 (207) | **97-50-325** |
| **-20** | 8.62 (219) | **97-50-350** |
| **-21** | 9.13 (232) | **97-50-350** |
| **-22** | 9.61 (244) | **97-50-375** |
| **-23** | 10.12 (257) | **97-50-375** |
| **-25** | 10.59 (269) | **97-50-400** |
| **-26** | 11.10 (282) | **97-50-400** |
| **-27** | 11.57 (294) | **97-50-425** |
| **-28** | 12.09 (307) | **97-50-425** |
| **-30** | 12.56 (319) | **97-50-450** |
| **-31** | 13.07 (332) | **97-50-450** |
| **-32** | 13.54 (344) | **97-50-475** |
| **-33** | 14.06 (357) | **97-50-475** |
| **-35** | 14.53 (369) | **97-50-500** |
| **-36** | 15.04 (382) | **97-50-500** |
| **-37** | 15.51 (394) | **97-50-525** |
| **-38** | 16.02 (407) | **97-50-525** |
| **-40** | 16.50 (419) | **97-50-550** |
| **-41** | 17.01 (432) | **97-50-550** |
| **-42** | 17.48 (444) | **97-50-575** |
| **-43** | 17.99 (457) | **97-50-575** |
| **-45** | 18.46 (469) | **97-50-600** |
| **-46** | 18.98 (482) | **97-50-600** |
| **-47** | 19.45 (494) | **97-50-625** |
| **-48** | 19.96 (507) | **97-50-625** |
| **-50** | 20.43 (519) | **97-50-650** |
| **-51** | 20.94 (532) | **97-50-650** |
| **-52** | 21.42 (544) | **97-50-675** |
| **-53** | 21.93 (557) | **97-50-675** |
| **-55** | 22.40 (569) | **97-50-700** |
| **-60** | 24.37 (619) | **97-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 97-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 97-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

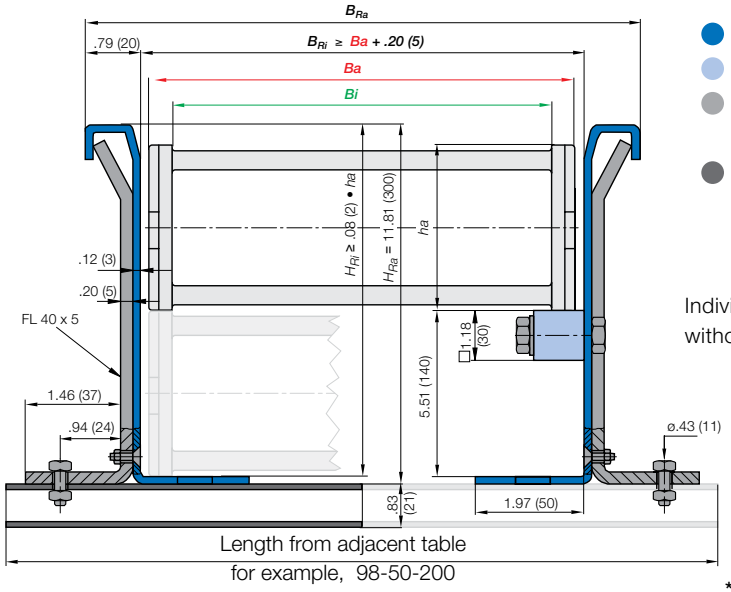
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 97-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **97-50-XXX**
Example:
97-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

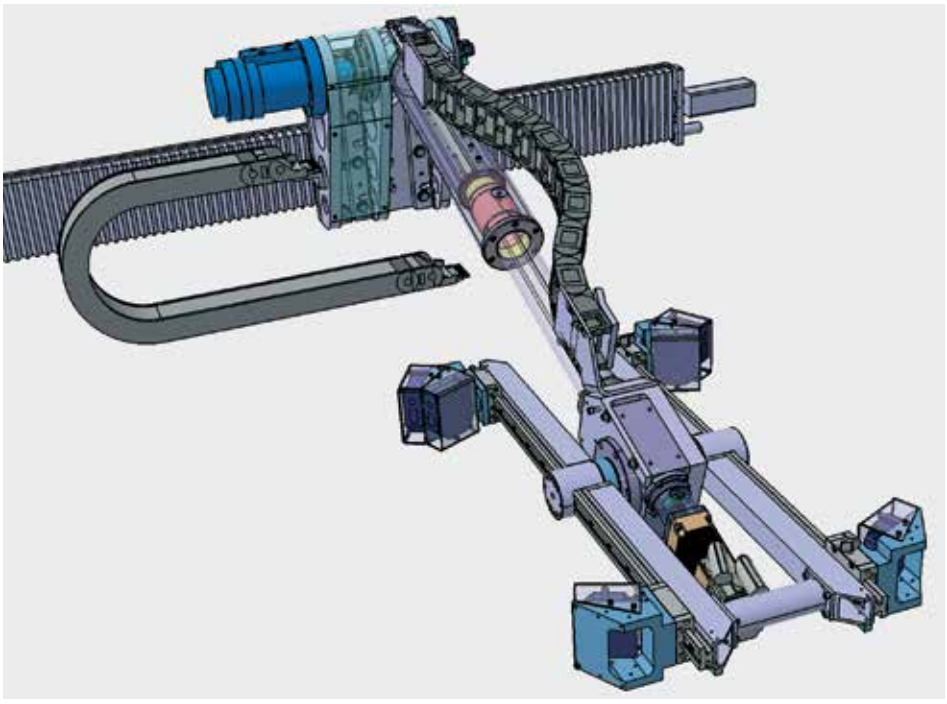
**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

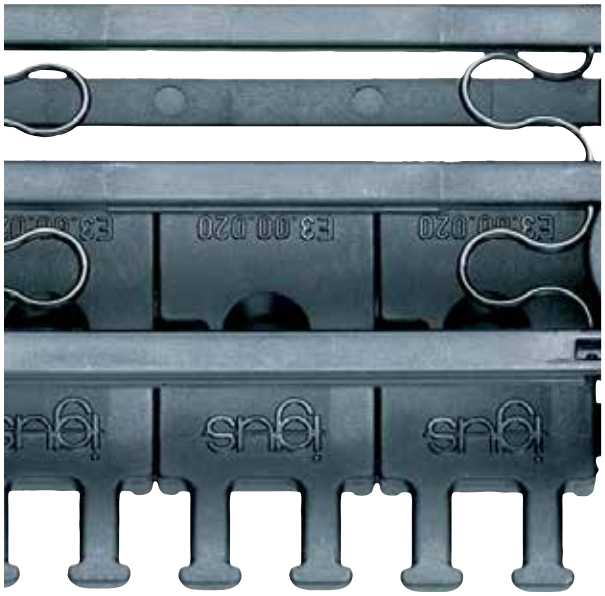
* Specialized guide trough available upon request



Friction welding machine - Special E4/00 version bend in two directions

igus®

# System E3...
# E6...
# T3...

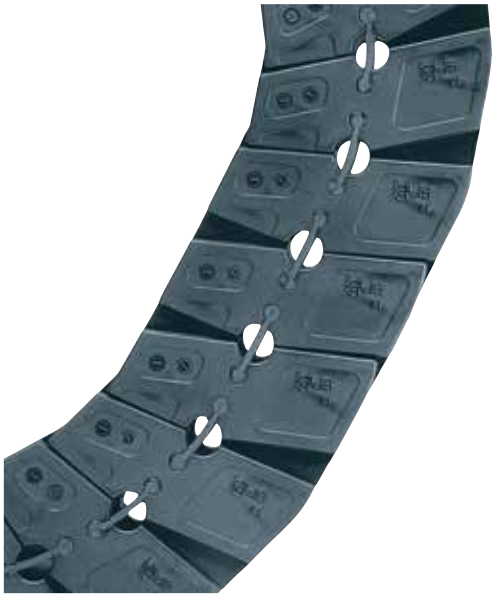


## System E3 - Elastic, dampening connector strip replaces pins and bores

- Extremely low noise E-Chain® for small spaces with modular 3-piece link design
- 3 sizes available
- Inner heights: .39” (10 mm), .59” (15 mm), .87” (22 mm)

**System E3 ➤**

# E3

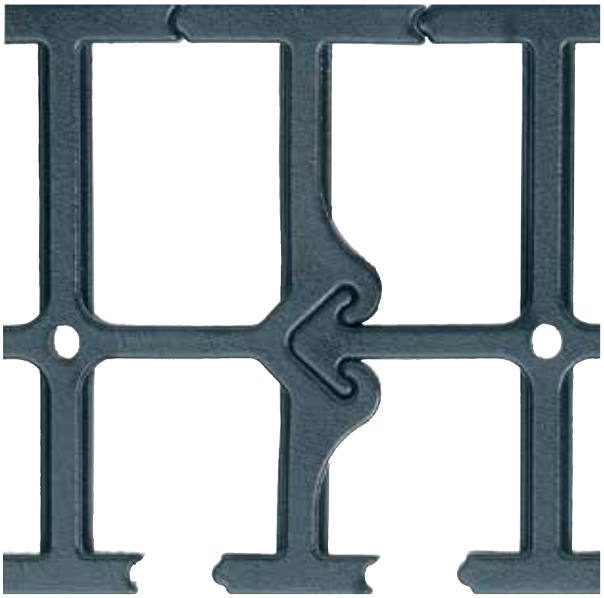


## System E6 - Connector replaces pins and bores

- Extremely low noise E-Chain® with high stability and tensile strength
- Modular 6-piece link design
- 5 sizes available
- 3 types available (E-Chain®, E-Tube, Light version
- Inner heights: 1.14” (29 mm), 1.57” (40 mm), 2.05” (52 mm), 2.44” (62 mm), 3.15” (80 mm)

**System E6 ➤**

# E6



## System T3 - Highly flexible, low vibration band chain without pin and bore connection

- For short strokes with extreme demands in low noise and dynamics
- For high speed and high accelerations
- Very low weight
- Hardly any abrasion
- Cost efficient, 3-piece E-Chain®

**System T3 ➤**

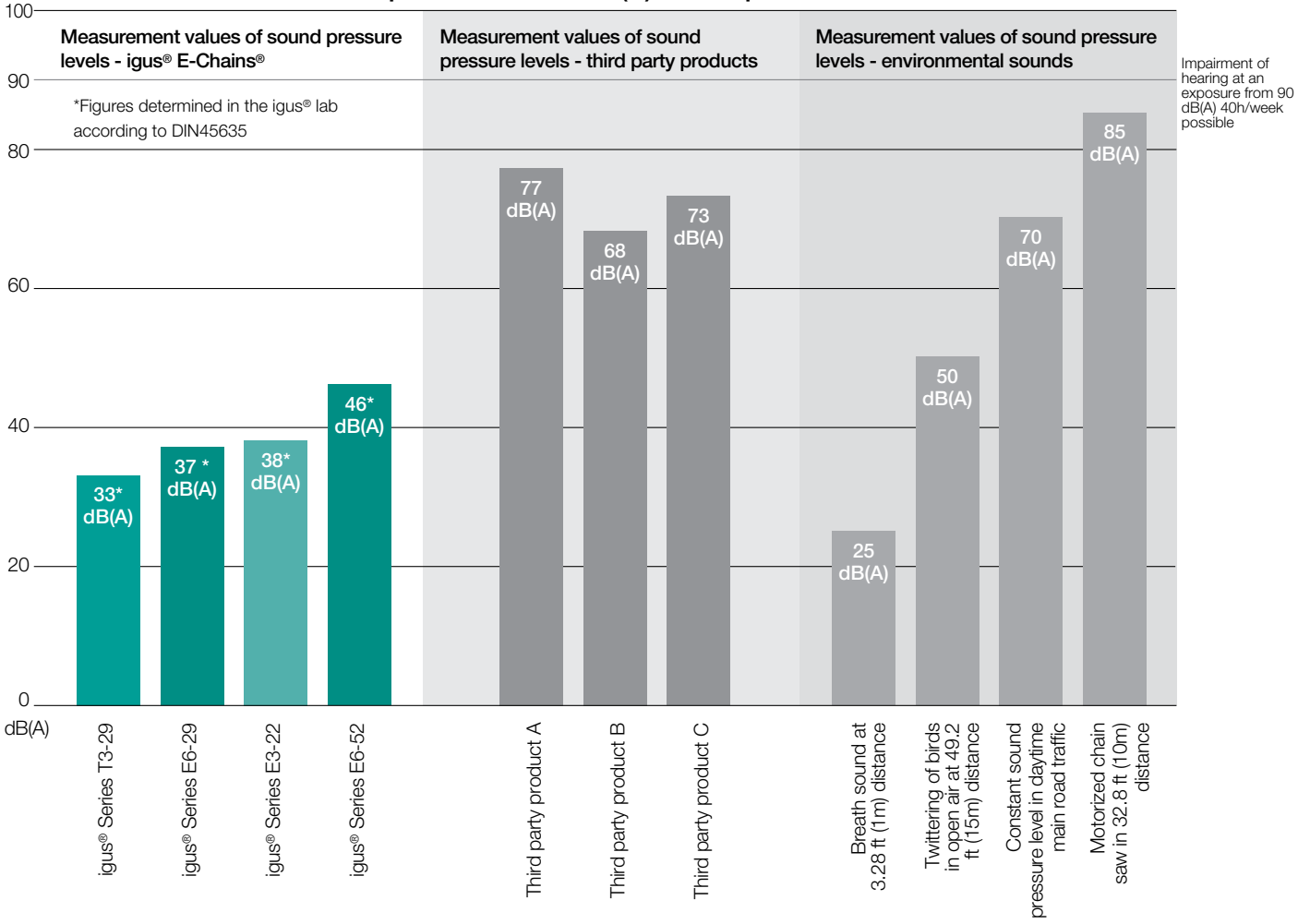
# T3

# E-Chain System® E3, E6 and T3

## The extremely low noise igus® E-Chain® - System E3, System E6 and System T3

The E-Chain® of the E3, E6 and T3 Series have extremely good low noise and vibration performance. The special, abrasion-resistant spring elements replace the conventional pin and bore connection of the chain links enabling the low noise and low vibration operation of the E-Chain®. Due to the special fastening system, these E-Chains® have minimal wear and abrasions and are therefore suitable for cleanroom applications. Another advantage of the connector is that in the application of an electrically conductive material (igumid ESD on request) it can guarantee constant conductivity value. The E-Chain® Series E3, E6 and T3 offer an extensive accessories package and are available in many sizes off the shelf.

## Measurement values of sound pressure levels dB(A) in comparison



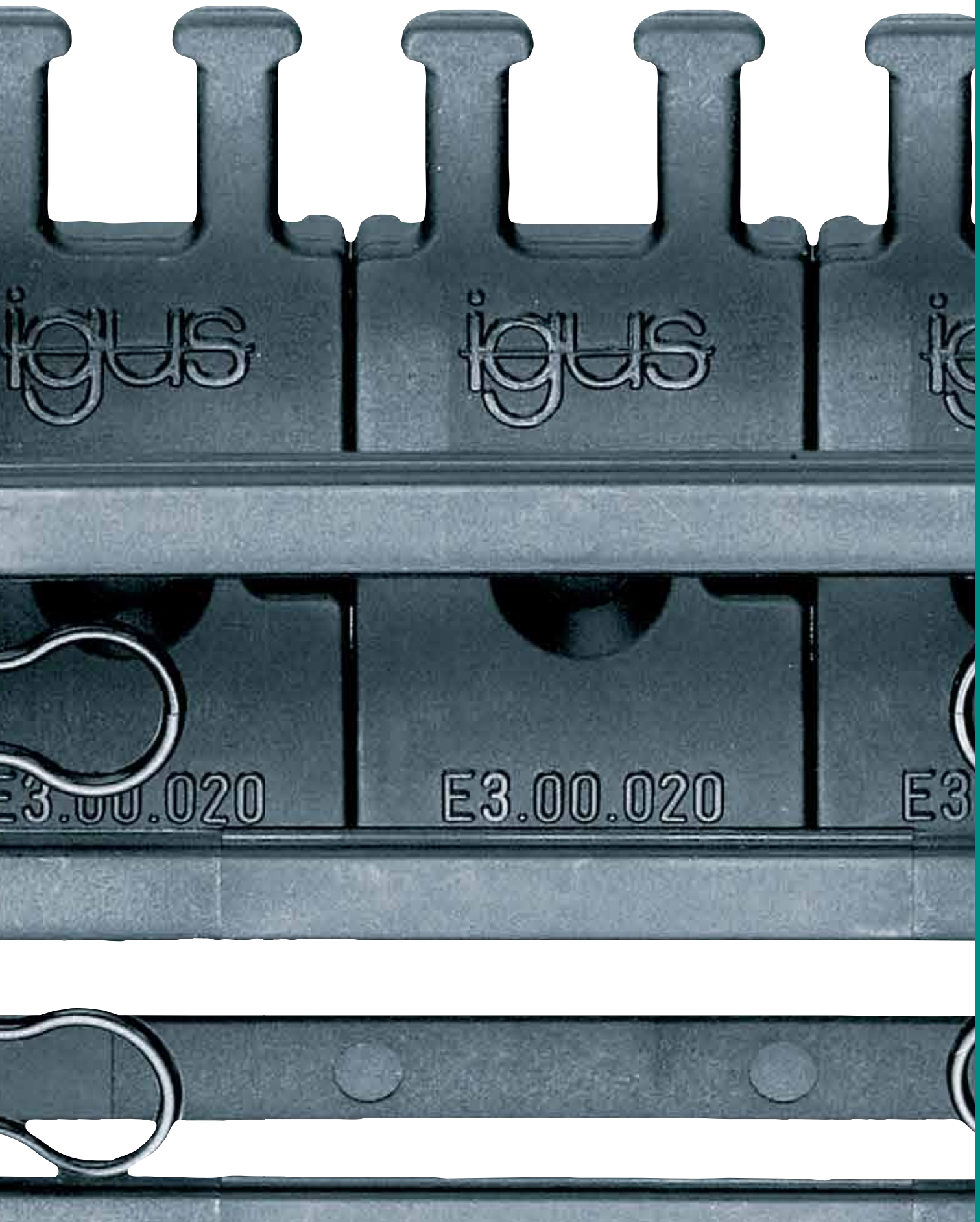

## Results of measurement

**Particle generation measurement:**
For a total of 100 minutes, the air around the moving test object is analyzed for particles.
***Result:*** NO particles larger ≥ 0.2 µm were measured.

| Result according to DIN EN ISO 14644-1 | E-Chain® Series | Report No. | Speed ft/s (m/s) |
|---|---|---|---|
| **ISO Class 1** | E3-15-040-075-0 | IG0704-400 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| **ISO Class 1** | E6-29-060-150-CR | IG0704-400 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| **ISO Class 1** | E61-29-050-075-0 | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| **ISO Class 2** | T3-29-050-038-0 | IG1303-640-1 | 1.64 / 3.28 / 6.56 (0.5 / 1.0 / 2.0) |
| **ISO Class 3** | E6-29-060-150-0 | IG0704-400 | 1.64 / 6.56 (0.5 / 2.0) |

Fraunhofer TESTED® DEVICE IPA igus GmbH Energy chain E61.29.050.075.0.CR Report No. IG 1303-640

E-Chain Systems® E6.1, E3, E6.29.CR certified according to **DIN EN ISO 14644-1 Class 1**, by the Fraunhofer IPA Institute.


igus
igus
E3.00.020
E3.00.020

igus®

# System E3

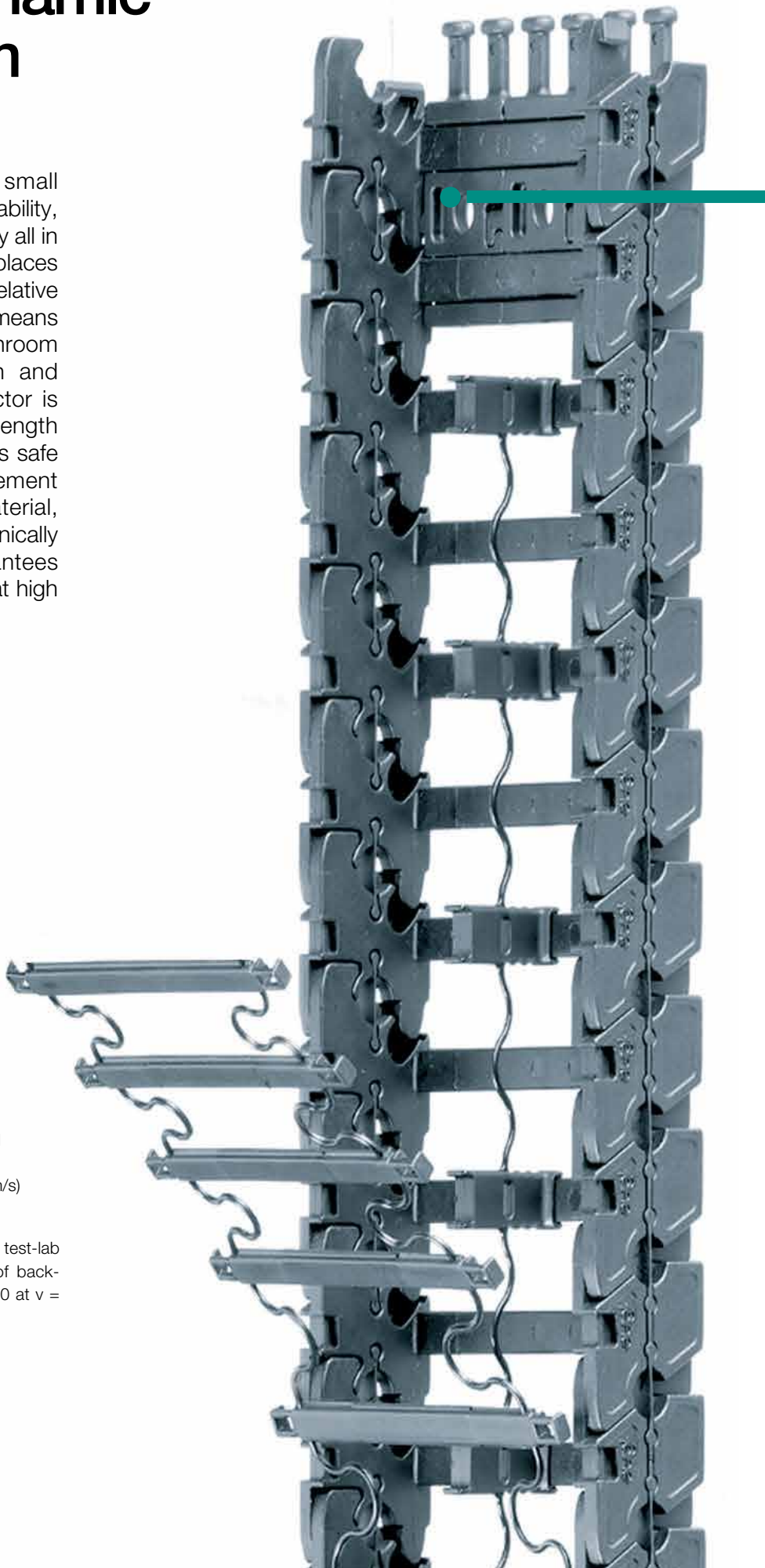
## Highly dynamic & cleanroom compatible

# E3 - Highly dynamic and cleanroom compatible

The igus® System E3 combines small pitches, smooth running, low noise, stability, easy assembly and economic efficiency all in one. The spring connector element replaces the pin and bore design and avoids relative movements between the joints. This means virtually no wear or abrasion for cleanroom applications. To reduce production and assembling costs, the spring connector is not mounted individually, but on a length of ten chain links. Another E3 option is safe performance. A modified spring element made of electrically conductive material, which connects the chain links mechanically and electrically, permanently guarantees constant electrical conductivity, even at high bending stress and in any position.

**Typical industries and applications**

- Semi-conductor manufacturing and handling
- Pick and place robots
- Optics
- Materials handling technology
- Measuring technology
- Printers and plotters
- Cleanroom environments
- General mechanical engineering

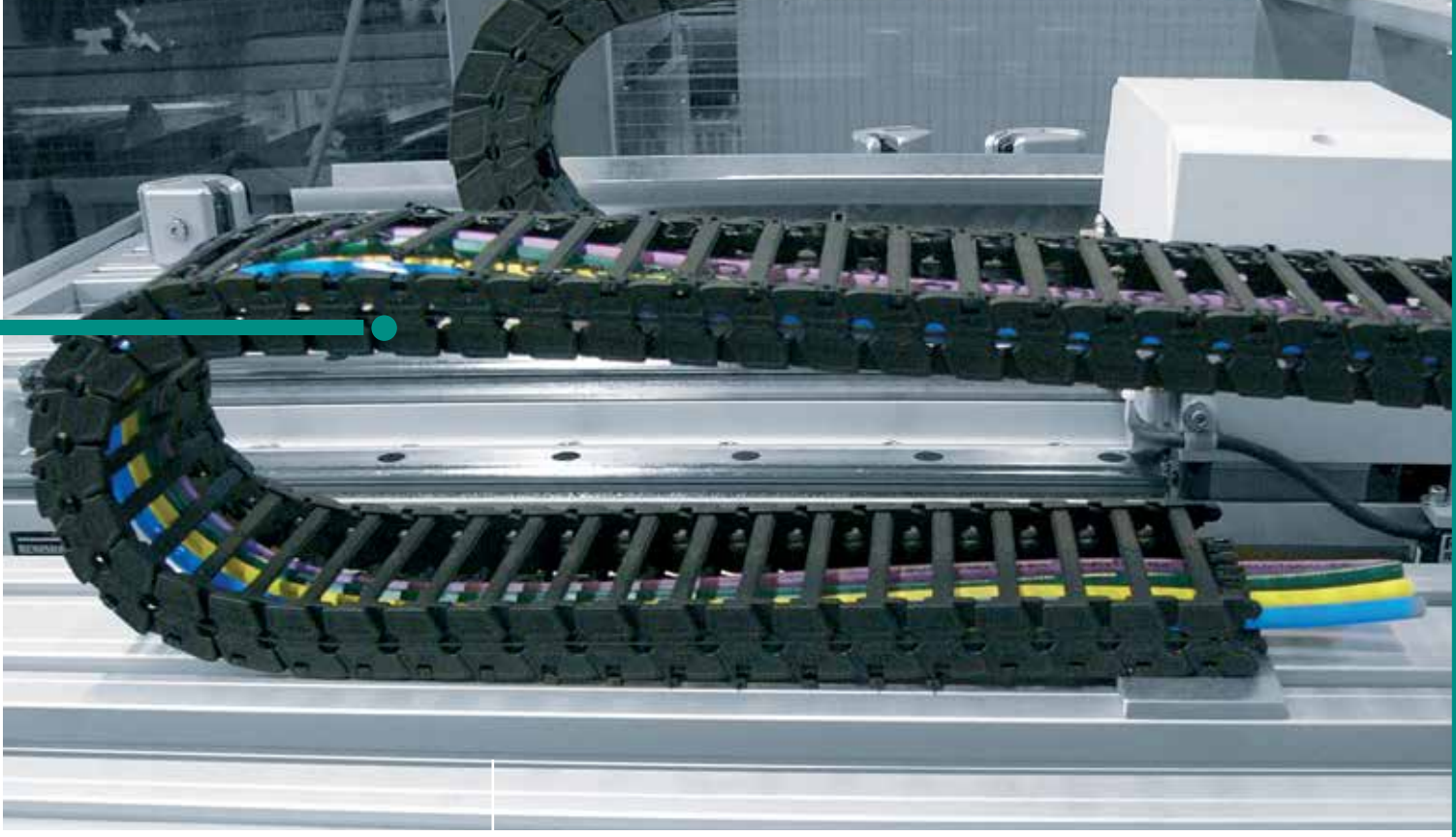


IPA Qualification Certificate - Report IG0704-400:
ISO Class 1, according to Norm DIN EN ISO 14644-1
for System E3, Series E3-15-040-075-0 at
v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

38 dB(A) - Value determined at the igus® test-lab acc. to DIN 45635, with consideration of background noises, for Series E3-22-060-044-0 at v = 5.91 ft/s (1.8 m/s)

iF-Design
Award 2005

Special equipment: Electrically conductive
ESD/ATEX version upon request



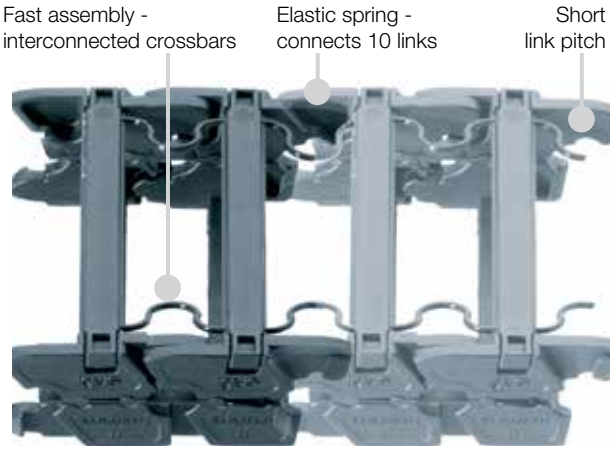
Long-term tests in our acoustics laboratory at a speed of 5.91 ft/s (1.8 m/s) and an acceleration of 9.84 ft/s² (3 m/s²) showed reductions of 19-20 dB(A) compared to conventional E-Chains®.

Light-weight and super-silent in small spaces - System E3

During long-term tests the System E3 with the spring band connector easily passes 15 million cycles at a bending radius of 1.73” (44 mm) and an acceleration of 4 g

Next Page ➤ Find selection table and assembly instructions

# E-Chain System® E3
# Selection Guide




E3 = E-Chains® with 3 different elements in one link:

- U-shaped link body
- Spring element
- Interconnected crossbars

## E3: System for highly dynamic applications

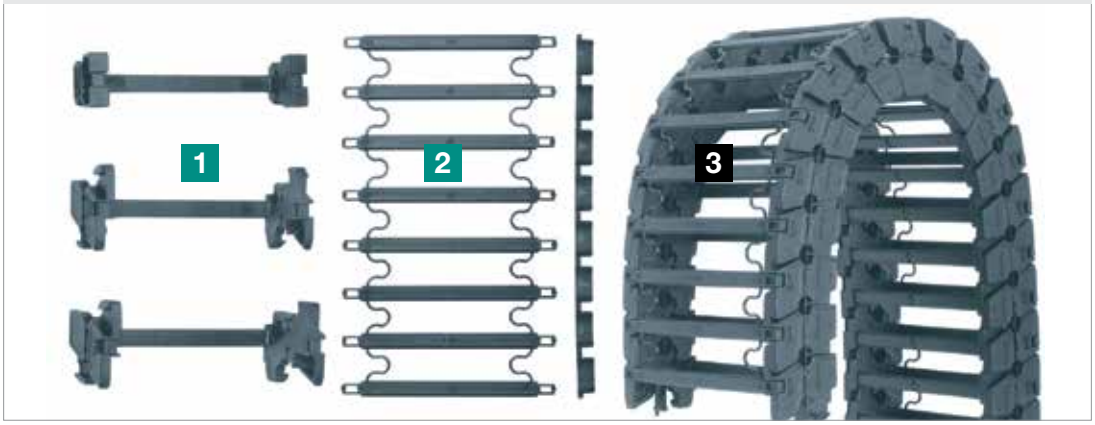
Cycle times in automation get shorter, while demands for low noise and low vibration levels are increasing. For the broad range of small size E-Chain® applications, igus® now introduces the System E3, that fully meets those requirements:

- Extremely low-noise operation - max. 38 dB(A)
- Elastic, dampening connector strip replaces pins and bores
- Modular 3-piece link design
- Cost effective cross bar, separator and connector modules
- Fast and easy cable access due to zipper opening mechanism
- Good unsupported strength due to solid, interlocking side links
- Easy lengthening and shortening
- Also suits flat cables
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E3-10** | .39 | (10) | .79-2.36 | (20-60) | 1.26-2.83 | (32-72) | .59 | (15) | .59-1.89 | (15-48) |
| **E3-15** | .59 | (15) | .79-2.36 | (20-60) | 1.26-2.83 | ( 32-72) | .79 | (20) | 1.26-2.95 | (32-75) |
| **E3-22** | .87 | (22) | .79-2.36 | (20-60) | 1.26-2.83 | ( 32-72) | 1.06 | (27) | 1.75-2.95 | (44-75) |

# E-Chain System® E3
# Assembly Instructions

## System E3 - 3-piece E-Chain®

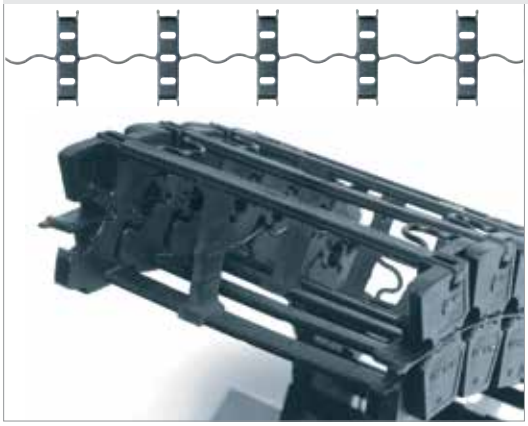



The abbreviation “E3” stands for an E-Chain® consisting of three basic elements:
❶ E-Chain® link body ❷ Interconnected crossbars ❸ Separator module

## System E3 - Opening and Closing

Interconnected crossbars for quick and easy installation - This E-Chain System®
allows faster assembling times. Opening and closing the E-Chain® is made easy by Interconnected crossbars

## System E3 - Interior Separation and Strain Relief



Vertical separators on a band divide carrier space - Five separators on one thread are simultaneously mounted on the crossbars

The universal strain relief can be individually matched to the chain width. You can fix the E-Chain® on the fixed end with brackets (option)

# E-Chain System® E3
# Series E3-10

.39

## Price Index

Series E3-10

## Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips

Rapid assembly time with interconnected crossbars

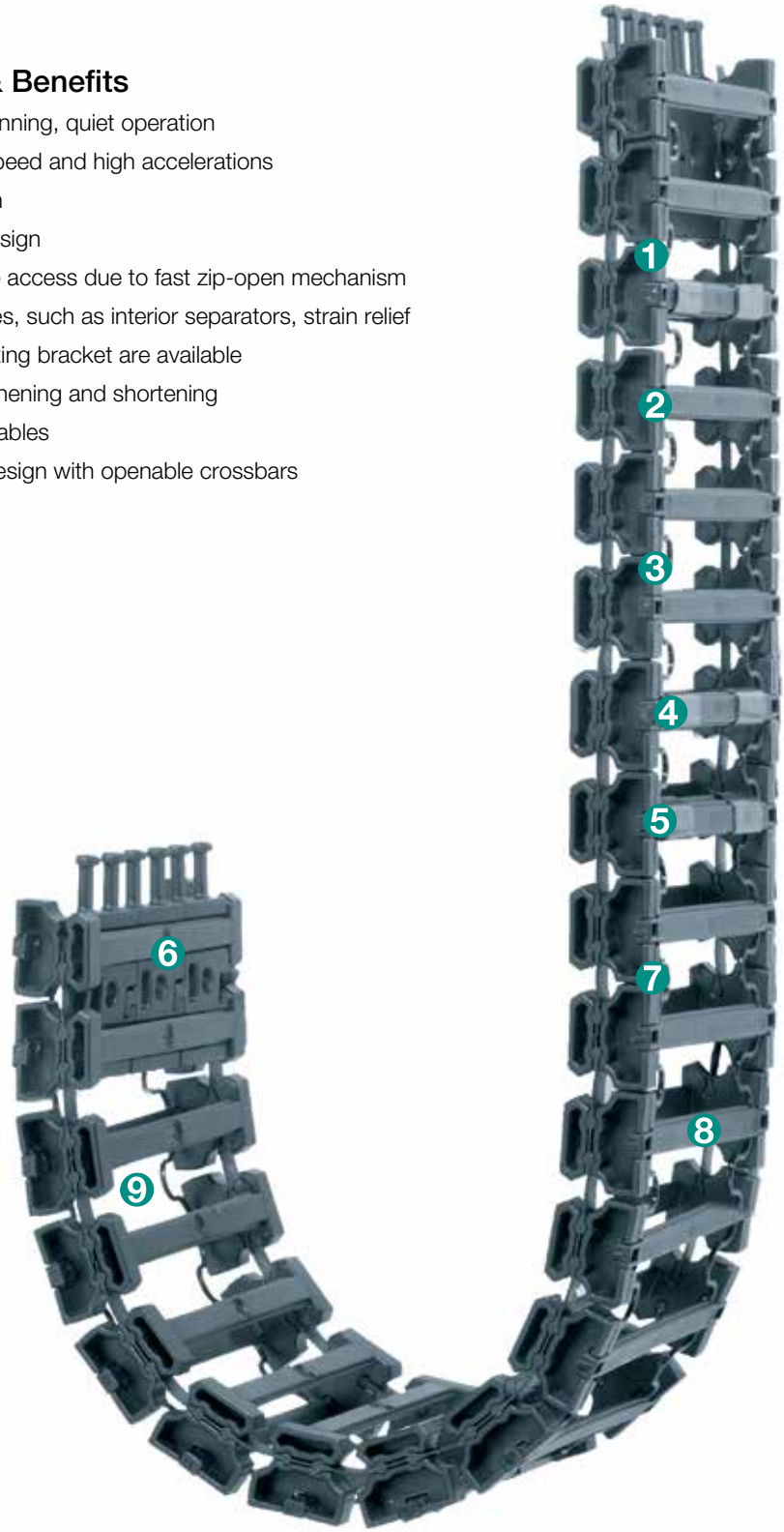
## Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E06/Z06 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 05 E2 micro**

## Features & Benefits

1. Smooth running, quiet operation
2. For high speed and high accelerations
3. Small pitch
4. 3-piece design
5. Easy cable access due to fast zip-open mechanism
6. Accessories, such as interior separators, strain relief
6. and mounting bracket are available
7. Easy lengthening and shortening
8. Suits flat cables
9. Modular design with openable crossbars




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E3-10-060-015-0** | **E-Chain®** |
| With 2 separators **E3-10-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E3-10-060-12** | **Mounting Bracket** |

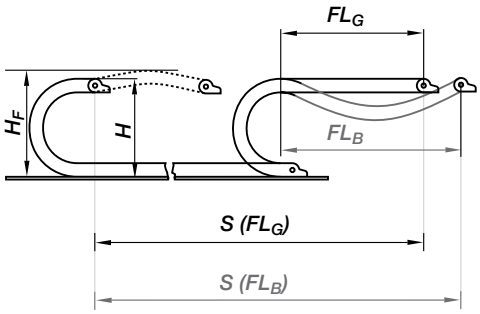
# E-Chain System® E3
# Series E3-10

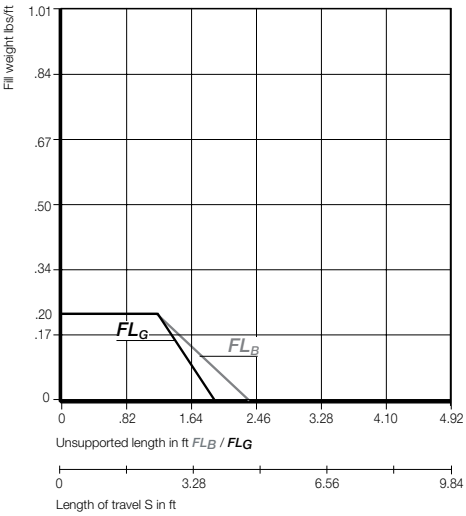
**Short travel, unsupported length**

● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**



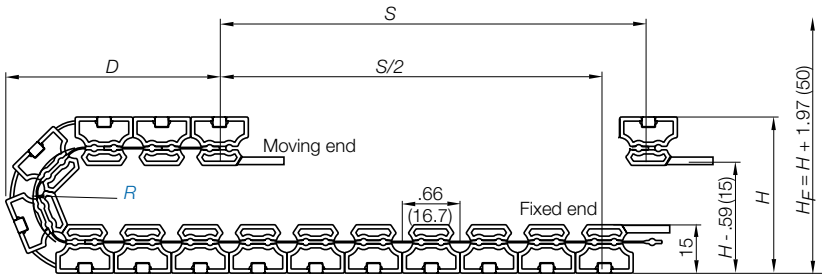




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** .66" (16.7 mm)
**Links per ft (m): =** 18.29 (60)
**For center mount applications:**
**Chain length =** $_S/_2$ + K

The required clearance height: ***$H_F$ = H* + 1.97 in. (50 mm)** (with 0.7 lbs/ft (0.1 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | .59 (015) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
|---|---|---|---|---|
| H | 2.36 (60) | 3.39 (86) | 4.17 (106) | 4.96 (126) |
| D | 1.97 (50) | 2.48 (63) | 2.87 (73) | 3.27 (83) |
| K | 3.35 (85) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

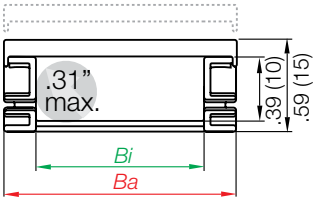
Details of material properties
➤ **Design, Chapter 1**

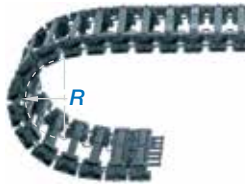
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E3
# Series E3-10

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E3-10 - Snap-open along the outer radius

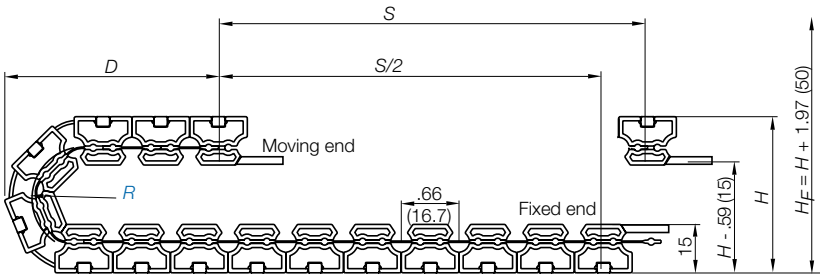



**Part Number Structure**

E3-10- 060- 015- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: E3-10-060-[015]-0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

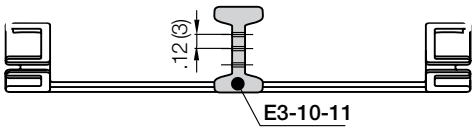
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E3-10-020-[ ]-0 | .79 (20) | 1.26 (32) | ≈ 0.08 (0.12) |
| E3-10-040-[ ]-0 | 1.57 (40) | 2.05 (52) | ≈ 0.10 (0.15) |
| E3-10-060-[ ]-0 | 2.36 (60) | 2.83 (72) | ≈ 0.13 (0.20) |

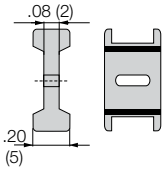
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E3-10-060-[015]-0

| | 015 | 028 | 038 | 048 |
|---|---|---|---|---|
| R | .59 (015) | 1.10 (028) | 1.50 (038) | 1.89 (048) |
| H | 2.36 (60) | 3.39 (86) | 4.17 (106) | 4.96 (126) |
| D | 1.97 (50) | 2.48 (63) | 2.87 (73) | 3.27 (83) |
| K | 3.35 (85) | 4.92 (125) | 6.10 (155) | 7.28 (185) |

NOTE: E3-10-020-038, E3-10-020-048, E3-10-040-028, E3-10-060-028 and E3-10-060-048 are available upon request

## Interior Separation






**Separator, narrow head**

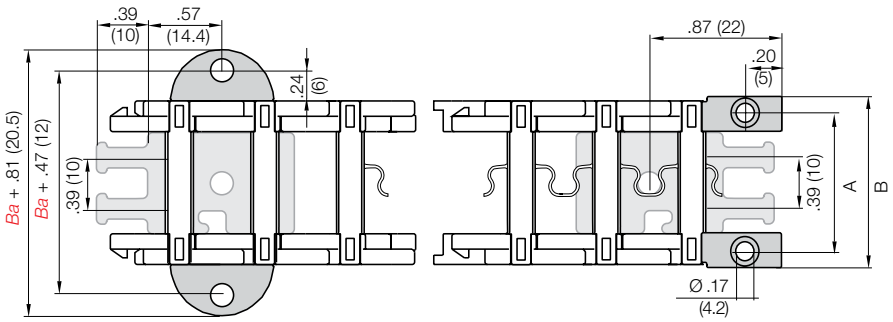
| | |
|---|---|
| Unassembled | **Part No. E3-10-01** |
| Assembled | **Part No. E3-10-11** |

- **Separator 45-2**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

# E-Chain System® E3
# Series E3-10
# KMA Mounting Bracket, Mounting Angle, Plastic

**Fixed end**
**E3-10-...-2**

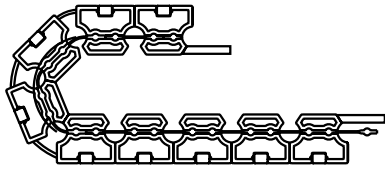
**Moving end**
**E3-10-...-1**




**View Mounting angle**

**View KMA mounting bracket**

**E3-100-XXX-12** - Space-saving KMA mounting brackets



| For Series | KMA Mounting bracket | Dimension A in. (mm) | Dimension B in. (mm) | Part No. Full Set strain relief both sides + 2 mounting angles | Part No. strain relief both sides | Part No. mounting angle* (single part) |
|---|---|---|---|---|---|---|
| E3-10-020 | **E3-100-020-12** | 1.10 (28) | 1.42 (36) | **E3-10-020-12** | **E3-020-12** | **E3-10-00** |
| E3-10-040 | **E3-100-040-12** | 1.89 (48) | 2.20 (56) | **E3-10-040-12** | **E3-040-12** | **E3-10-00** |
| E3-10-060 | **E3-100-060-12** | 2.68 (68) | 2.99 (76) | **E3-10-060-12** | **E3-060-12** | **E3-10-00** |

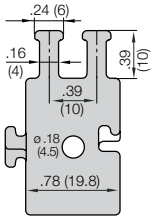
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

## E3-10-XXX-12

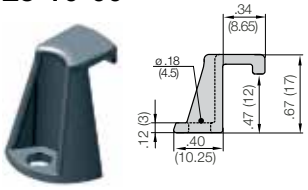
**E3 with strain relief for both sides and mounting angles**

## E3-00-020

**Strain relief for both sides as single parts**




## E3-10-00




**Mounting angle as single part**

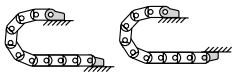
**Full set, for both ends:**

E3-10- 060- 12 Full set, **both fixed and moving end**

**Single-part order:**

E3-10 - 060- 1 Mounting bracket **moving end**

E3-10 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E3
# Series E3-15

.59

## Price Index

Series E3-15

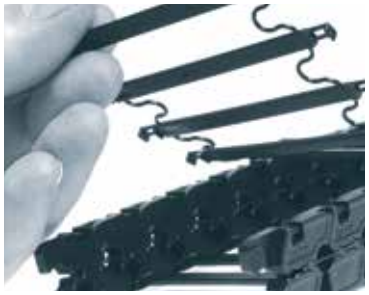
## Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips



Rapid assembly time with interconnected crossbars

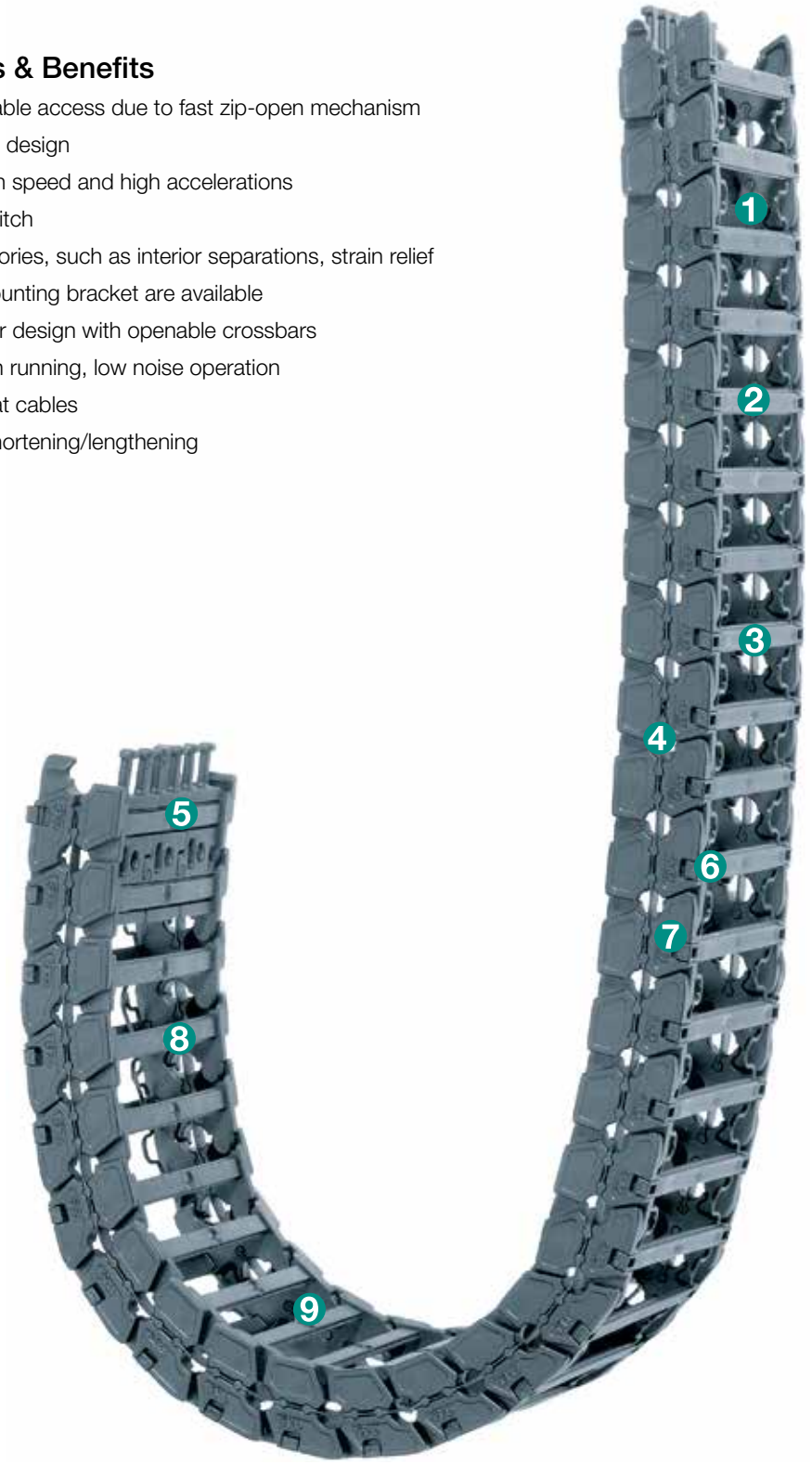
## Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E08/Z08 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 08 E2 Micro**

## Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. For high speed and high accelerations
4. Small pitch
5. Accessories, such as interior separations, strain relief and mounting bracket are available
6. Modular design with openable crossbars
7. Smooth running, low noise operation
8. Suits flat cables
9. Easy shortening/lengthening




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

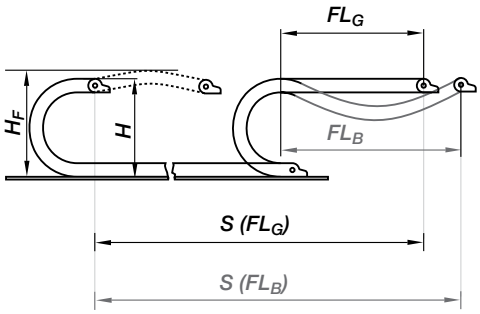
| | |
|---|---|
| 3.28 ft (1 m) **E3-15-060-032-0** | **E-Chain®** |
| With 2 separators **E3-15-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E3-15-060-12** | **Mounting Bracket** |

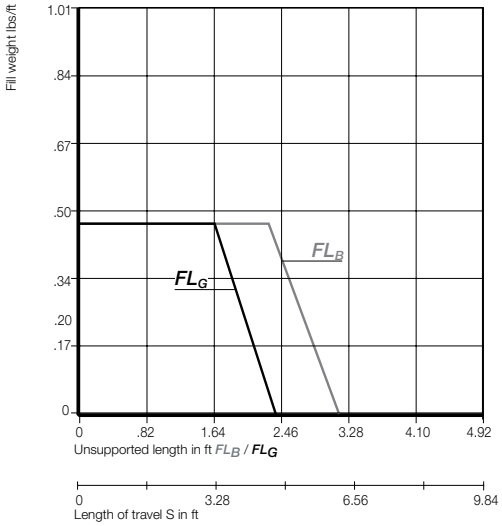
# E-Chain System® E3
# Series E3-15

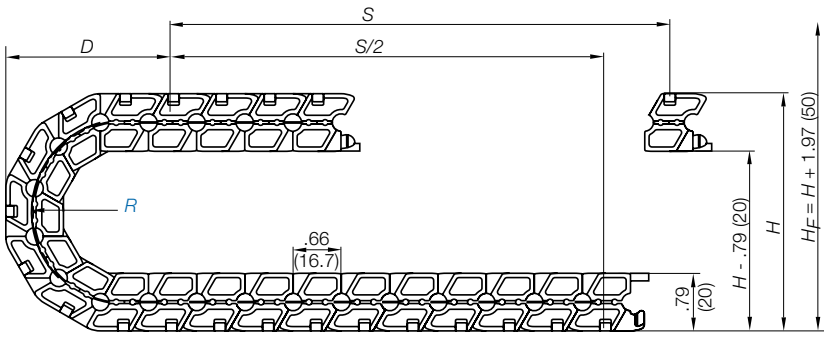
## Short travel, unsupported length

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .66" (16.7 mm)
**Links per ft (m): =** 18.29 (60)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with 0.13 lbs/ft (0.2 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| *R* | 1.26 (032) | 1.50 (038) | 1.89 (048) | 2.95 (075) |
|---|---|---|---|---|
| *H* | 3.90 (99) | 4.37 (111) | 5.16 (131) | 7.28 (185) |
| *D* | 2.64 (67) | 2.87 (73) | 3.27 (83) | 4.33 (110) |
| *K* | 5.31 (135) | 6.10 (155) | 7.28 (185) | 10.63 (270) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

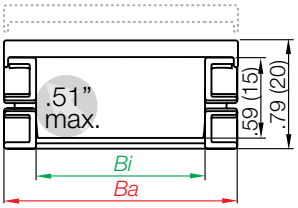
Details of material properties
➤ **Design, Chapter 1**

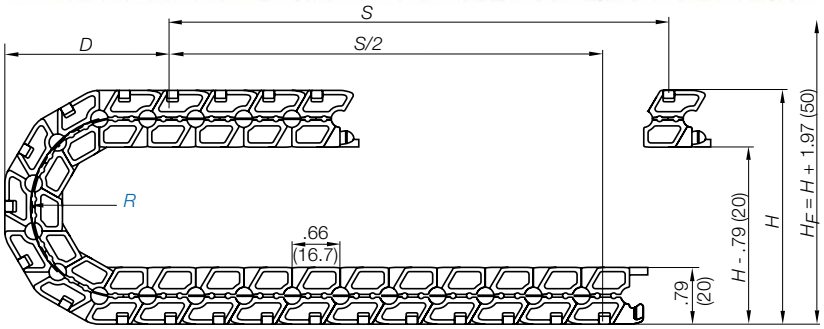
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E3
# Series E3-15
# Interior Separation

## Series E3-15 - Snap-open along the outer radius






**Part Number Structure**

E3-15- 060- 032- 0

- 032 – Bending radius
- 060 – Width
- E3-15 – Series
- 0 – Color - Black

Supplement part number with required radius. Example: E3-15-060- 032 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

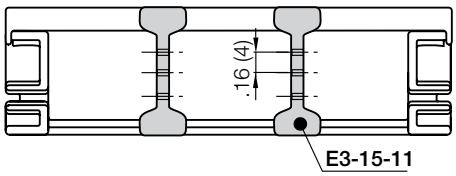
| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E3-15-020- ☐ -0* | .79 (20) | 1.26 (32) | ≈ 0.15 (0.22) |
| E3-15-040- ☐ -0 | 1.57 (40) | 2.05 (52) | ≈ 0.17 (0.25) |
| E3-15-060- ☐ -0 | 2.36 (60) | 2.83 (72) | ≈ 0.22 (0.32) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E3-15-060- 032 -0

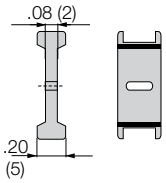
| | 032 | 038 | 048 | 075 |
|---|---|---|---|---|
| *R* | 1.26 (032) | 1.50 (038) | 1.89 (048) | 2.95 (075) |
| *H* | 3.90 (99) | 4.37 (111) | 5.16 (131) | 7.28 (185) |
| *D* | 2.64 (67) | 2.87 (73) | 3.27 (83) | 4.33 (110) |
| *K* | 5.31 (135) | 6.10 (155) | 7.28 (185) | 10.63 (270) |

*Radii 038 and 075 are not available for the E3-15-020
NOTE: E3-15-020-048 is available upon request

## Interior Separation




E3-15-11




**Slotted separator for E-Chains®**

| | |
|---|---|
| Unassembled | **Part No. E3-15-01** |
| Assembled | **Part No. E3-15-11** |

- **Separator E3-15-01**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

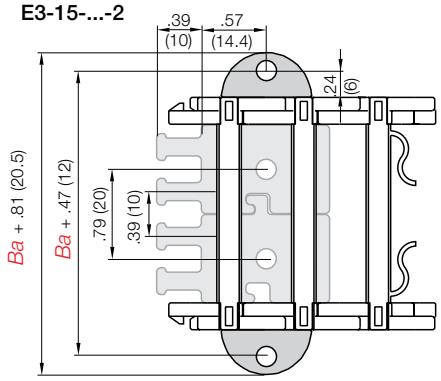
**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. E3-15-01-10** |
| Assembled | **Part No. E3-15-11-10** |

- **Slotted separator on a strip E3-15-01-10**
  Five vertical separators connected on one strip span ten E-Chain® links and are mounted on the opening crossbars. This creates separate chambers, protecting the cables. The dimensions are the same as the E3-22-01 slotted separator

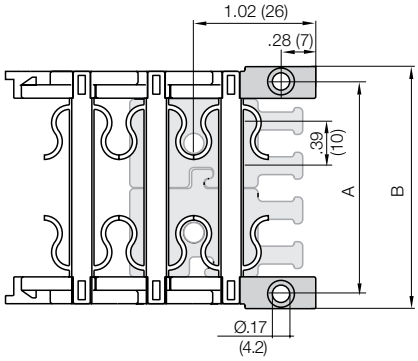
# E-Chain System® E3
# Series E3-15
# KMA Mounting Bracket, Mounting Angle, Plastic

**Fixed end**
**E3-15-...-2**



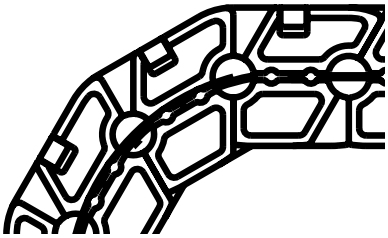

**View Mounting angle**

**Moving end**
**E3-15-...-1**




**View KMA mounting bracket**

**E3-150-XXX-12** - Space-saving KMA mounting brackets



| For Series | KMA Mounting bracket | Dimension A in. (mm) | Dimension B in. (mm) | Part No. Full Set strain relief both sides + 2 mounting angles | Part No. strain relief both sides | Part No. mounting angle* (single part) |
|---|---|---|---|---|---|---|
| E3-15-020 | **E3-150-020-12** | .10 (28) | 1.42 (36) | **E3-15-020-12** | **E3-020-12** | **E3-15-00** |
| E3-15-040 | **E3-150-040-12** | 1.89 (48) | 2.20 (56) | **E3-15-040-12** | **E3-040-12** | **E3-15-00** |
| E3-15-060 | **E3-150-060-12** | 2.68 (68) | 2.99 (76) | **E3-15-060-12** | **E3-060-12** | **E3-15-00** |

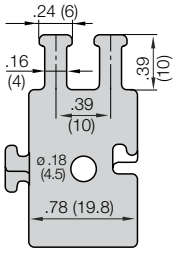
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

## E3-15-XXX-12

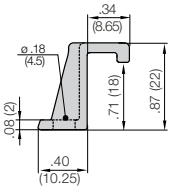
**E3 with strain relief for both sides and mounting angles**

## E3-00-020

**Strain relief for both sides as single parts**




## E3-15-00




**Mounting angle as single part**

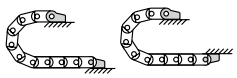
**Full set, for both ends:**

E3-15- | 020- | 12 | Full set, **both fixed and moving end**

**Single-part order:**

E3-15 - | 020- | 1 | Mounting bracket **moving end**

E3-15 - | 020- | 2 | Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E3
# Series E3-22

.87

## Price Index

Series E3-22

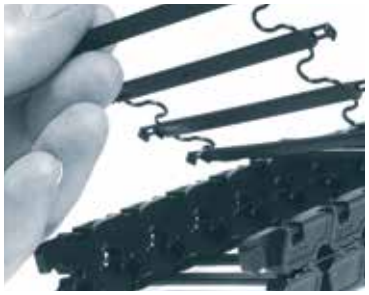
## Special Features / Options

*Noise test values: max. 38dB(A) - Values determined at the igus® test lab according to DIN 45635 (v = 5.91 ft/s

IPA Classification: Report IG0704-400: ISO Class 1, according to standard DIN EN ISO 14644-1 for E3, Series E3-15-040-075-0 (at v = 1.64 ft/s, 3.28 ft/s, 6.56 ft/s)

Special equipment: Electrically conductive ESD/ATEX version upon request

## Assembly Tips



Rapid assembly time with interconnected crossbars

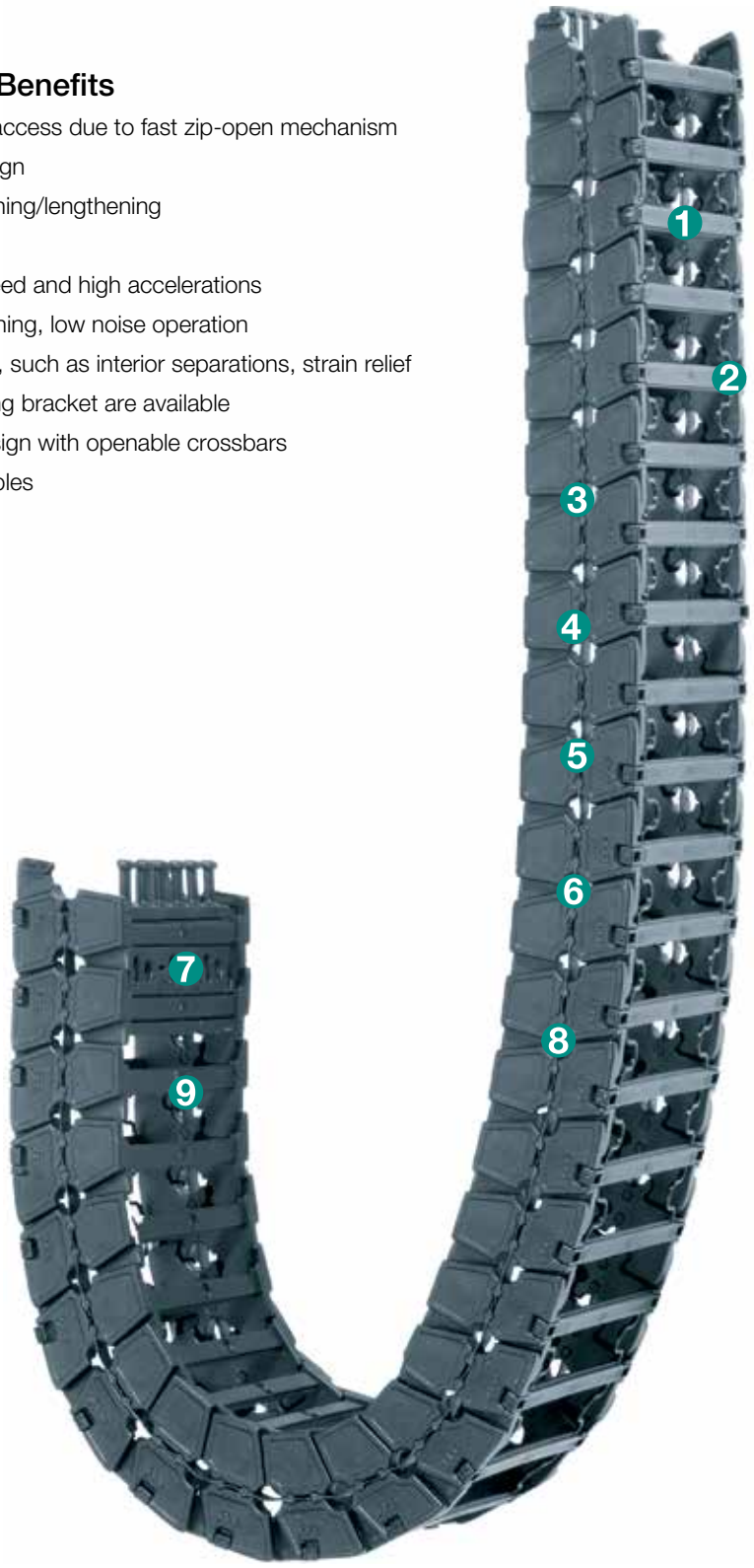
## Usage Guidelines

- If a low noise, vibration-free version is required
- For very high speeds and/or accelerations (theoretically up to 100G or 3,281 ft/s (1000 m/s)
- Hard-wearing E-Chain® (more than 50 million cycles with minimal abrasion)
- If a very light E-Chain® is required (up to 40% lighter than comparable E2 E-Chain®
- For the use of flat cables
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- If a particularly low-cost snap-open solution is required
  ➤ **Series E14/Z14 E-Z Chain**
- If a simple, non snap-open E-Chain® is required
  ➤ **Series 1400/1450/1500 E2 Medium**

## Features & Benefits

1. Easy cable access due to fast zip-open mechanism
2. 3-piece design
3. Easy shortening/lengthening
4. Small pitch
5. For high speed and high accelerations
5. Smooth running, low noise operation
7. Accessories, such as interior separations, strain relief and mounting bracket are available
8. Modular design with openable crossbars
9. Suits flat cables




## Order Example: Complete E-Chain®

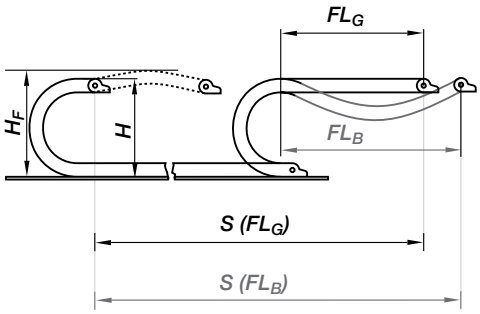
Please indicate chain length or number of links. Example:

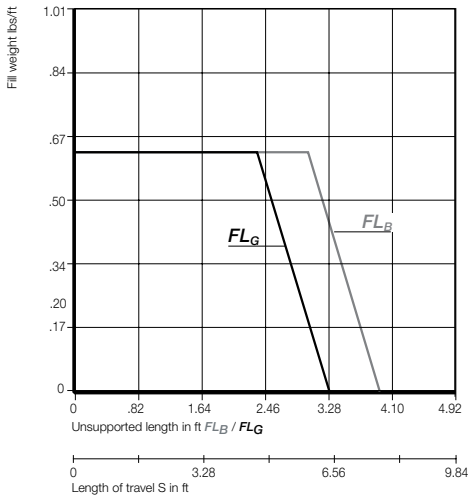
| | |
|---|---|
| 3.28 ft (1 m) **E3-22-060-044-0** | **E-Chain®** |
| With 2 separators **E2-22-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E3-22-060-12** | **Mounting Bracket** |

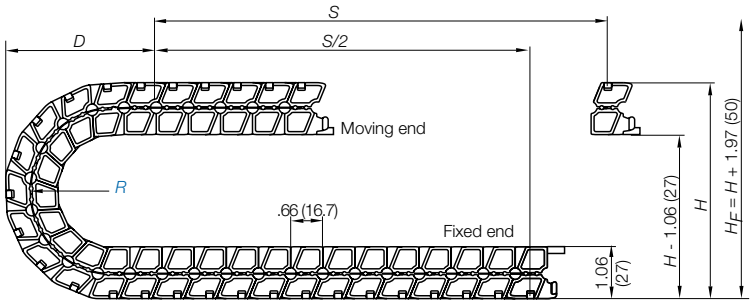
# E-Chain System® E3
# Series E3-22

## Short travel, unsupported length

● $FL_B$ = unsupported with permitted sag
● $FL_G$ = unsupported with straight upper run
Further information ➤ Design, Chapter 1




The required clearance height: ***HF = H* + 1.97 in. (50 mm)** (with 0.20 lbs/ft (0.3 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 1.73 (044) | 1.97 (050) | 2.95 (075) |
|---|---|---|---|
| H | 5.28 (134) | 5.75 (146) | 6.93 (176) |
| D | 3.23 (82) | 3.15 (80) | 4.13 (105) |
| K | 6.89 (175) | 7.68 (195) | 10.63 (270) |

**Pitch per link: =** .66" (16.7 mm)
**Links per ft (m): =** 18.29 (60)
**For center mount applications:**
**Chain length =** $_S/_2 + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

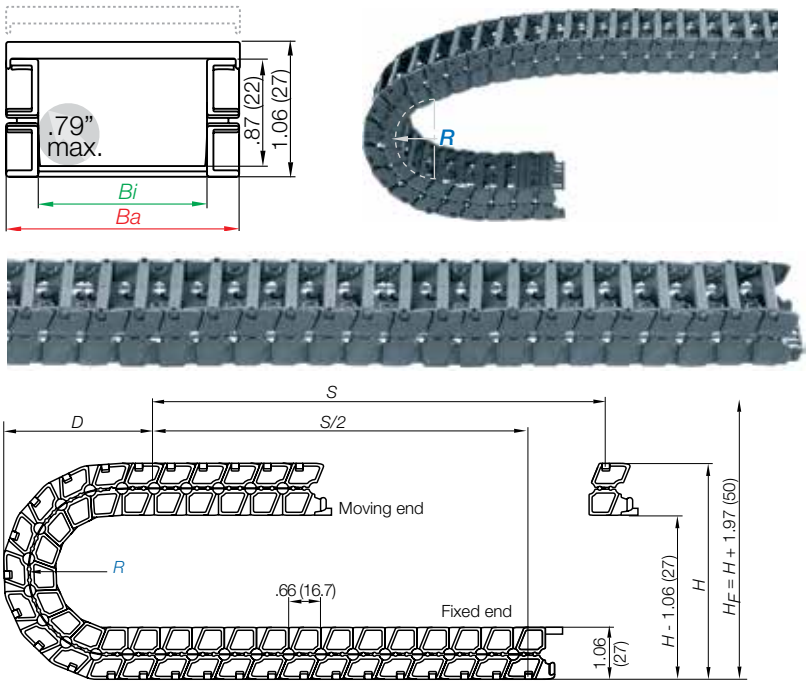
## Technical Data

Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E3
# Series E3-22
# Installation Dimensions, Interior Separation

## Series E3-22 - Snap-open along the outer radius




**Part Number Structure**

E3-22- 060- 044- 0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: E3-22-060- 044 -0
Pitch: .66 in. (16.7 mm) per link links/ft (m) = 18.29 (60)

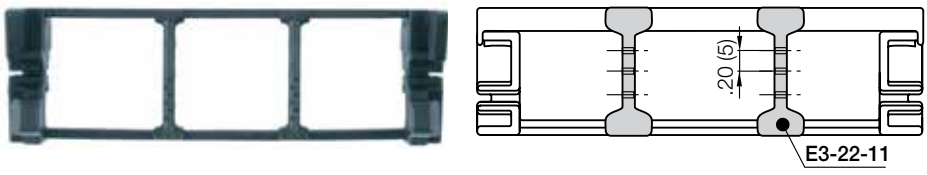
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E3-22-020- ☐ -0 | .79 (20) | 1.26 (32) | ≈ 0.20 (0.30) |
| E3-22-040- ☐ -0 | 1.57 (40) | 2.05 (52) | ≈ 0.22 (0.32) |
| E3-22-060- ☐ -0 | 2.36 (60) | 2.83 (72) | ≈ 0.28 (0.41) |

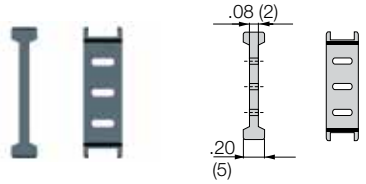
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E3-22-060- 044 -0

| | 044 | 050* | 075 |
|---|---|---|---|
| R | 1.73 (044) | 1.97 (050) | 2.95 (075) |
| H | 5.28 (134) | 5.75 (146) | 6.93 (176) |
| D | 3.23 (82) | 3.15 (80) | 4.13 (105) |
| K | 6.89 (175) | 7.68 (195) | 10.63 (270) |

* Radius 050 is not available for the E3-22-060

## Interior Separation




**Slotted separator for E-Chains®**

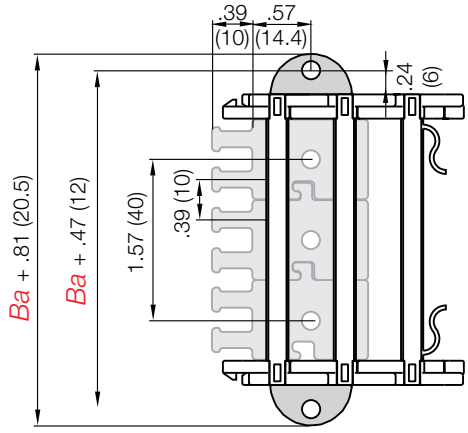
| | |
|---|---|
| Unassembled | **Part No. E3-22-01** |
| Assembled | **Part No. E3-22-11** |

- **Slotted separator E3-22-01**
  Vertical separators are used if a vertical subdivision of the E-Chain® interior is required.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

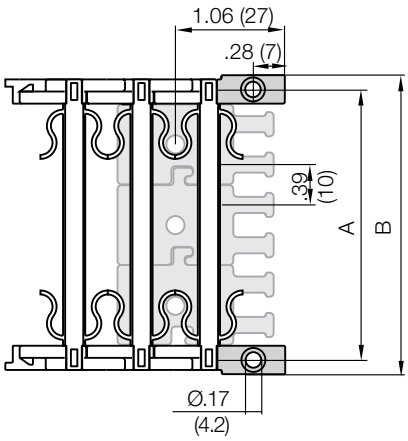
# E-Chain System® E3
# Series E3-22
# KMA Mounting Bracket, Mounting Angle, Plastic

**Fixed end**
**E3-22-...-2**



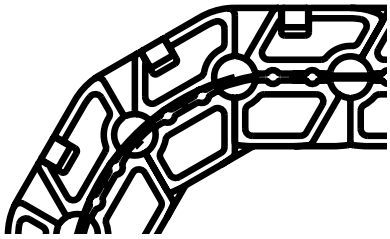

**View Mounting angle**

**Moving end**
**E3-22-...-1**




**View KMA mounting bracket**

**E3-220-XXX-12 -** Space-saving KMA mounting brackets



| For Series | KMA Mounting bracket | Dimension A in. (mm) | Dimension B in. (mm) | Part No. Full Set strain relief both sides + 2 mounting angles | Part No. strain relief both sides | Part No. mounting angle (single part) |
|---|---|---|---|---|---|---|
| E3-22-020 | **E3-220-020-12** | .10 (28) | 1.42 (36) | **E3-22-020-12** | **E3-020-12** | **E3-22-00** |
| E3-22-040 | **E3-220-040-12** | 1.89 (48) | 2.20 (56) | **E3-22-040-12** | **E3-040-12** | **E3-22-00** |
| E3-22-060 | **E3-220-060-12** | 2.68 (68) | 2.99 (76) | **E3-22-060-12** | **E3-060-12** | **E3-22-00** |

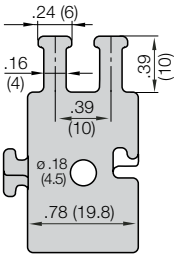
*Note: If the mounting brackets are used, two links each side must be added to the E-Chain® length calculation, because the first to links are fixed by the mounting brackets.

## E3-22-XXX-12

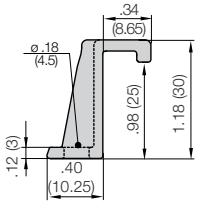
**E3 with strain relief for both sides and mounting angles**

## E3-00-020

**Strain relief for both sides as single parts**




## E3-22-00




**Mounting angle as single part**

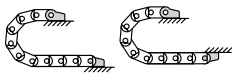
**Full set, for both ends:**

E3-22- 060- 12 Full set, **both fixed and moving end**

**Single-part order:**

E3-22 - 060- 1 Mounting bracket **moving end**

E3-22 - 060- 2 Mounting bracket **fixed end**



Possible installation configurations -

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

# System E6

# E6 - 6-piece E-Chains®- Extremely low-noise, minimum vibrations

The E6 Series offers numerous advantages in addition to long life cycles. It provides extremely quiet, low-vibration operation. It minimizes the polygon effect which can occur during the rolling motion of an E-Chain®. The ultra-low noise levels have been confirmed in a recent report by the Rheinland Technical Inspection Agency. Our extensive delivery program offers the right chain size for any application; a wide range of interior separators are also available. The same applies to the mounting brackets. .

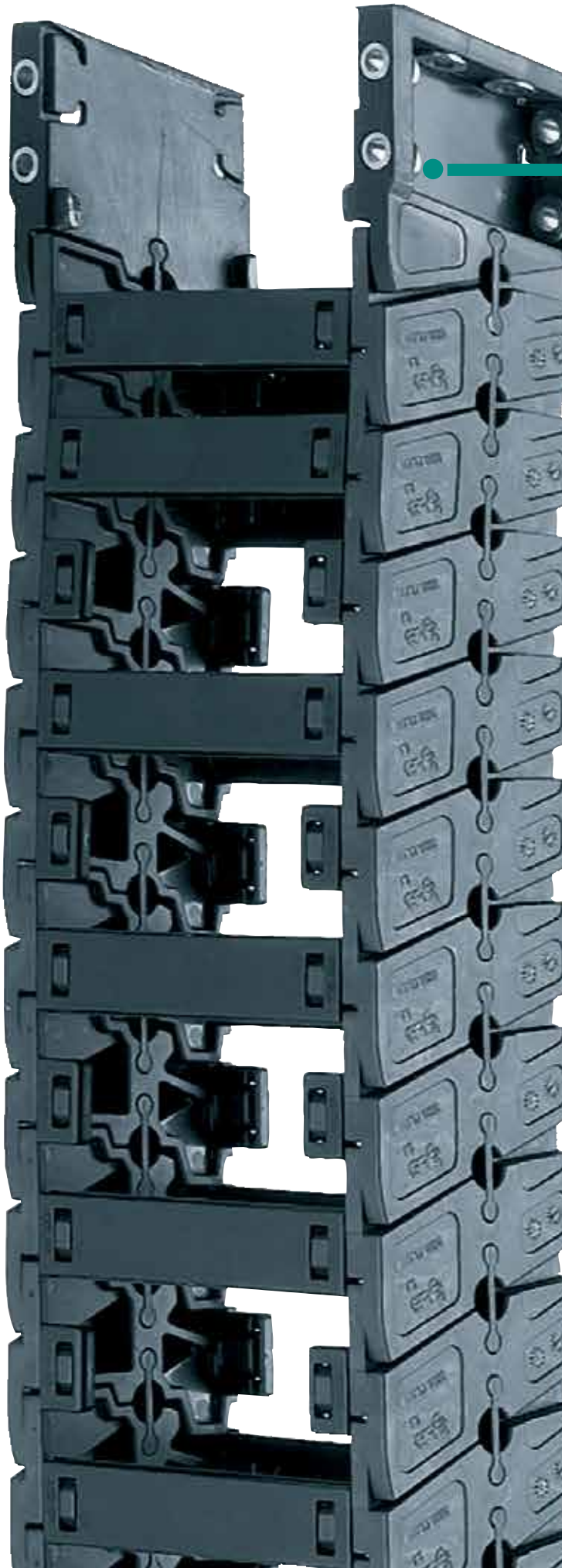
**Typical industries and applications**

- Cleanroom
- Printing machines
- Handling & robot
- Machine Tools
- Measuring machines
- Semiconductor industries
- Medical industries
- Electronic industries
- General machinery

System E6 - Extremely low noise - TÜV certified

System E6 - 6-piece link-design

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institut according to SEMI E78-0998 for the E6 standard material. Special material “igumid ESD” for ESD/ATEX applications available on request. Continuously constant conductance value as there are no pin-bore connection (no air gaps).



A linear drive provides for highly dynamic feed of PCBs. This system is twice as fast as handling units with a toothed-belt drive; designed to withstand high dynamic loads, the E6 E-Chains® ensure a supply of power, coolant and control data with ultra-low noise and vibration

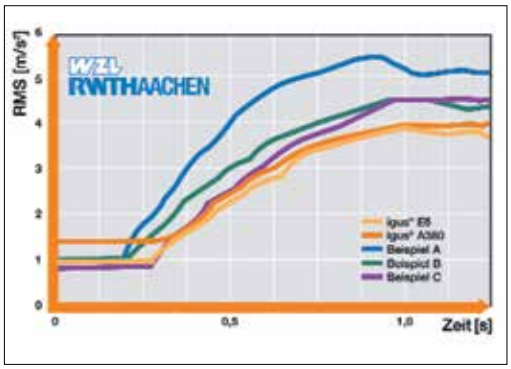
## Selected noise tests - External noise corrected measurement values

| E-Chain® Series | Averaging of the corrected sound pressure levels | Test method |
|---|---|---|
| **igus® Series E6-29*** | **≈ 37 dB(A)** | unsupported v = 3.28 ft/s (1.0 m/s) |
| **igus® Series E6-52*** | **≈ 41 dB(A)** | unsupported, side mounted v = 1.64 ft/s (0.5 m/s) |
| **igus® Series E6-52** | **≈ 46 dB(A)** | unsupported v = 6.56 ft/s (2.0 m/s) |
| Chain 1 Third-party product | ≈ 77 dB(A) | unsupported v = 6.56 ft/s (2.0 m/s) |
| Chain 2 Third-party product | ≈ 68 dB(A) | unsupported v = 6.56 ft/s (2.0 m/s) |
| Chain 3 Third-party product | ≈ 73 dB(A) | unsupported v = 6.56 ft/s (2.0 m/s) |

Source: TÜV Rheinland *Source: igus® laboratory

### Noise level ≤ 46 dB(A)

A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46 dB(A) at 6.56 ft/s (2 m/s) and with an unsupported length of 4..92 ft (1.5 m) with **Series E6-52-100-100-0**, and all this with at least 10 dB(A) sound pressure level generated by external noise. **We have received an official noise certificate from the Rhineland Technical Inspection Authority (TÜV Rheinland Berlin Brandenburg) and we are happy to provide you with a copy upon request.**




Study of the Laboratory of Machine Tools and Production Engineering (WZL) of the RWTH Aachen on “Vibration tests in energy supply chains”.
Result: The E6 energy supply system of the company of igus® GmbH, Cologne, is characterized by extreme low vibration and smooth running.

# E-Chain System® E6
# Selection Guide

## Crossbars every 2nd link
for almost all applications - Standard

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **E6-29** | 1.14 | (29) | 1.18-5.51 | (30-140) | 1.81-5.35 | (46-136) | 1.38 | (35) | 2.17-5.91 | (55-150) |
| **E6-35** | 1.38 | (35) | 1.18-5.51 | (30-140) | 1.97-6.30 | (50-160) | 1.65 | (42) | 2.17-5.91 | (55-100) |
| **E6-40** | 1.57 | (40) | 1.57-11.81 | (40-300) | 2.36-12.60 | (60-320) | 2.12 | (54) | 2.48-7.87 | (63-200) |
| **E6-52** | 2.05 | (52) | 1.57-11.81 | (40-300) | 2.52-12.76 | (64-324) | 2.56 | (65) | 2.95-9.84 | (75-250) |
| **E6-62** | 2.44 | (62) | 1.97-15.75 | (50-400) | 3.39-17.17 | (86-436) | 3.31 | (84) | 4.53-13.78 | (115-350) |
| **E6-80L** | 3.15 | (80) | 3.53-21.65 | (87-550) | 4.53-22.76 | (115-578) | 4.25 | (108) | 5.91-11.81 | (150-300) |
| **E6-80** | 3.15 | (80) | 1.97-23.62 | (50-600) | 3.94-25.59 | (100-650) | 4.25 | (108) | 5.91-17.72 | (150-450) |

## E-Tubes
fully enclosed, for complete cable protection

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **R6-29** | 1.10 | (28) | 1.18-4.72 | (30-120) | 1.81-5.35 | (46-136) | 1.38 | (35) | 2.17-5.91 | (55-150) |
| **R6-40** | 1.57 | (40) | 2.44-2.95 | (62-75) | 3.23-3.74 | (82-95) | 2.12 | (54) | 2.48-7.87 | (63-200) |
| **R6-52** | 2.05 | (52) | 1.97-6.89 | (50-175) | 2.91-7.83 | (74-199) | 2.56 | (65) | 2.95-9.84 | (75-250) |

## Cleanroom qualification of E6 E-Chains®

By eliminating the pin/bore connection, the unsupported E6 has very low abrasion and is suitable for cleanrooms

In many applications where cumbersome special solutions are used, a simple standard E-Chain® can be used instead. A comprehensive test program was devised and performed for both gliding use and unsupported use. For many applications, the E-Chains® in special materials are practically abrasion-free. Detailed tests results are available upon request. IPA tests confirm that standard igus® E-Chains® meet cleanroom requirements. “Tested and certified as very good!” In cleanrooms a very high resistance to wear of moving parts is required. Therefore, E-Chains® must be very resistant to wear In order to meet the standard requirements for such a sensitive environment.

Fraunhofer IPA TESTED DEVICE igus GmbH Energy chain / Cable systems Report No. IG 0704-400

**IPA classification - Report IG0704-400:**

- Special material “cleanroom” - **Class 1 according to standard DIN EN ISO 14644-1** - Note: None of the classes corresponding to the DIN EN ISO 14644-1 Class 1 is included in the US standard at v =( 0.5 m/s), a = (1.0 m/s²) - Series E6-29-060-150-0-CR
- Standard material - **Class 3 according to standard DIN EN ISO 14644-1** (according to US Fed. Stand. 209E, Class 1) at v = (0.5 m/s), a = (1.0 m/s²) Series E6-29-060-150-0 and v= 1m/s, a = 2m/s² Series E6-29-050-055-0 with inserted cables CF34-15-04, CF9-05-12, CF11-02-01-02-PBA-LC-D

# E-Chain System® E6
# Assembly Instructions

## System E6 E-Chains® - Assembling

Position side links ...

... gently twist and snap in

Gently insert connector by using a hammer

Position crossbars.
Push down and snap in

## E-Tubes - Assembling Lids

Insert lid ...

... push down and snap in

## E-Tubes - Separating Lids

Lever with screwdriver ...

... and remove lids by hand

## System E6 E-Chains® - Separating

Lever crossbars with screwdriver

Tap gently to remove connectors

Twist and ...

... separate side links

# E-Chain System® E6
# Series E6-29



## Price Index

Series E6-29

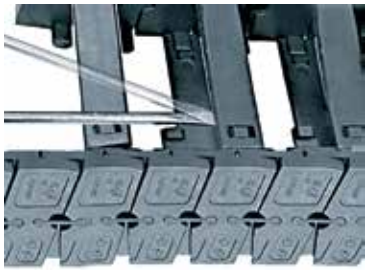
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 98.4 ft (30 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

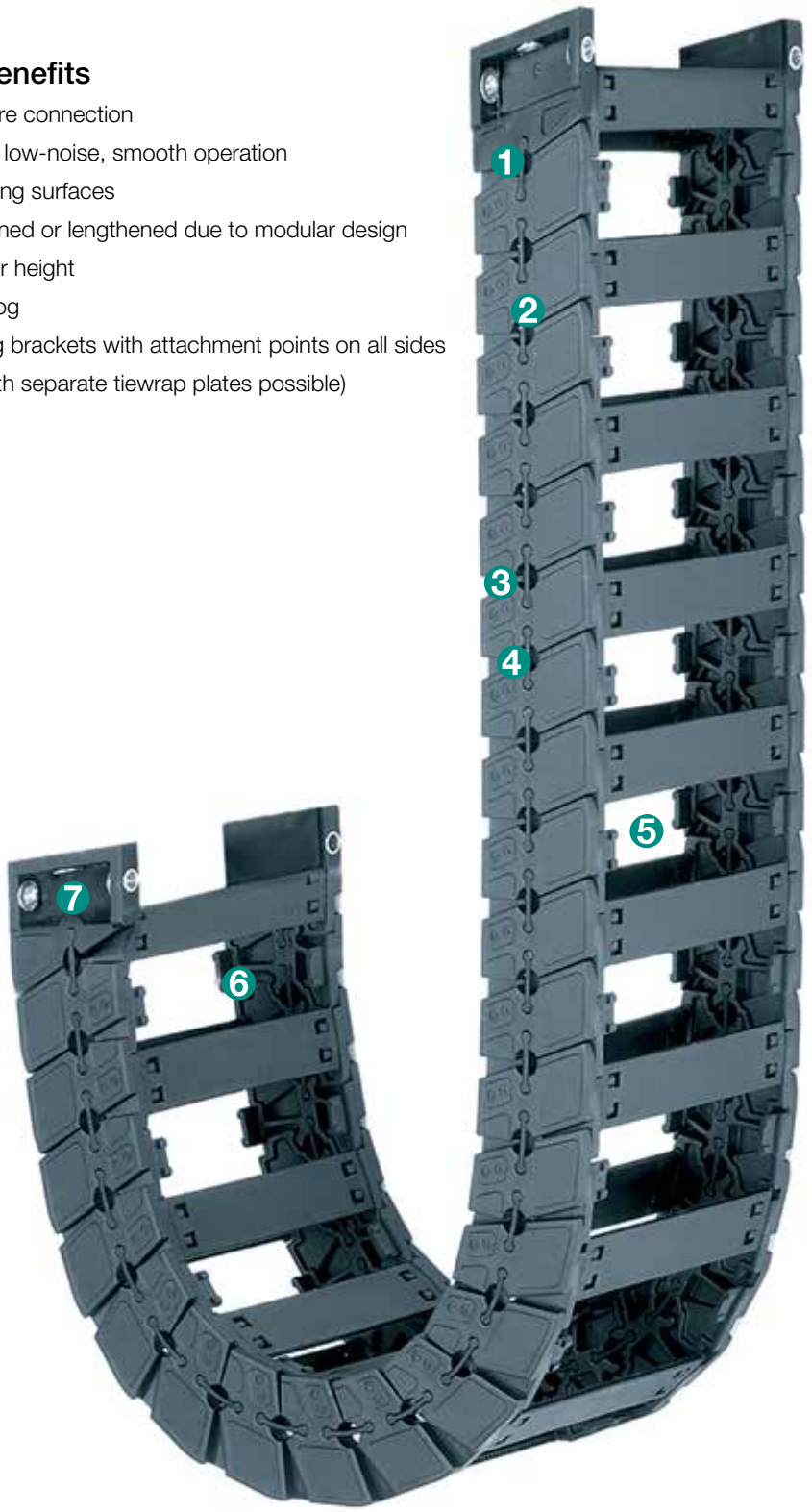
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 200/240/250 E2 Medium**
- For RBR (reverse bending radii)
  ➤ **Series 200/240/250 E2 Medium**
- For high additional loads
  ➤ **Series 200/240/250 E2 Medium**
- For very dirty environments
  ➤ **Series R6-29**

## Features & Benefits

1. No pin and bore connection
2. Small pitch for low-noise, smooth operation
3. Very large gliding surfaces
4. Can be shortened or lengthened due to modular design
5. Increased inner height
6. Interior stop dog
7. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **E6-29-100-075-0** | **E-Chain®** |
| With 2 separators **E6-29-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-290-100-12** | **Mounting Bracket** |

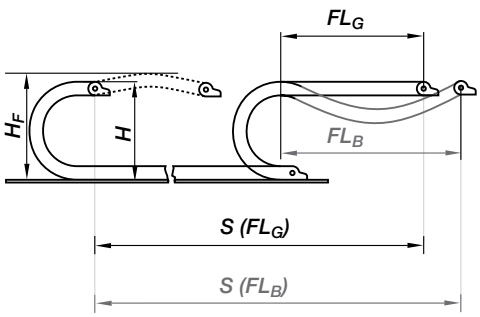
# E-Chain System® E6
# Series E6-29
# Installation Dimensions

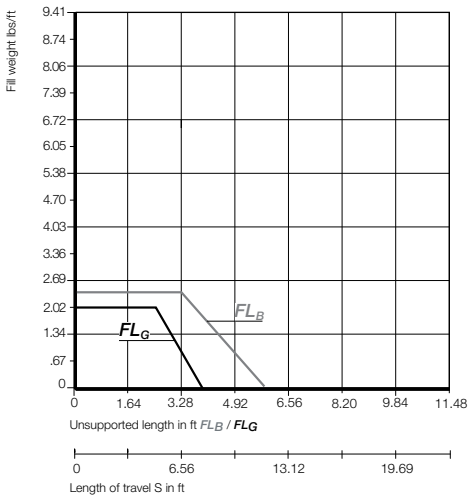


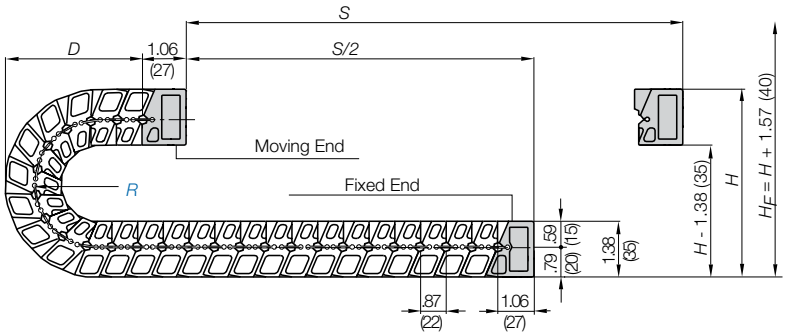
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .87" (22 mm)
**Links per ft (m): =** 13.79 (46)
**For center mount applications:**
**Chain length =** $S/2 + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
|---|---|---|---|---|
| H | 7.09 (180) | 8.66 (220) | 10.63 (270) | 14.57 (370) |
| D | 4.25 (108) | 5.04 (128) | 6.02 (153) | 7.99 (203) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 20.47 (520) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
|---|---|
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

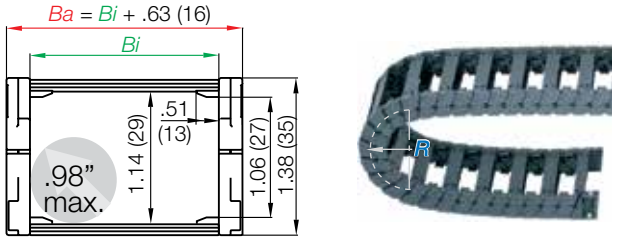
Details of material properties
➤ **Design, Chapter 1**

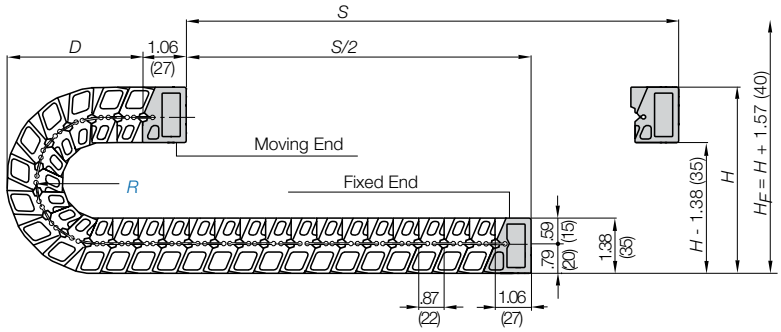
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-29

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E6-29 - E-Chain® with crossbars every link






**Part Number Structure**

E6-29-100-100-0

- Color - Black
- Bending radius
- Width
- Series

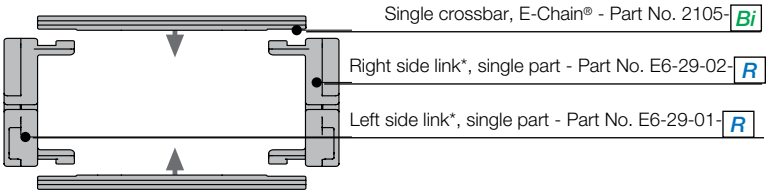
Supplement part number with required radius. Example: E6-29-100-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-29-030-□-0 | 1.18 (30) | 1.81 (46) | ≈ 0.49 (0.73) |
| E6-29-040-□-0 | 1.57 (40) | 2.20 (56) | ≈ 0.50 (0.75) |
| E6-29-050-□-0 | 1.97 (50) | 2.60 (66) | ≈ 0.52 (0.78) |
| E6-29-060-□-0 | 2.36 (60) | 2.99 (76) | ≈ 0.54 (0.80) |
| E6-29-070-□-0 | 2.76 (70) | 3.39 (86) | ≈ 0.56 (0.83) |
| E6-29-080-□-0 | 3.15 (80) | 3.78 (96) | ≈ 0.57 (0.85) |
| E6-29-090-□-0 | 3.54 (90) | 4.17 (106) | ≈ 0.59 (0.88) |
| E6-29-100-□-0 | 3.94 (100) | 4.57 (116) | ≈ 0.60 (0.90) |
| E6-29-110-□-0 | 4.33 (110) | 4.96 (126) | ≈ 0.62 (0.93) |
| E6-29-120-□-0 | 4.72 (120) | 5.35 (136) | ≈ 0.64 (0.95) |
| E6-29-140-□-0 | 5.51 (140) | 6.14 (156) | ≈ 0.67 (1.00) |

Choose from the radii below for all of the above sizes
Radius (mm) Example: E6-29-100-100-0

| | 055 | 075 | 100 | 150 |
|---|---|---|---|---|
| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
| H | 7.09 (180) | 8.66 (220) | 10.63 (270) | 14.57 (370) |
| D | 4.25 (108) | 5.04 (128) | 6.02 (153) | 7.99 (203) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 20.47 (520) |

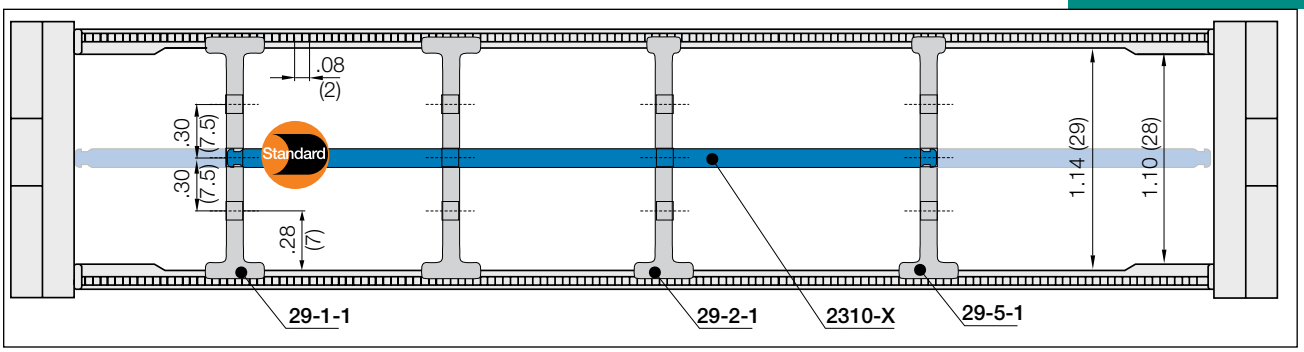
## E-Chain® as separate parts, links and side plates



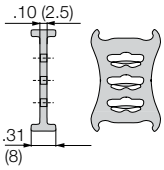

*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part - Part No. E6-29-140

# E-Chain System® E6
# Series E6-29
# Interior Separation - New Generation



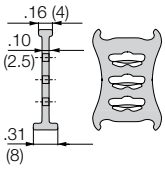

Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 29-1** |
| Assembled | **Part No. 29-1-1** |

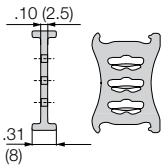
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 29-2** |
| Assembled | **Part No. 29-2-1** |

- **Separator 29-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

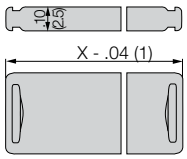



**Notch separator, for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 29-5** |
| Assembled | **Part No. 29-5-1** |

- **Separator 29-5**
  **Locks safely in .08 (2 mm) increments**
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. E6-29-02-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

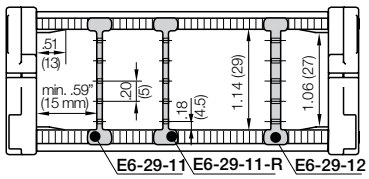
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

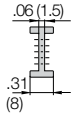
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E6
# Series E6-29
# Interior Separation - Previous Generation

## Vertical separators

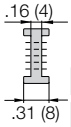
Vertical separators are used if a vertical subdivision of the E-Chain® interior is re-quired. By standard, vertical separators are assembled every other E-Chain® link.



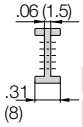

| Vertical Separator | |
|---|---|
| Unassembled | **E6-29-01** |
| Assembled | **E6-29-11** |

- **Slotted vertical separator E6-29-01**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 111-X




| Vertical Separator | |
|---|---|
| Unassembled | **E6-29-02** |
| Assembled | **E6-29-12** |

- **Vertical separator E6-29-02**
  For use with side plate E6-29-13, full-width shelf 221-X and shelf 2210-X

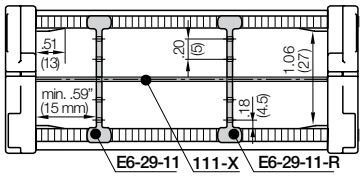


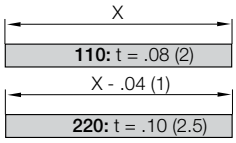

| Vertical Separator | |
|---|---|
| Unassembled | **E6-29-01R** |
| Assembled | **E6-29-11R** |

- **Locking separator E6-29-01R**
  Can be locked onto crossbars in .08" (2mm) increments. For side-mounted applications use with full-width shelf 111-X

## Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-29-11** and locking separator **E6-29-11-R.**
Full-width shelf **221-X** can be used with vertical separator **E6-29-12**, side plate **E6-29-13**



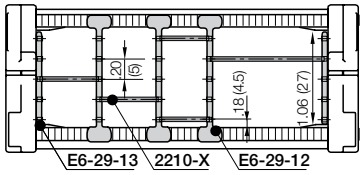

**Shelves 110-X/220-XX**
Shelves can be inserted at 5 different heights in .20" (5mm) increments

| Width X in. (mm) | Part No. Unassembled 110-X | 220-X | Part No. Assembled 111-X | 221-X |
|---|---|---|---|---|
| 1.18 (030) | **110-30** | **220-30** | **111-30** | **221-30** |
| 1.57 (040) | **110-40** | **220-40** | **111-40** | **221-40** |
| 1.97 (050) | **110-50** | **220-50** | **111-50** | **221-50** |
| 2.36 (060) | **110-60** | **220-60** | **111-60** | **221-60** |
| 2.76 (070) | **110-70** | **220-70** | **111-70** | **221-70** |

| Width X in. (mm) | Part No. Unassembled 110-X | 220-X | Part No. Assembled 111-X | 221-X |
|---|---|---|---|---|
| 3.15 (080) | **110-80** | **220-80** | **111-80** | **221-80** |
| 3.54 (090) | **110-90** | **220-90** | **111-90** | **221-90** |
| 3.94 (100) | **110-100** | **220-100** | **111-100** | **221-100** |
| 4.33 (110) | **110-110** | **220-110** | **111-110** | **221-110** |
| 4.72 (120) | **110-120** | **220-120** | **111-120** | **221-120** |

## Shelves

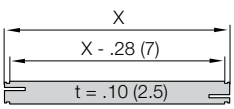
These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

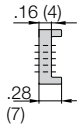



**Shelves 2200-XX**
**Shelf 2210-X** can be used with **vertical separator E6-29-12** and **side plate E6-29-13**

| Width X in. (mm) | Part No. Unassembled 2200-XX | Part No. Assembled 2210-XX |
|---|---|---|
| .71 (18) | **2200-18** | **2210-18** |
| .91 (23) | **2200-23** | **2210-23** |
| 1.10 (28) | **2200-28** | **2210-28** |
| 1.30 (33) | **2200-33** | **2210-33** |
| 1.50 (38) | **2200-38** | **2210-38** |
| 1.69 (43) | **2200-43** | **2210-43** |

| Width X in. (mm) | Part No. Unassembled 2200-XX | Part No. Assembled 2210-XX |
|---|---|---|
| 1.89 (48) | **2200-48** | **2210-48** |
| 2.28 (58) | **2200-58** | **2210-58** |
| 2.68 (68) | **2200-68** | **2210-68** |
| 2.87 (73) | **2200-73** | **2210-73** |
| 3.46 (88) | **2200-88** | **2210-88** |
| 3.90 (99) | **2200-99** | **2210-99** |




| Slotted Separator | |
|---|---|
| Unassembled | **E6-29-03** |
| Assembled | **E6-29-13** |

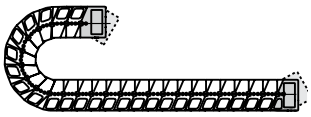
- **Side plate, slotted**
  This separator is used for general subdivision of E-Chains®.

# E-Chain System® E6
# Series E6-29
# Mounting Brackets - KMA / Strain Relief

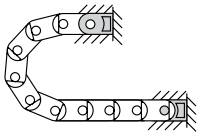
## KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

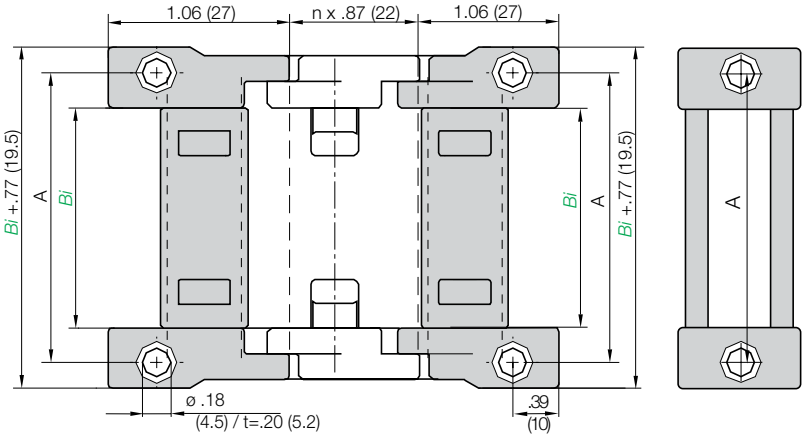
Moving end
E6-290...2



Fixed end
E6-290...1



Possible installation configurations -




### Part Number Structure

E6-290- | 030- | 12

- 12 – Complete Set
- 030 – Width
- E6-290 – Mounting brackets for selected chain type

**Full set, for both ends:**

E6-290- 030- 12 Full set, **both fixed and moving end**

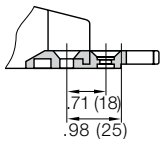
**Single-part order:**

E6-290 - 030- 1 Mounting bracket **fixed end**

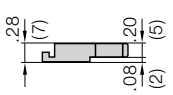
E6-290 - 030- 2 Mounting bracket **moving end**

| For Series | Part No. Full Set | Dimension A in. | (mm) | For Series | Part No. Full Set | Dimension A in. | (mm) |
|---|---|---|---|---|---|---|---|
| E6-29-030 | **E6-290-030-12** | 1.57 | (40) | E6-29-090 | **E6-290-090-12** | 3.94 | (100) |
| E6-29-040 | **E6-290-040-12** | 1.97 | (50) | E6-29-100 | **E6-290-100-12** | 4.33 | (110) |
| E6-29-050 | **E6-290-050-12** | 2.36 | (60) | E6-29-110 | **E6-290-110-12** | 4.72 | (120) |
| E6-29-060 | **E6-290-060-12** | 2.76 | (70) | E6-29-120 | **E6-290-120-12** | 5.12 | (130) |
| E6-29-070 | **E6-290-070-12** | 3.15 | (80) | E6-29-140 | **E6-290-140-12** | 5.91 | (150) |
| E6-29-080 | **E6-290-080-12** | 3.54 | (90) | | | | |

## Tiewrap Plates



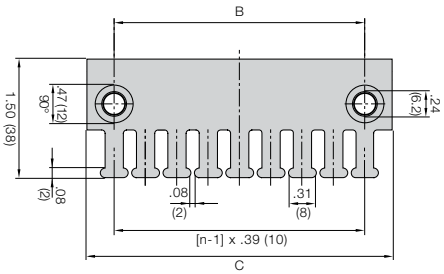

Shown assembled




Single tiewrap plate

### Tiewrap plates as an individual part

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




Other strain relief elements - optional

➤ Strain Relief, Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series R6-29



## Price Index

Series R6-29

## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips

Lever and remove lids

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 98.4 ft (30 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 2480 E2 Tubes**
- For RBR (reverse bending radii)
  ➤ **Series 2480 E2 Tubes**
- For high additional loads
  ➤ **Series 2480 E2 Tubes**

## Features & Benefits

1. Fully enclosed E-Tube
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
6. Can be shortened or lengthened due to modular design
7. Small pitch for low-noise, smooth operation

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **R6-29-080-100-0** | **E-Tube** |
| With 2 separators **R6-29-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **R6-290-080-12** | **Mounting Bracket** |

# E-Chain System® E6
# Series R6-29
# Installation Dimensions

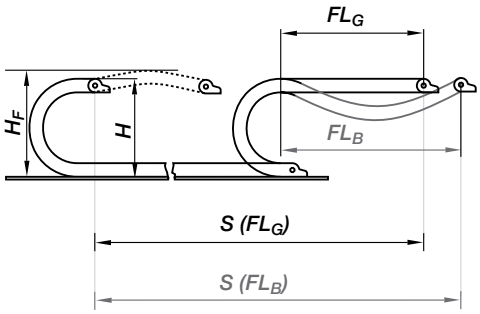


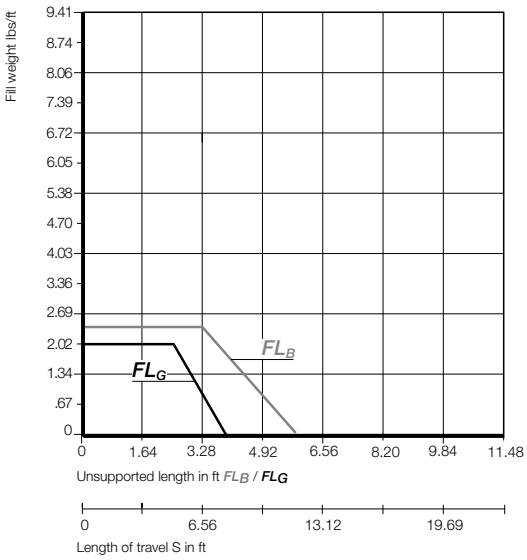
**Short travel, unsupported length**

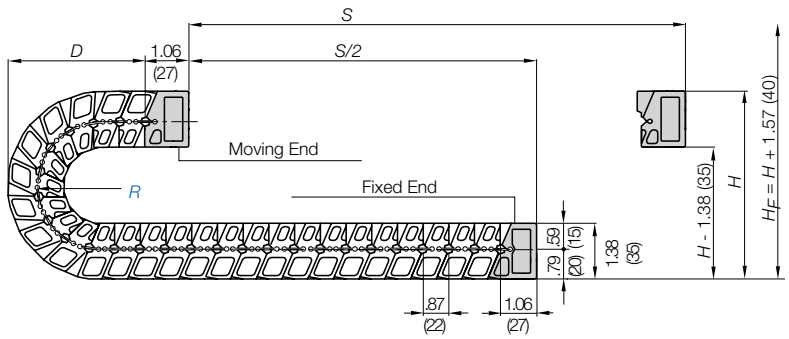
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .87" (22 mm)
**Links per ft (m): =** 13.79 (46)
**For center mount applications:**
**Chain length =** $_{S}/_{2}$ + K

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
|---|---|---|---|---|
| H | 7.09 (180) | 8.66 (220) | 10.63 (270) | 14.57 (370) |
| D | 4.25 (108) | 5.04 (128) | 6.02 (153) | 7.99 (203) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 20.47 (520) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

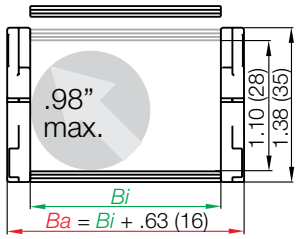
## Technical Data

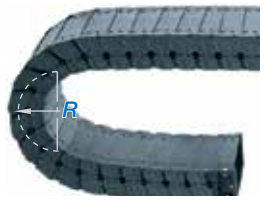
Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series R6-29
# Interior Separation

## Series R6-29 - E-Tube, removable lids along the inner and outer radius

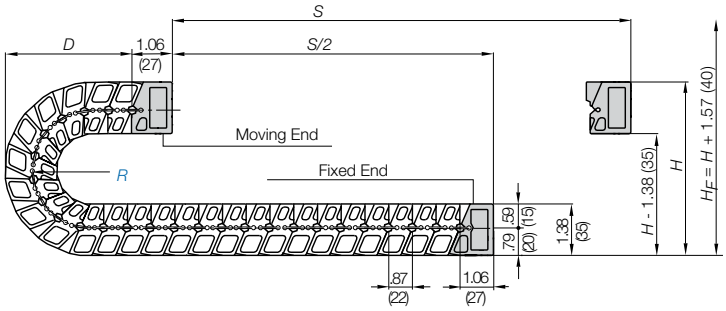


**Part Number Structure**

R6-29- 080- 100- 0

- Color - Black
- Bending radius
- Width
- Series



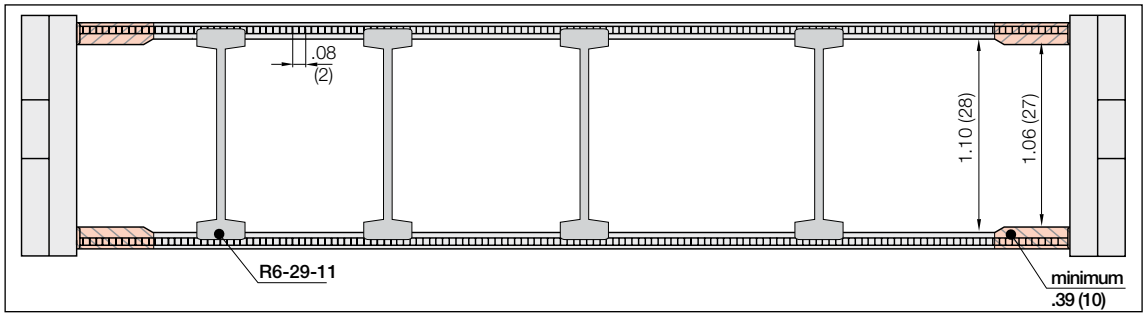

Supplement part number with required radius.
Example: R6-29-080-100-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| R6-29-030- ☐ -0 | 1.18 (30) | 1.81 (46) | ≈ 0.54 (0.80) |
| R6-29-040- ☐ -0 | 1.57 (40) | 2.20 (56) | ≈ 0.57 (0.85) |
| R6-29-050- ☐ -0 | 1.97 (50) | 2.60 (66) | ≈ 0.60 (0.89) |
| R6-29-060- ☐ -0 | 2.36 (60) | 2.99 (76) | ≈ 0.63 (0.94) |
| R6-29-080- ☐ -0 | 3.15 (80) | 3.78 (96) | ≈ 0.69 (1.03) |
| R6-29-110- ☐ -0 | 4.33 (110) | 4.96 (126) | ≈ 0.79 (1.18) |
| R6-29-120- ☐ -0 | 4.72 (120) | 5.35 (136) | ≈ 0.82 (1.22) |

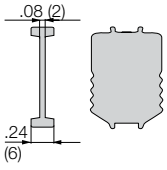
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R6-29-080-100-0

| | 055 | 075 | 100 | 150 |
|---|---|---|---|---|
| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
| H | 7.09 (180) | 8.66 (220) | 10.63 (270) | 14.57 (370) |
| D | 4.25 (108) | 5.04 (128) | 6.02 (153) | 7.99 (203) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 20.47 (520) |

### Vertical separators




Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator for E-Tubes**

| | |
|---|---|
| Unassembled | **Part No. R6-29-01** |
| Assembled | **Part No. R6-29-11** |

- **Vertical separator R6-29-01**
  This separator is used for general subdivision of E-Tubes. Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

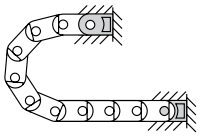
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E6
# Series R6-29
# Mounting Bracket - KMA / Strain Relief

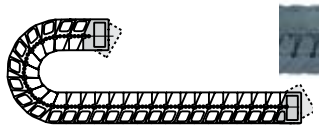
## Option 1: KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

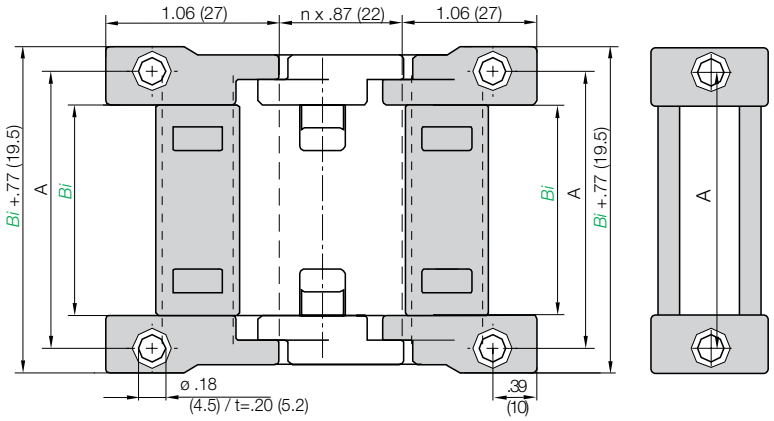
Moving end
R6-290...2



Possible installation configurations -



Fixed end
R6-290...1




**Part Number Structure**

| R6-290- | 030- | 12 |
|---|---|---|

- 12 — Complete Set
- 030 — Width
- R6-290- — Mounting brackets for selected chain type

| For Series | Part No. Full Set | Dimension A in. | (mm) |
|---|---|---|---|
| R6-290-030 | **R6-290-030-12** | 1.57 | (40) |
| R6-290-040 | **R6-290-040-12** | 1.97 | (50) |
| R6-290-050 | **R6-290-050-12** | 2.36 | (60) |
| R6-290-060 | **R6-290-060-12** | 2.76 | (70) |
| R6-290-080 | **R6-290-080-12** | 3.54 | (90) |
| R6-290-110 | **R6-290-110-12** | 4.72 | (120) |
| R6-290-120 | **R6-290-120-12** | 5.12 | (130) |

**Full set, for both ends:**

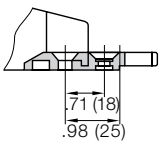
R6-290- 030- 12 Full set, **both fixed and moving end**

**Single-part order:**

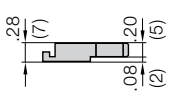
R6-290 - 025- 1 Mounting bracket **fixed end**

R6-290 - 025- 2 Mounting bracket **moving end**

## Tiewrap Plates




Shown assembled

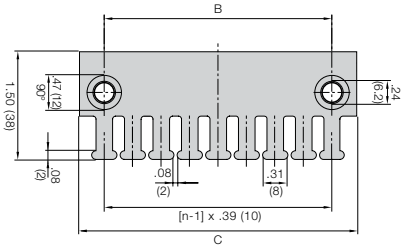



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

**Other strain relief elements**

➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-35

1.38

## Price Index

Series E6-35

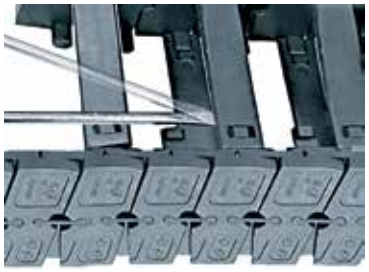
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 98.4 ft (30 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

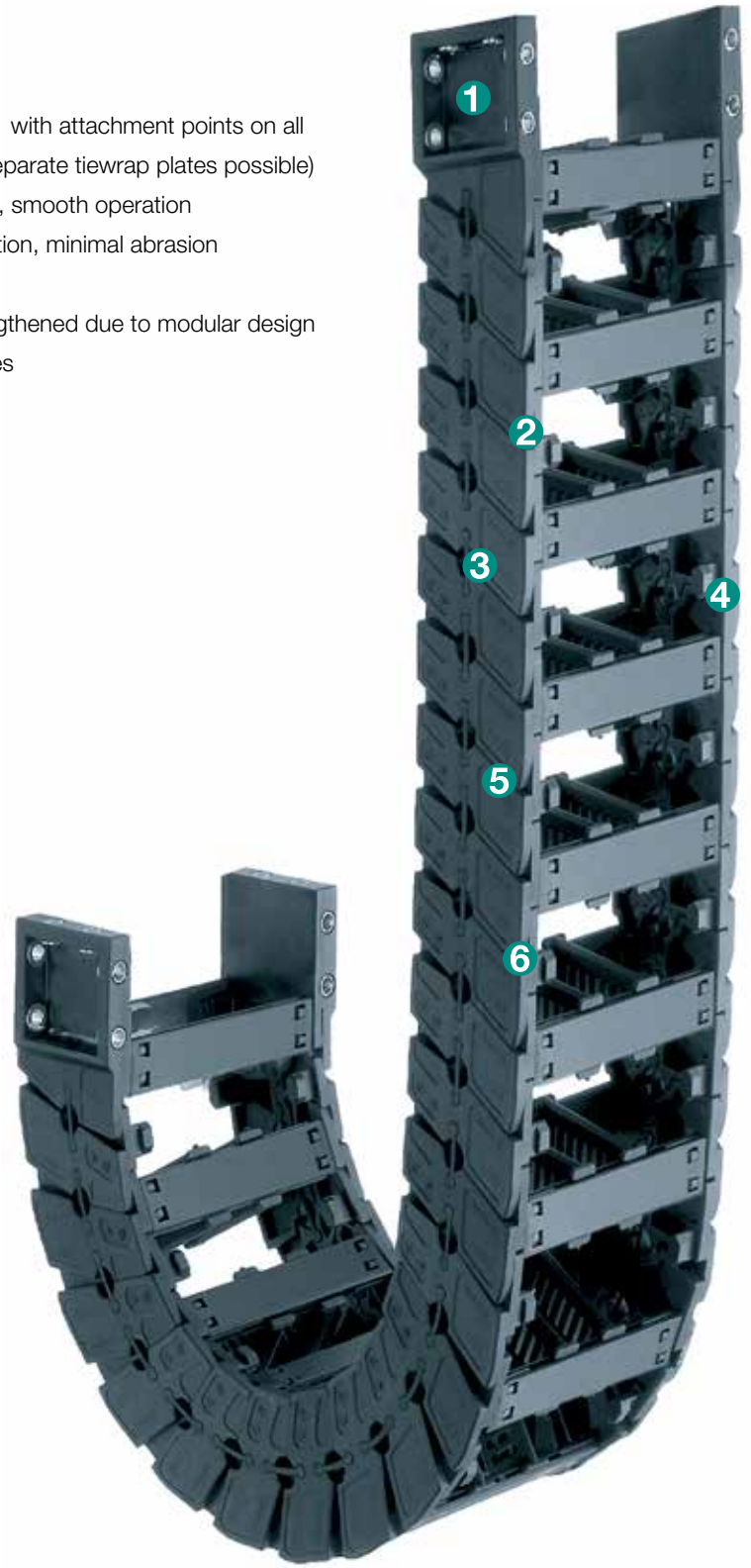
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- If a fully enclosed tube is required
  ➤ **Series R58 E2 Tubes**
- For side mounted applications
  ➤ **Series 2828 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 280 E4/100**
- For high additional loads
  ➤ **Series 2828 E4/4**
- For dirty environments
  ➤ **Series 2828 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Very large gliding surfaces




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **E6-35-100-055-0** | **E-Chain®** |
| With 2 separators **E6-35-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-350-100-12** | **Mounting Bracket** |

# E-Chain System® E6
# Series E6-35
# Installation Dimensions

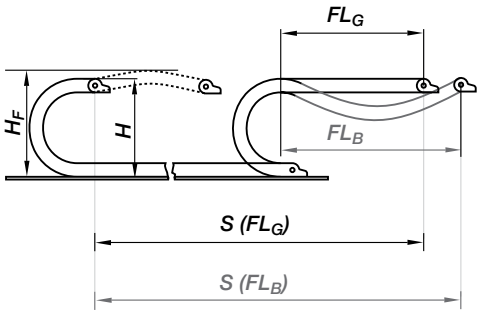


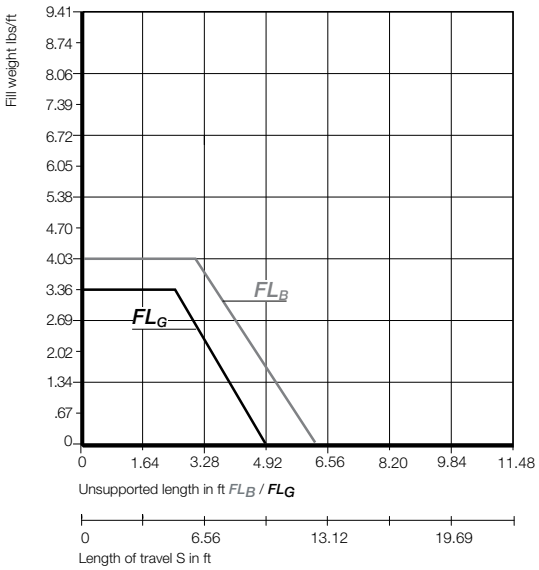


**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1



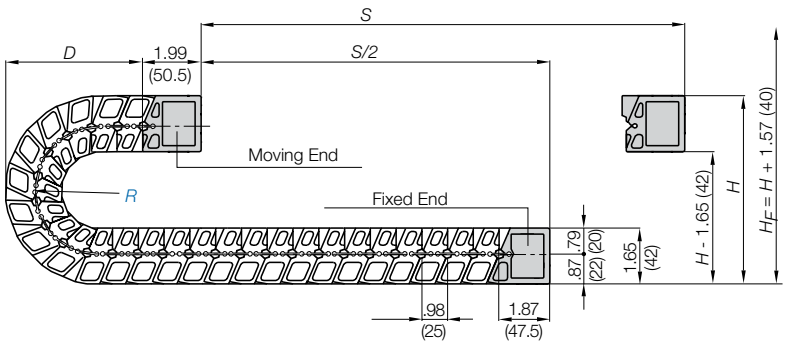




## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height




**Pitch per link: =** .98" (25 mm)
**Links per ft (m): =** 12.19 (40)
**For center mount applications:**
**Chain length =** $^{S}/_{2}$ + K

The required clearance height: ***$H_F$ = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
|---|---|---|---|---|
| H | 7.44 (189) | 9.01 (229) | 10.98 (279) | 14.92 (379) |
| D | 4.53 (115) | 5.31 (135) | 6.30 (160) | 8.27 (210) |
| K | 8.86 (225) | 11.42 (290) | 14.37 (365) | 20.67 (525) |

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

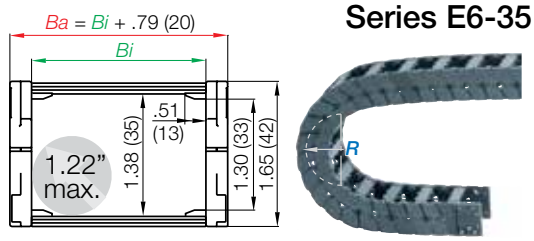
Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-35

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

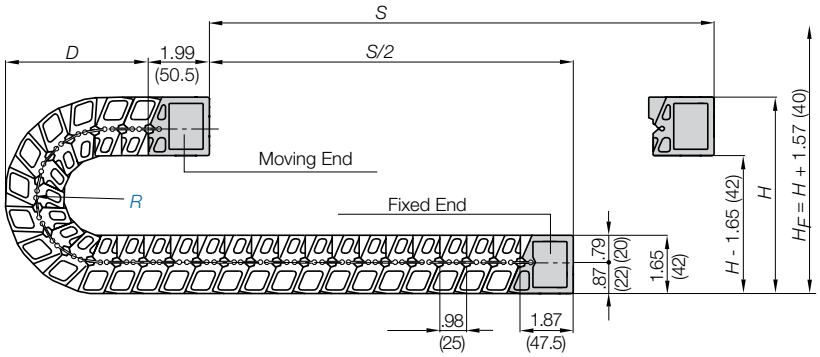
## Series E6-35 - E-Chain® with crossbars every other link



Part Number Structure

E6-35- 100- 055- 0

- Color - Black
- Bending radius
- Width
- Series



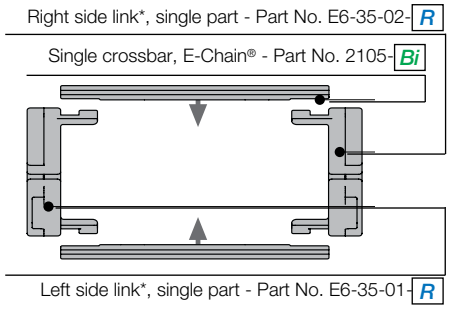

Supplement part number with required radius.
Example: E6-35-100- 055 -0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.19 (40)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-35-030- ☐ -0 | 1.18 (30) | 1.97 (50) | ≈ 0.59 (0.88) |
| E6-35-040- ☐ -0 | 1.57 (40) | 2.36 (60) | ≈ 0.54 (0.90) |
| E6-35-050- ☐ -0 | 1.97 (50) | 2.76 (70) | ≈ 0.90 (0.92) |
| E6-35-060- ☐ -0 | 2.36 (60) | 3.15 (80) | ≈ 0.63 (0.94) |
| E6-35-070- ☐ -0 | 2.76 (70) | 3.54 (90) | ≈ 0.65 (0.96) |
| E6-35-080- ☐ -0 | 3.15 (80) | 3.94 (100) | ≈ 0.66 (0.99) |
| E6-35-090- ☐ -0 | 3.54 (90) | 4.33 (110) | ≈ 0.68 (1.01) |
| E6-35-100- ☐ -0 | 3.94 (100) | 4.72 (120) | ≈ 0.69 (1.03) |
| E6-35-110- ☐ -0 | 4.33 (110) | 5.12 (130) | ≈ 0.76 (1.05) |
| E6-35-120- ☐ -0 | 4.72 (120) | 5.51 (140) | ≈ 0.72 (1.07) |
| E6-35-140- ☐ -0 | 5.51 (140) | 6.30 (160) | ≈ 0.75 (1.11) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E6-35-100- 055 -0

| | 055 | 075 | 100 | 150 |
|---|---|---|---|---|
| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 5.91 (150) |
| H | 7.44 (189) | 9.01 (229) | 10.98 (279) | 14.92 (379) |
| D | 4.53 (115) | 5.31 (135) | 6.30 (160) | 8.27 (210) |
| K | 8.86 (225) | 11.42 (290) | 14.37 (365) | 20.67 (525) |

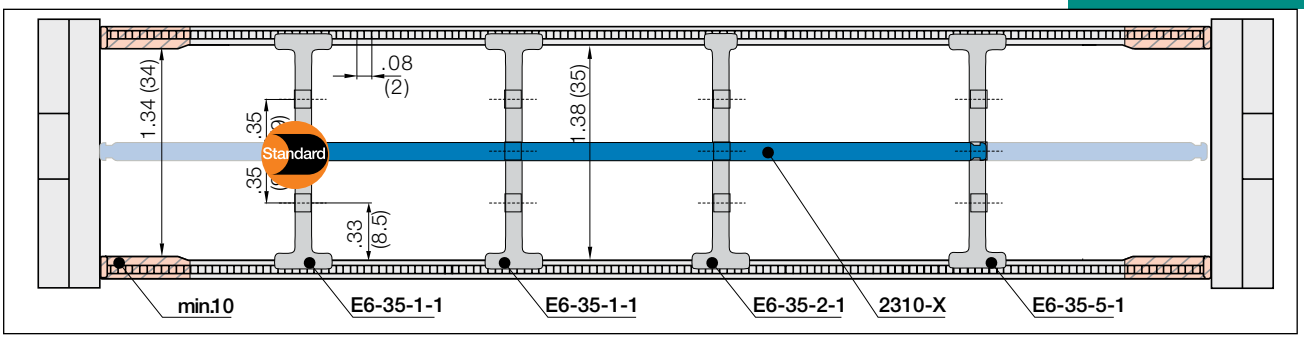
## E-Chain® as separate parts, links and side plates



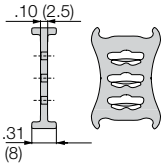
Polymer spring as single part -
Part No. E6-35-150

*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E6
# Series E6-35
# Interior Separation - New Generation



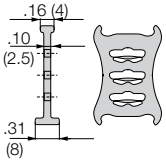

Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. E6-35-1** |
| Assembled | **Part No. E6-35-1-1** |

- **Standard separator E6-35-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

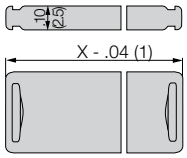



**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. E6-35-2** |
| Assembled | **Part No. E6-35-2-1** |

- **Separator E6-35-2**
  **For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. E6-35-02-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

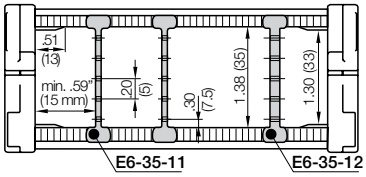
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-35
# Interior Separation - Previous Generation

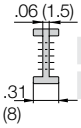
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



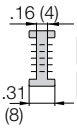

- **Slotted vertical separator E6-35-01**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 111-X.




**Vertical Separator, Slotted**

| | |
|---|---|
| Unassembled | **Part No. E6-35-01** |
| Assembled | **Part No. E6-35-11** |

- **Vertical separator E6-35-02**
  For use with side plate E6-35-13, full-width shelf 221-X and shelf 2210-X



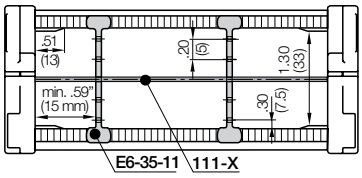

**Vertical Separator**

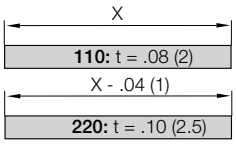
| | |
|---|---|
| Unassembled | **Part No. E6-35-02** |
| Assembled | **Part No. E6-35-12** |

## Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **111-X** can be used with vertical separator **E6-35-11**
Full-width shelf **221-X** can be used with vertical separator **E6-35-12**

**Shelves 110-X/220-XX**
Shelves can be inserted at 5 different heights in .20" (5mm) increments



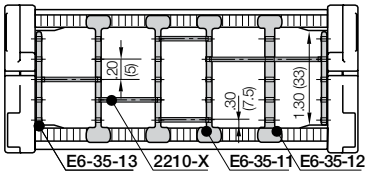




| Width X in. (mm) | Part No. Unassembled 110-X | Part No. Unassembled 220-X | Part No. Assembled 111-X | Part No. Assembled 221-X |
|---|---|---|---|---|
| 1.18 (030) | **110-30** | **220-30** | **111-30** | **221-30** |
| 1.57 (040) | **110-40** | **220-40** | **111-40** | **221-40** |
| 1.97 (050) | **110-50** | **220-50** | **111-50** | **221-50** |
| 2.36 (060) | **110-60** | **220-60** | **111-60** | **221-60** |
| 2.76 (070) | **110-70** | **220-70** | **111-70** | **221-70** |

| Width X in. (mm) | Part No. Unassembled 110-X | Part No. Unassembled 220-X | Part No. Assembled 111-X | Part No. Assembled 221-X |
|---|---|---|---|---|
| 3.15 (080) | **110-80** | **220-80** | **111-80** | **221-80** |
| 3.54 (090) | **110-90** | **220-90** | **111-90** | **221-90** |
| 3.94 (100) | **110-100** | **220-100** | **111-100** | **221-100** |
| 4.33 (110) | **110-110** | **220-110** | **111-110** | **221-110** |
| 4.72 (120) | **110-120** | **220-120** | **111-120** | **221-120** |

## Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 5 different heights in .20" (5mm) increments

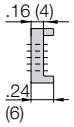



**Shelves 2200-XX**
**Shelf 2210-X** can be used with **vertical separator E6-35-12** and **side plate E6-35-13**

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|
| .71 (18) | **2200-18** | **2210-18** |
| .91 (23) | **2200-23** | **2210-23** |
| 1.10 (28) | **2200-28** | **2210-28** |
| 1.30 (33) | **2200-33** | **2210-33** |
| 1.50 (38) | **2200-38** | **2210-38** |
| 1.69 (43) | **2200-43** | **2210-43** |

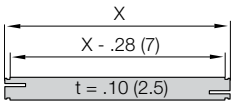
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|
| 1.89 (48) | **2200-48** | **2210-48** |
| 2.28 (58) | **2200-58** | **2210-58** |
| 2.68 (68) | **2200-68** | **2210-68** |
| 2.87 (73) | **2200-73** | **2210-73** |
| 3.46 (88) | **2200-88** | **2210-88** |
| 3.90 (99) | **2200-99** | **2210-99** |

- **Side plate**
  This separator is used for general subdivision of E-Chains®.




**Side Plate**

| | |
|---|---|
| Unassembled | **Part No. E6-35-03** |
| Assembled | **Part No. E6-35-13** |

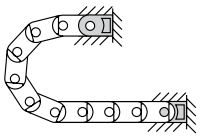


# E-Chain System® E6
# Series E6-35
# Mounting Bracket - KMA / Strain Relief

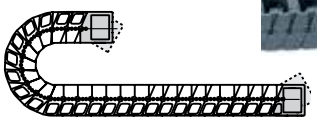
## KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

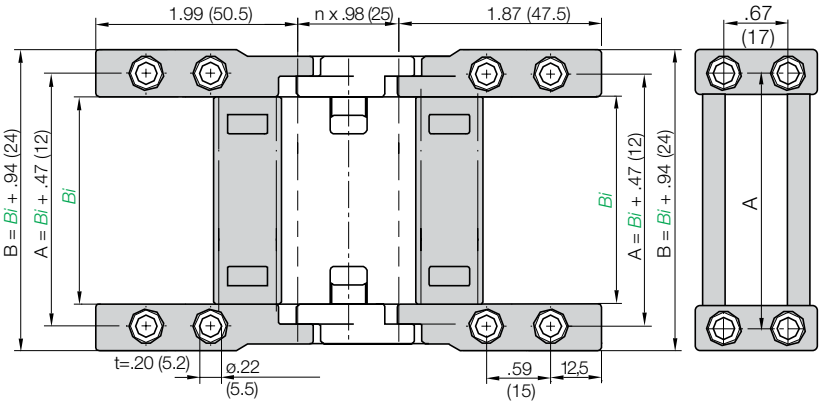
Moving end
E6-350...2



Possible installation configurations -



Fixed end
E6-350...1




### Part Number Structure

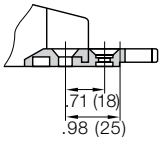
| E6-350- | 040- | 12 |
|---|---|---|

12 – Complete Set
040 – Width
E6-350 – Mounting brackets for selected chain type

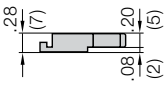
| For Series | Part No. Full Set | Dimension B in. | Dimension B (mm) | Dimension A in. | Dimension A (mm) | Bi (mm) |
|---|---|---|---|---|---|---|
| E6-35-030 | **E6-350-030-12** | 2.13 | (54) | 1.65 | (42) | 30 |
| E6-35-040 | **E6-350-040-12** | 2.52 | (64) | 2.05 | (52) | 40 |
| E6-35-050 | **E6-350-050-12** | 2.91 | (74) | 2.44 | (62) | 50 |
| E6-35-060 | **E6-350-060-12** | 3.31 | (84) | 2.83 | (72) | 60 |
| E6-35-070 | **E6-350-070-12** | 3.70 | (94) | 3.23 | (82) | 70 |
| E6-35-080 | **E6-350-080-12** | 4.09 | (104) | 3.62 | (92) | 80 |
| E6-35-090 | **E6-350-090-12** | 4.49 | (114) | 4.02 | (102) | 90 |
| E6-35-100 | **E6-350-100-12** | 4.88 | (124) | 4.41 | (112) | 100 |
| E6-35-110 | **E6-350-110-12** | 5.28 | (134) | 4.80 | (122) | 110 |
| E6-35-120 | **E6-350-120-12** | 5.67 | (144) | 5.20 | (132) | 120 |
| E6-35-140 | **E6-350-140-12** | 6.46 | (164) | 5.98 | (152) | 140 |

**Full set, for both ends:**
E6-350- 040- 12 Full set, **both fixed and moving end**
**Single-part order:**
E6-350 - 040- 1 Mounting bracket **fixed end**
E6-350 - 040- 2 Mounting bracket **moving end**

## Tiewrap Plates




Shown assembled

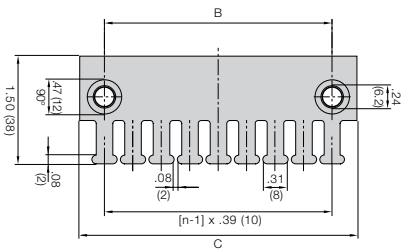



Single tiewrap plate

### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-40

1.57

## Price Index

Series E6-40

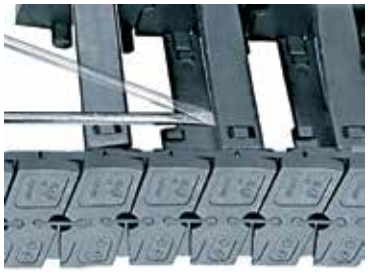
## Special Options Available

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 98.4 ft (30 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

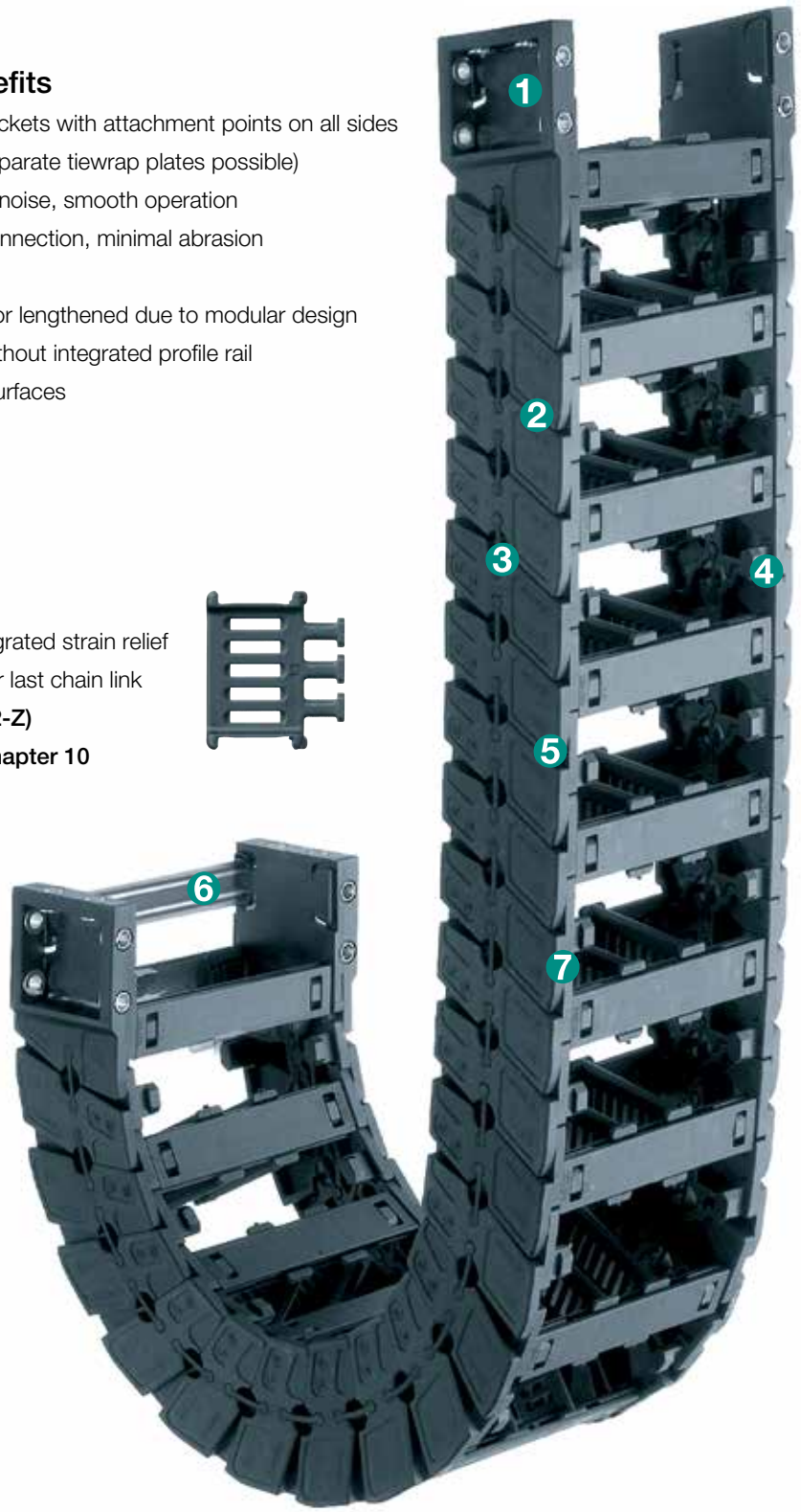
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 2828 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 280 E4/100**
- For high additional loads
  ➤ **Series 2828 E4/4**
- For dirty environments
  ➤ **Series 2828 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Small pitch for low-noise, smooth operation
3. No pin and bore connection, minimal abrasion
4. Interior stop dog
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces




● Also available:
Separator with integrated strain relief for use in the first or last chain link
**(Part No. E6-40-02-Z)**
➤ **Strain Relief, Chapter 10**



## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

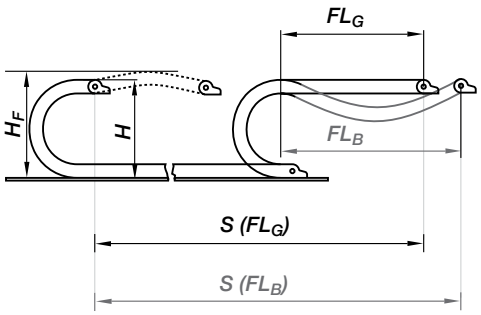
| | |
|---|---|
| 6.56 ft (2 m) **E6-40-100-075-0** | **E-Chain®** |
| With 2 separators **28222** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-400-100-12** | **Mounting Bracket** |

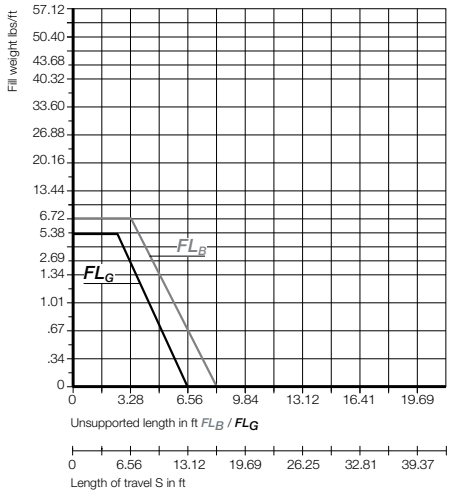
# E-Chain System® E6
# Series E6-40
# Installation Dimensions

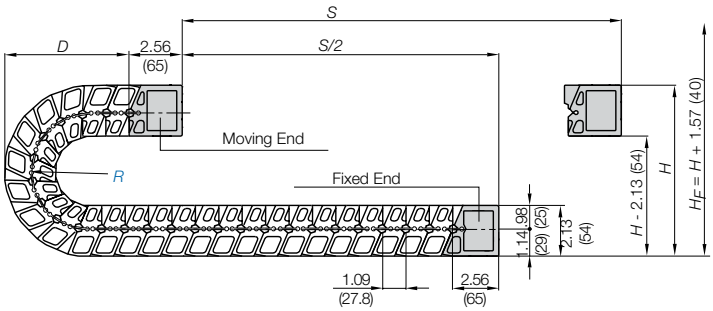
**Short travel, unsupported length**

- $FL_B$ = unsupported with permitted sag
- $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** 1.09" (27.8 mm)
**Links per ft (m): =** 10.97 (36)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|---|---|
| H | 8.82 (224) | 9.76 (248) | 11.73 (298) | 13.71 (348) | 15.67 (398) | 19.61 (498) |
| D | 5.28 (134) | 5.75 (146) | 6.73 (171) | 7.72 (196) | 8.70 (221) | 10.67 (271) |
| K | 10.04 (255) | 11.61 (295) | 14.57 (370) | 17.72 (450) | 20.87 (530) | 26.97 (685) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
|---|---|
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ **Design, Chapter 1**

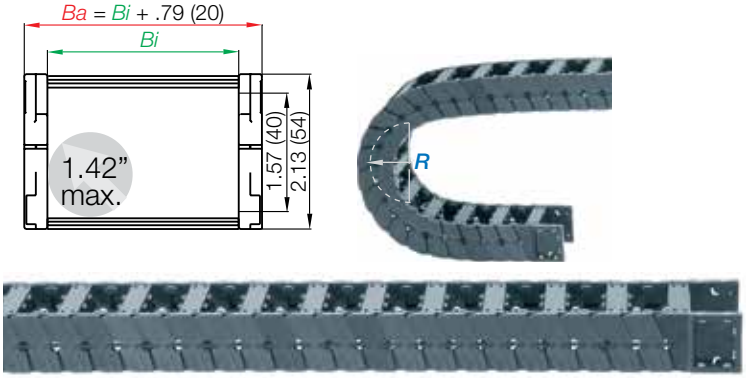


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-40

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E6-40 - E-Chain® with crossbars every other link

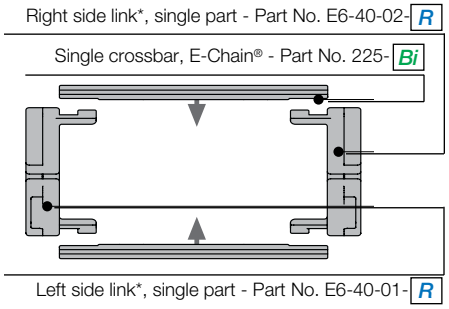


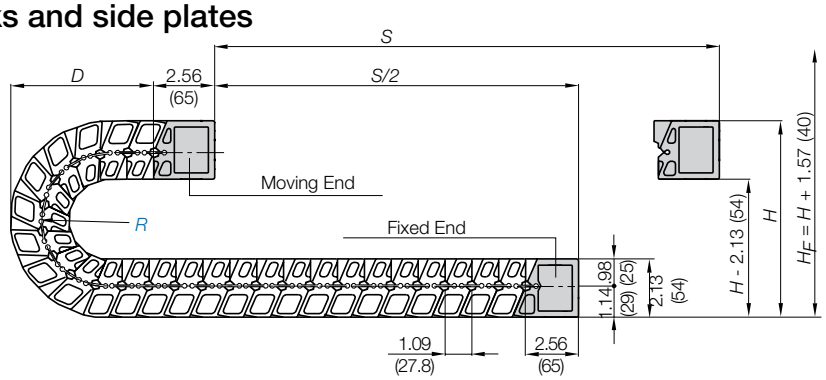

**Part Number Structure**

E6-40-100-100-0

- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, links and side plates



**Polymer spring as single part - Part No. E6-40-177**

*View from the fixed point of the E-Chain®/E-Tube

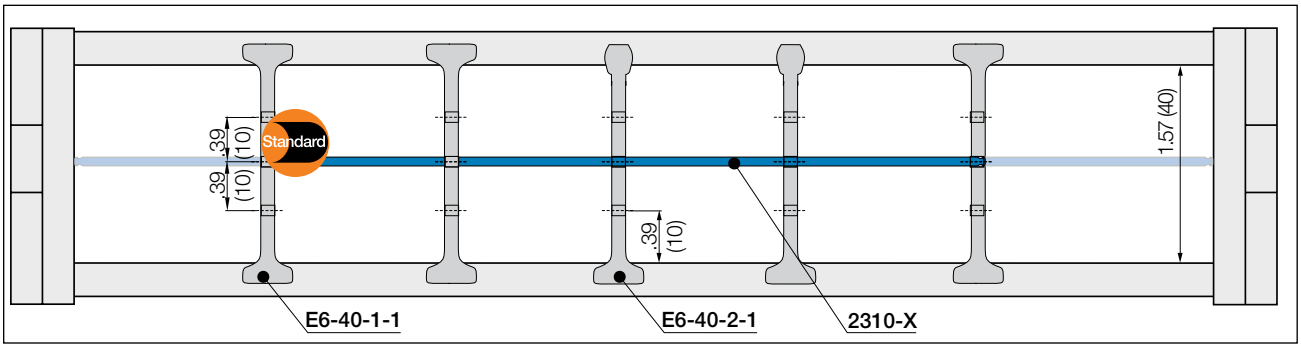
**Supplement part number with required radius. Example: E6-40-100-[100]-0**
**Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)**

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-40-040-[ ]-0 | 1.57 (40) | 2.36 (60) | ≈ 0.87 (1.29) |
| E6-40-050-[ ]-0 | 1.97 (50) | 2.76 (70) | ≈ 0.89 (1.33) |
| E6-40-052-[ ]-0 | 2.05 (52) | 2.83 (72) | ≈ 0.90 (1.34) |
| E6-40-062-[ ]-0 | 2.44 (62) | 3.23 (82) | ≈ 0.93 (1.38) |
| E6-40-070-[ ]-0 | 2.76 (70) | 3.54 (90) | ≈ 0.95 (1.41) |
| E6-40-075-[ ]-0 | 2.95 (75) | 3.74 (95) | ≈ 0.96 (1.43) |
| E6-40-087-[ ]-0 | 3.42 (87) | 4.21 (107) | ≈ 0.99 (1.48) |
| E6-40-100-[ ]-0 | 3.94 (100) | 4.72 (120) | ≈ 1.02 (1.53) |
| E6-40-125-[ ]-0 | 4.92 (125) | 5.71 (145) | ≈ 1.10 (1.63) |
| E6-40-150-[ ]-0 | 5.91 (150) | 6.69 (170) | ≈ 1.16 (1.73) |
| E6-40-175-[ ]-0 | 6.89 (175) | 7.68 (195) | ≈ 1.23 (1.83) |
| E6-40-200-[ ]-0 | 7.87 (200) | 8.66 (220) | ≈ 2.50 (1.93) |
| E6-40-225-[ ]-0 | 8.86 (225) | 9.65 (245) | ≈ 1.36 (2.02) |
| E6-40-250-[ ]-0 | 9.84 (250) | 10.63 (270) | ≈ 1.42 (2.12) |
| E6-40-275-[ ]-0 | 10.83 (275) | 11.61 (295) | ≈ 1.49 (2.22) |
| E6-40-300-[ ]-0 | 11.81 (300) | 12.60 (320) | ≈ 1.56 (2.32) |

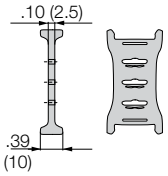
**Choose from the radii below for all of the above sizes**
***Radius* (mm) Example: E6-40-100-[100]-0**

| | 063 | 075 | 100 | 125 | 150 | 200 |
|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |
| H | 8.82 (224) | 9.76 (248) | 11.73 (298) | 13.71 (348) | 15.67 (398) | 19.61 (498) |
| D | 5.28 (134) | 5.75 (146) | 6.73 (171) | 7.72 (196) | 8.70 (221) | 10.67 (271) |
| K | 10.04 (255) | 11.61 (295) | 14.57 (370) | 17.72 (450) | 20.87 (530) | 26.97 (685) |

# E-Chain System® E6
# Series E6-40
# Interior Separation - New Generation



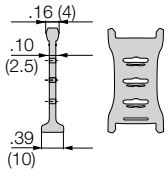

No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. E6-40-1** |
| Assembled | **Part No. E6-40-1-1** |

- **Standard separator E6-40-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

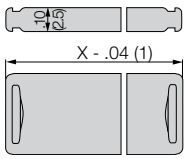



**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. E6-40-2** |
| Assembled | **Part No. E6-40-2-1** |

- **Separator E6-40-2 For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. E6-40-02-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

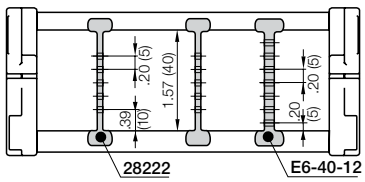
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-40
# Interior Separation - Previous Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

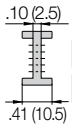
## Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



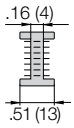

- **Slotted vertical separator**
  This separator is used for general subdivision of E-Chains®. Can be used in combination with full-width shelf 221-X.

- **Locking vertical separator**
  For use with shelf 2210-X




**Vertical Separator, Slotted**

| | |
|---|---|
| Unassembled | **Part No. 28221** |
| Assembled | **Part No. 28222** |

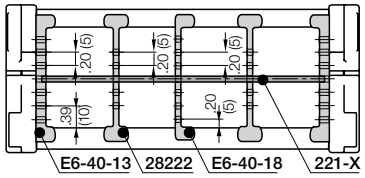



**Locking Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. E6-40-02** |
| Assembled | **Part No. E6-40-12** |

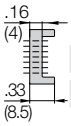
## Full-width shelf

For applications involving many thin cables with similar or identical diameters.
Full-width shelf **221-X** can be used with vertical separator **28222, side plate E6-40-13 and asymmetrical separator E6-40-18**



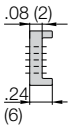

- **Side plate**
  This separator is used for general subdivision of E-Chains®.

- **Asymmetrical separator**
  This separator is used for general subdivision of E-Chains®.



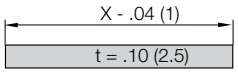

**Side Plate**

| | |
|---|---|
| Unassembled | **Part No. E6-40-03** |
| Assembled | **Part No. E6-40-13** |




**Asymmetrical Separator**

| | |
|---|---|
| Unassembled | **Part No. E6-40-08** |
| Assembled | **Part No. E6-40-18** |

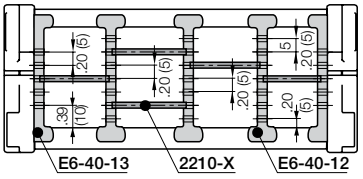



**Shelves 220-XX**
Shelves can be inserted at 5 different heights in .20" (5mm) increments

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.57 (040) | **220-40** | **221-40** | 3.94 (100) | **220-100** | **221-100** |
| 1.97 (050) | **220-50** | **221-50** | 4.92 (125) | **220-125** | **221-125** |
| 2.44 (062) | **220-62** | **221-62** | 5.91 (150) | **220-150** | **221-150** |
| 2.76 (070) | **220-70** | **221-70** | 6.89 (175) | **220-175** | **221-175** |
| 2.95 (075) | **220-75** | **221-75** | 7.87 (200) | **220-200** | **221-200** |
| 3.43 (087) | **220-87** | **221-87** | | | |

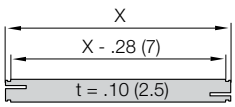
## Shelves

These components form the basic pattern of a shelf system.
Shelves of various widths can be arranged at 7 different heights in .20" (5mm) increments




**Shelves 2200-XX**
**Shelf 2210-X** can be used with **locking vertical separator E6-40-12** and **side plate E6-40-13**

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 (18) | **2200-18** | **2210-18** | 2.28 (58) | **2200-58** | **2210-58** |
| .91 (23) | **2200-23** | **2210-23** | 2.28 (63) | **2200-65** | **2210-65** |
| 1.10 (28) | **2200-28** | **2210-28** | 2.68 (68) | **2200-68** | **2210-68** |
| 1.30 (33) | **2200-33** | **2210-33** | 2.87 (73) | **2200-73** | **2210-73** |
| 1.50 (38) | **2200-38** | **2210-38** | 3.46 (88) | **2200-88** | **2210-88** |
| 1.69 (43) | **2200-43** | **2210-43** | 3.90 (99) | **2200-99** | **2210-99** |
| 1.89 (48) | **2200-48** | **2210-48** | | | |



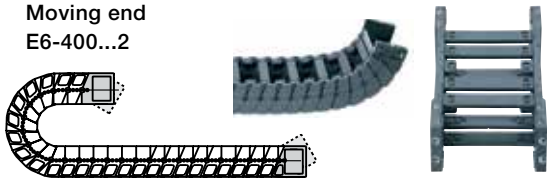
# E-Chain System® E6
# Series E6-40
# Mounting Bracket - KMA

## Option 1: KMA - Pivoting

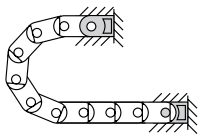
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

Adapters for gliding applications available upon request

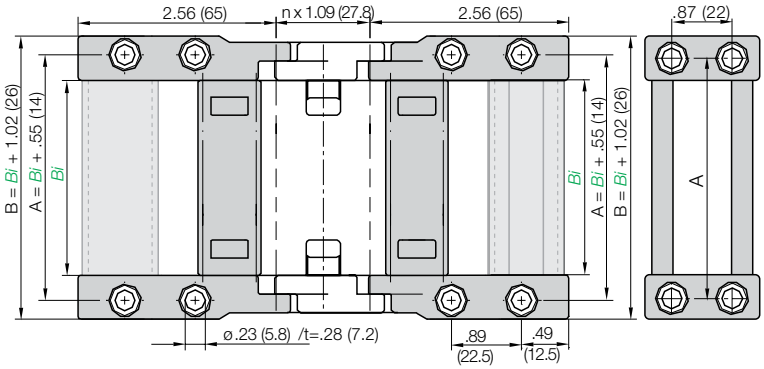
Moving end
E6-400...2



Fixed end
E6-400...1

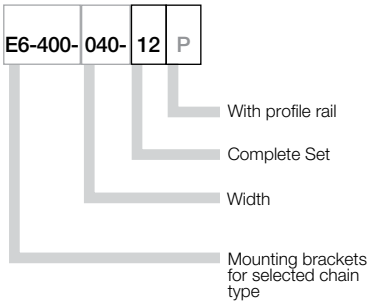


Possible installation configurations -




| For Series | Part No. Full Set Without Profile Rail | Part No. Full Set With Profile Rail | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| E6-40-040 | **E6-400-040-12** | **E6-400-040-12P** | 2.13 | (54) | 2.60 | (66) |
| E6-40-050 | **E6-400-050-12** | **E6-400-050-12P** | 2.52 | (64) | 2.99 | (76) |
| E6-40-052 | E6-400-052-12 | E6-400-052-12P | 2.66 | (66) | 3.07 | (78) |
| E6-40-062 | **E6-400-062-12** | **E6-400-062-12P** | 2.99 | (76) | 3.46 | (88) |
| E6-40-070 | **E6-400-070-12** | **E6-400-070-12P** | 3.31 | (84) | 3.78 | (96) |
| E6-40-075 | **E6-400-075-12** | **E6-400-075-12P** | 3.50 | (89) | 3.98 | (101) |
| E6-40-087 | **E6-400-087-12** | **E6-400-087-12P** | 3.98 | (101) | 4.45 | (113) |
| E6-40-100 | **E6-400-100-12** | **E6-400-100-12P** | 4.49 | (114) | 4.96 | (126) |
| E6-40-125 | **E6-400-125-12** | **E6-400-125-12P** | 5.47 | (139) | 5.94 | (151) |
| E6-40-150 | **E6-400-150-12** | **E6-400-150-12P** | 6.46 | (164) | 6.93 | (176) |
| E6-40-175 | **E6-400-175-12** | **E6-400-175-12P** | 7.44 | (189) | 7.91 | (201) |
| E6-40-200 | **E6-400-200-12** | **E6-400-200-12P** | 8.43 | (214) | 8.90 | (226) |
| E6-40-225 | **E6-400-225-12** | **E6-400-225-12P** | 9.41 | (239) | 9.88 | (251) |
| E6-40-250 | **E6-400-250-12** | **E6-400-250-12P** | 10.39 | (264) | 10.87 | (276) |
| E6-40-275 | **E6-400-275-12** | **E6-400-275-12P** | 11.38 | (289) | 11.85 | (301) |
| E6-40-300 | **E6-400-300-12** | **E6-400-300-12P** | 12.36 | (314) | 12.83 | (326) |

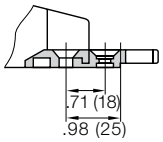
**Part Number Structure**



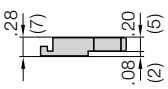

**Full set, for both ends:**
E6-400- 040- 12 Full set, **both fixed and moving end**

**Single-part order:**
E6-400 - 040- 1
Mounting bracket **fixed end**
E6-400 - 040- 2
Mounting bracket **moving end**

## Tiewrap Plates




Shown assembled

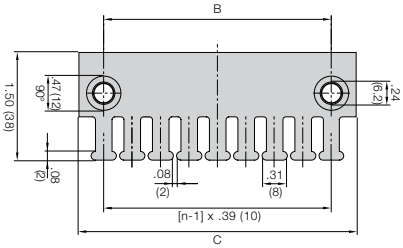



Single tiewrap plate

## Option 1:
## Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series R6-40

1.57

## Price Index

Series R6-40

## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips

Lever and remove lids

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 98.4 ft (30 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

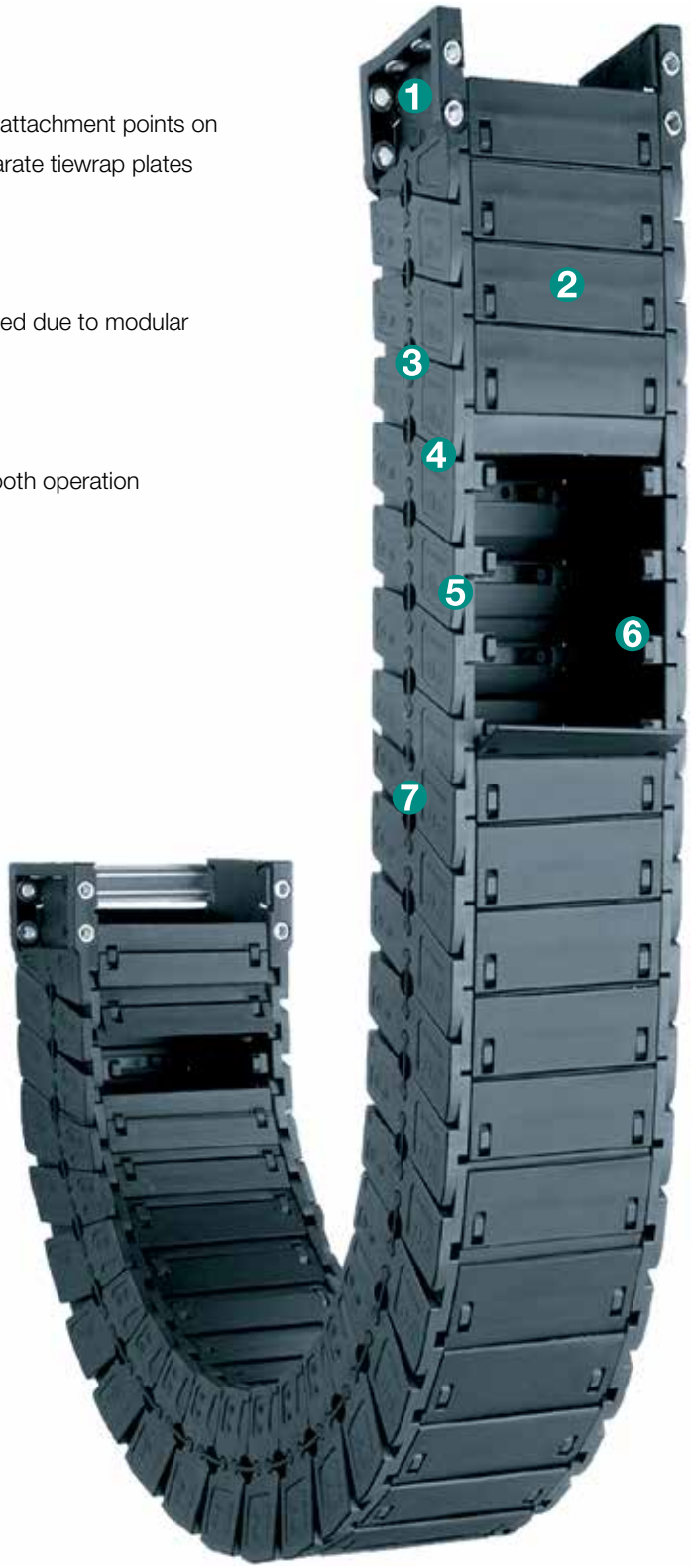
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against hot chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R7728 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. Fully enclosed E-Tube
3. No pin and bore connection
4. Can be shortened or lengthened due to modular design
5. Very large gliding surfaces
6. Interior stop dog
7. Small pitch for low-noise, smooth operation




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **R6-40-062-075-0** | **E-Chain®** |
| With 2 separators **R6-40-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **R6-400-062-12** | **Mounting Bracket** |

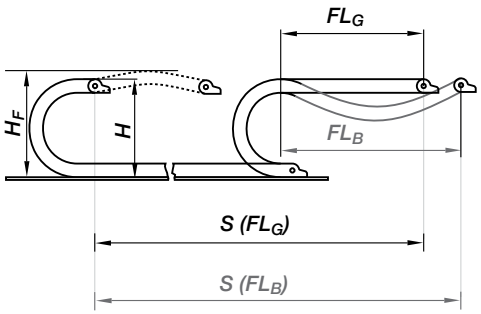
# E-Chain System® E6
# Series R6-40
# Installation Dimensions

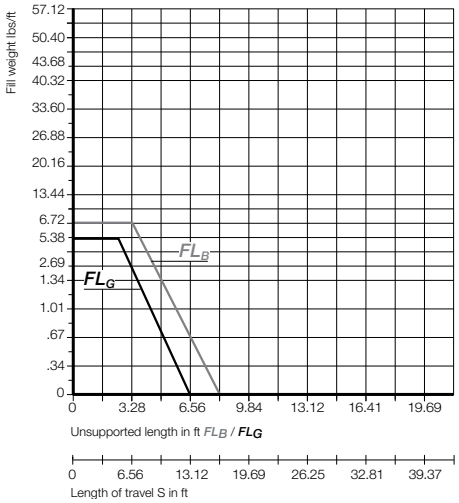
**Short travel, unsupported length**

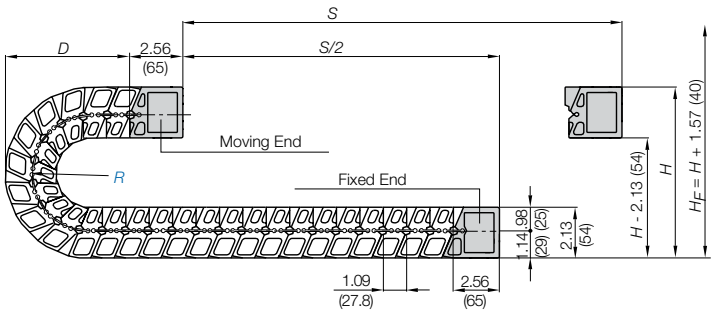
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




**Pitch per link: =** 1.09" (27.8 mm)
**Links per ft (m): =** 10.97 (36)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

The required clearance height: $H_F = H$ **+ 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|---|---|
| H | 8.82 (224) | 9.76 (248) | 11.73 (298) | 13.71 (348) | 15.67 (398) | 19.61 (498) |
| D | 5.28 (134) | 5.75 (146) | 6.73 (171) | 7.72 (196) | 8.70 (221) | 10.67 (271) |
| K | 10.04 (255) | 11.61 (295) | 13.50 (343) | 16.65 (423) | 20.87 (530) | 26.97 (685) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

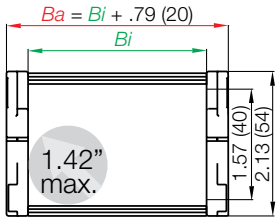
Details of material properties
**➤ Design, Chapter 1**

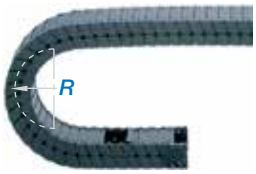
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

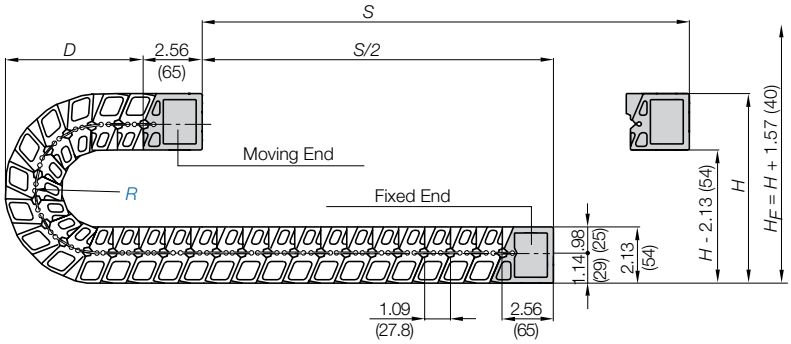
# E-Chain System® E6
# Series R6-40

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series R6-40 - E-Tube, removable lids along the inner and outer radius






**Part Number Structure**

| R6-40- | 062- | 100- | 0 |
|---|---|---|---|
| | | | Color - Black |
| | | Bending radius | |
| | Width | | |
| Series | | | |

**Supplement part number with required radius. Example: R6-40-062-100-0**
**Pitch: 1.09 in. (27.8 mm) per link links/ft (m) = 10.97 (36)**

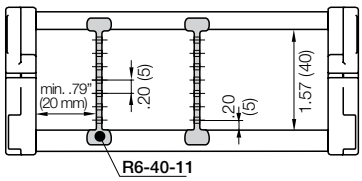
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| R6-40-062- ☐ -0 | 2.44 (62) | 3.23 (82) | ≈ 1.07 (1.59) |
| R6-40-075- ☐ -0 | 2.95 (75) | 3.74 (95) | ≈ 1.11 (1.65) |

**Choose from the radii below for all of the above sizes**
***Radius* (mm) Example: R6-40-062-100-0**

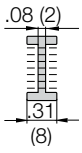
| | 063 | 075 | 100 | 125 | 150 | 200 |
|---|---|---|---|---|---|---|
| R | 2.48 (063) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) |
| H | 8.82 (224) | 9.76 (248) | 11.73 (298) | 13.71 (348) | 15.67 (398) | 19.61 (498) |
| D | 5.28 (134) | 5.75 (146) | 6.73 (171) | 7.72 (196) | 8.70 (221) | 10.67 (271) |
| K | 10.04 (255) | 11.61 (295) | 13.50 (343) | 16.65 (423) | 20.87 (530) | 26.97 (685) |

## Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Tube link.



Vertical separator R6-40-01




**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. R6-40-01** |
| Assembled | **Part No. R6-40-11** |

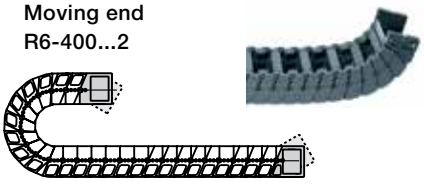
- **Vertical separator R6-40-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

# E-Chain System® E6
# Series R6-40
# Mounting Bracket - KMA / Strain Relief

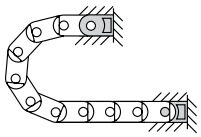
## KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

**Moving end**
**R6-400...2**

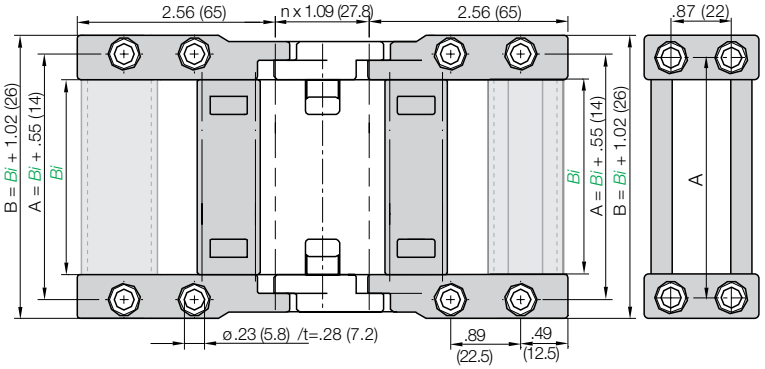


**Fixed end**
**R6-400...1**



Possible installation configurations -

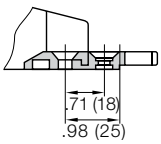
**Adapters for gliding applications available upon request**



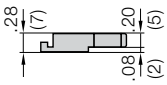

| For Series | Part No. Full Set Without Profile Rail | Part No. Full Set With Profile Rail | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| R6-40-062 | **R6-400-062-12** | **R6-400-062-12P** | 2.99 | (76) | 3.46 | (88) |
| R6-40-075 | R6-400-075-12 | R6-400-075-12P | 3.50 | (89) | 3.98 | (101) |

**Full set, for both ends:**
R6-400- 062- 12 Full set, **both fixed and moving end**
**Single-part order:**
R6-400 - 062- 1 Mounting bracket **fixed end**
R6-400 - 062- 2 Mounting bracket **moving end**

## Tiewrap Plates




**Shown assembled**

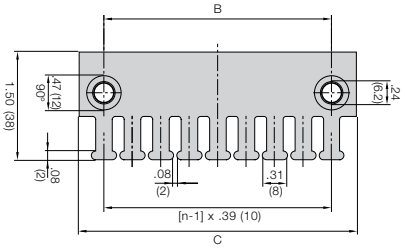



**Single tiewrap plate**

### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-52



## Price Index

Series E6-52

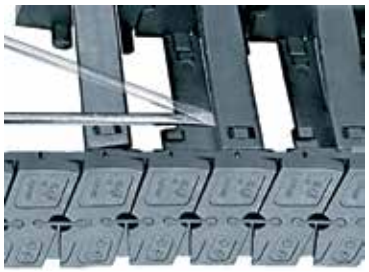
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

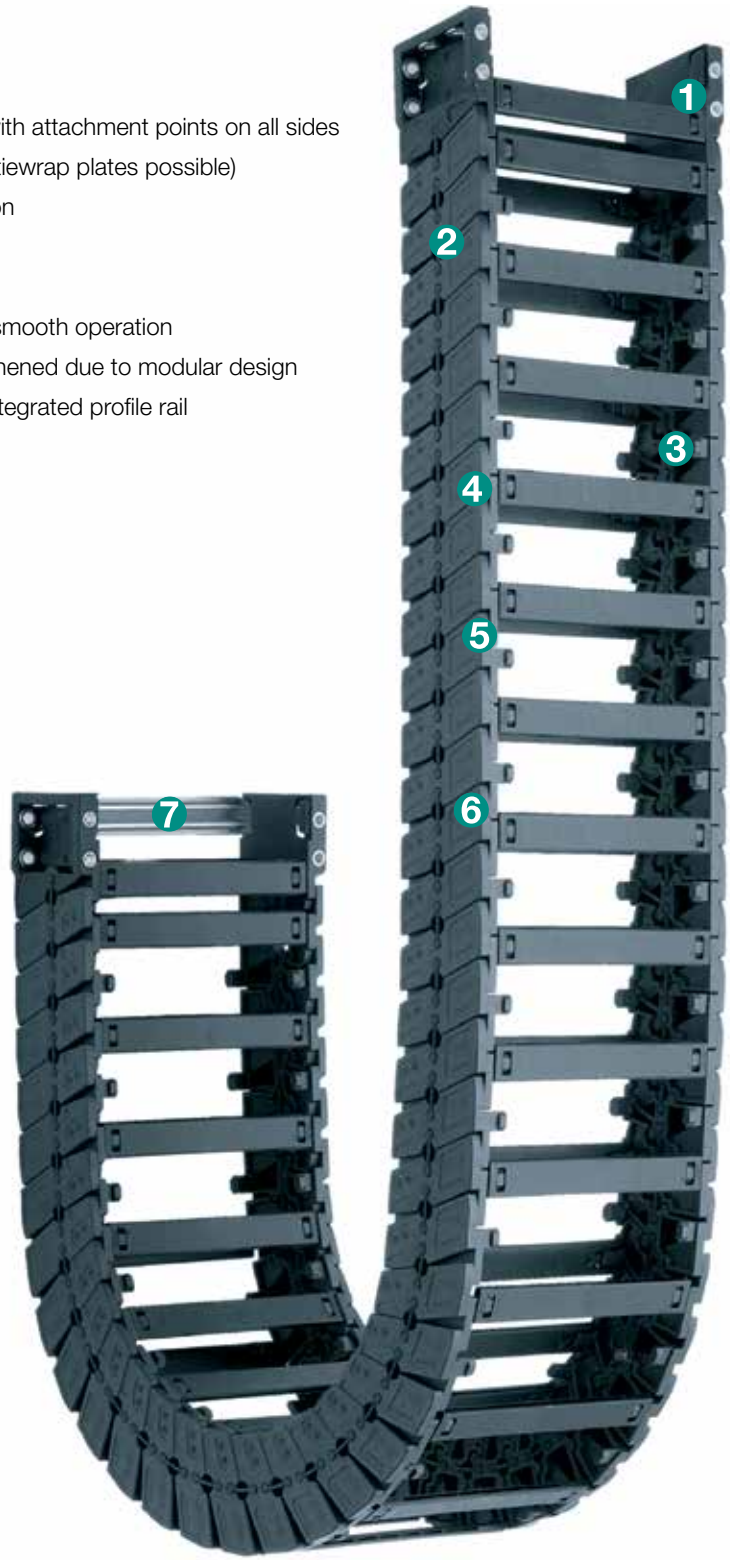
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 4040 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 400 E4/4**
- For high additional loads
  ➤ **Series 4040 E4/100**
- For dirty environments
  ➤ **Series 4040 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides (strain relief with separate tiewrap plates possible)
2. No pin and bore connection
3. Interior stop dog
4. Very large gliding surfaces
5. Small pitch for low-noise, smooth operation
6. Can be shortened or lengthened due to modular design
7. Available with or without integrated profile rail




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **E6-52-100-175-0** | **E-Chain®** |
| With 2 separators **38222** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-520-100-12** | **Mounting Bracket** |

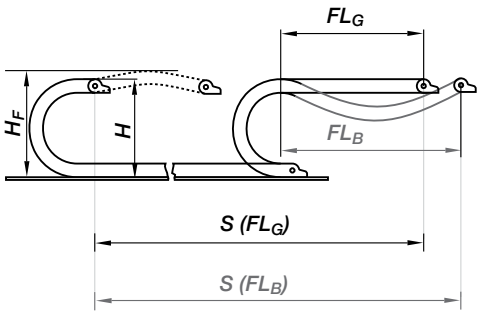
# E-Chain System® E6
# Series E6-52
# Installation Dimensions

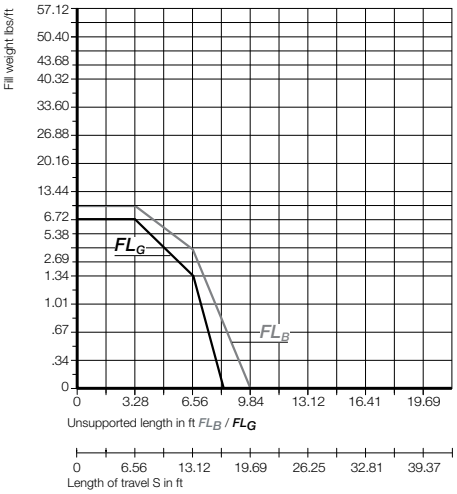
**Short travel, unsupported length**

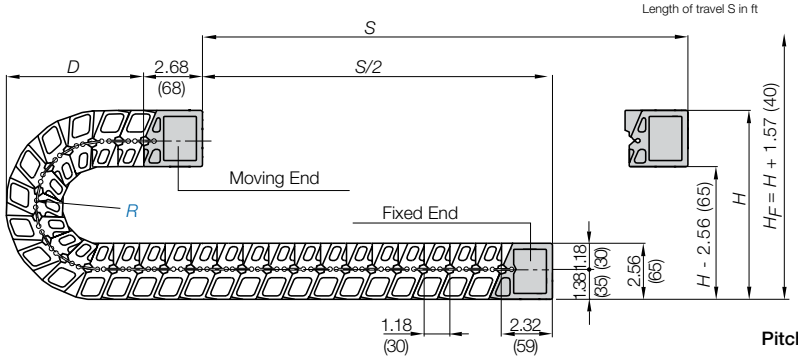
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: $H_F = H + 1.57$ **in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 16.54 (420) | 20.47 (520) | 24.41 (620) |
| D | 6.10 (155) | 7.09 (180) | 9.06 (230) | 11.02 (280) | 12.99 (330) |
| K | 11.81 (300) | 14.76 (375) | 21.06 (535) | 27.17 (690) | 33.46 (850) |

**Pitch per link: =** 1.18" (30 mm)
**Links per ft (m): =** 10.17 (34)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

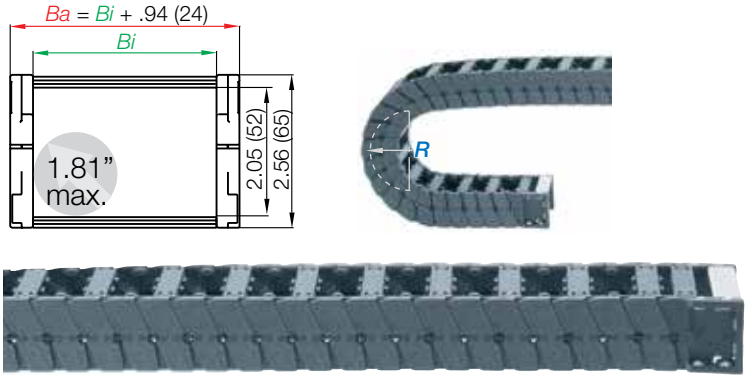
Details of material properties
**➤ Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-52

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E6-52 - E-Chain® with crossbars every other link

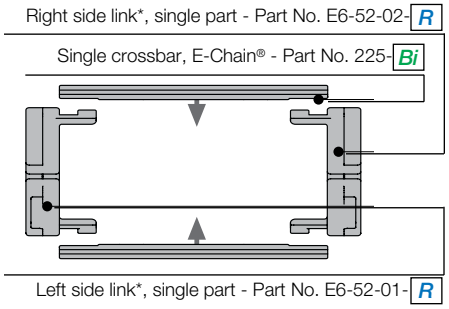


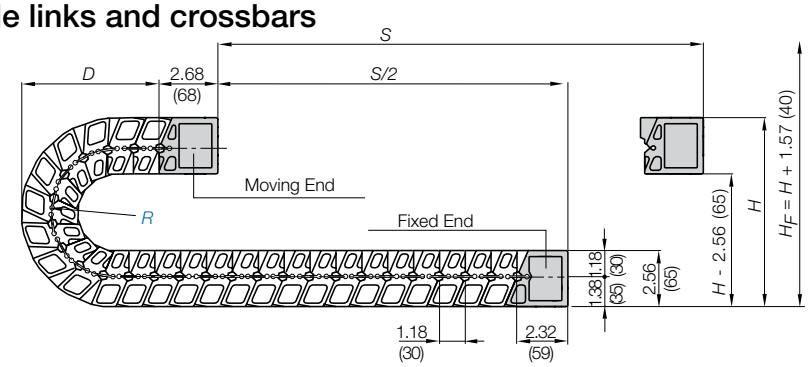

**Part Number Structure**

E6-52-100-075-0

- Color - Black
- Bending radius
- Width
- Series

## E-Chain® as separate parts, side links and crossbars



**Polymer spring as single part - Part No. E6-52-195**

*View from the fixed point of the E-Chain®/E-Tube

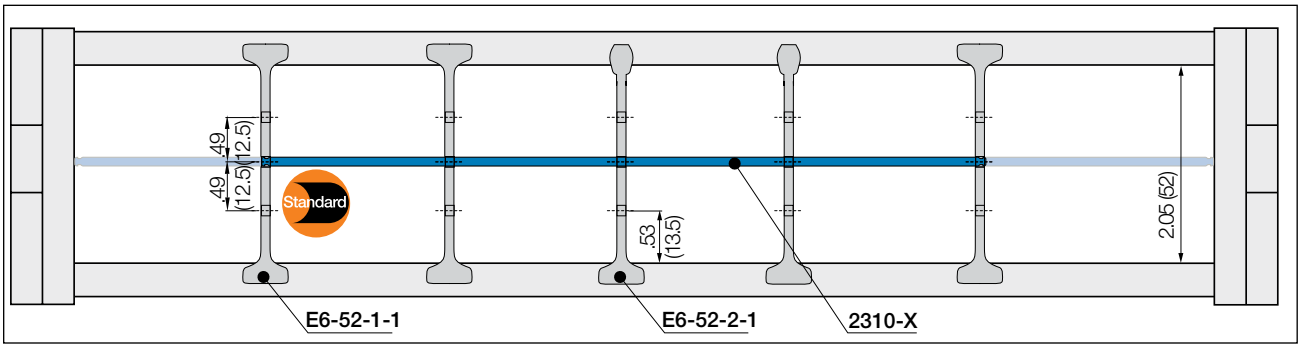
**Supplement part number with required radius. Example: E6-52-100-075-0**
**Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)**

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-52-040-□-0 | 1.57 (40) | 2.51 (64) | ≈1.18 (1.76) |
| E6-52-050-□-0 | 1.97 (50) | 2.91 (74) | ≈1.21 (1.80) |
| E6-52-052-□-0 | 2.05 (52) | 2.60 (66) | ≈1.22 (1.81) |
| E6-52-062-□-0 | 2.44 (62) | 3.39 (86) | ≈1.24 (1.84) |
| E6-52-070-□-0 | 2.76 (70) | 3.70 (94) | ≈1.26 (1.87) |
| E6-52-075-□-0 | 2.95 (75) | 3.90 (99) | ≈1.27 (1.89) |
| E6-52-087-□-0 | 3.42 (87) | 4.37 (111) | ≈1.30 (1.94) |
| E6-52-100-□-0 | 3.94 (100) | 4.88 (124) | ≈1.33 (1.98) |
| E6-52-125-□-0 | 4.92 (125) | 5.87 (149) | ≈1.39 (2.07) |
| E6-52-150-□-0 | 5.91 (150) | 6.85 (174) | ≈1.46 (2.17) |
| E6-52-175-□-0 | 6.89 (175) | 7.83 (199) | ≈1.52 (2.26) |
| E6-52-200-□-0 | 7.87 (200) | 8.82 (224) | ≈1.59 (2.36) |
| E6-52-225-□-0 | 8.86 (225) | 9.80 (249) | ≈1.65 (2.45) |
| E6-52-250-□-0 | 9.84 (250) | 10.79 (274) | ≈1.71 (2.54) |
| E6-52-275-□-0 | 10.83 (275) | 11.77 (299) | ≈1.77 (2.64) |
| E6-52-300-□-0 | 11.81 (300) | 12.76 (324) | ≈1.83 (2.73) |

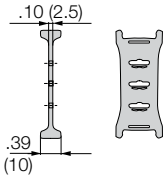
**Choose from the radii below for all of the above sizes**
***Radius* (mm)Example: E6-52-100-075-0**

| | 075 | 100 | 150 | 200 | 250 |
|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
| H | 10.63 (270) | 12.60 (320) | 16.54 (420) | 20.47 (520) | 24.41 (620) |
| D | 6.10 (155) | 7.09 (180) | 9.06 (230) | 11.02 (280) | 12.99 (330) |
| K | 11.81 (300) | 14.76 (375) | 21.06 (535) | 27.17 (690) | 33.46 (850) |

# E-Chain System® E6
# Series E6-52
# Interior Separation - New Generation



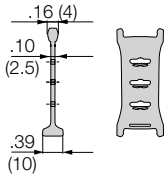

No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. E6-52-1** |
| Assembled | **Part No. E6-52-1-1** |

- **Standard separator E6-52-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.

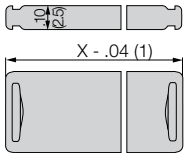



**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. E6-52-2** |
| Assembled | **Part No. E6-52-2-1** |

- **Separator E6-52-2**
  **For even faster installation**
  Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-15** | **2310-15** | 2.36 (060) | **2300-60** | **2310-60** | 3.43 (087) | **2300-87** | **2310-87** |
| 0.98 (025) | **2300-25** | **2310-25** | 2.44 (062) | **2300-62** | **2310-62** | 3.54 (090) | **2300-90** | **2310-90** |
| 1.18 (030) | **2300-30** | **2310-30** | 2.56 (065) | **2300-65** | **2310-65** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-38** | **2310-38** | 2.76 (070) | **2300-70** | **2310-70** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-40** | **2310-40** | 2.95 (075) | **2300-75** | **2310-75** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-50** | **2310-50** | 3.03 (077) | **2300-77** | **2310-77** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-57** | **2310-57** | 3.15 (080) | **2300-80** | **2310-80** | 4.92 (125) | **2300-125** | **2310-125** |

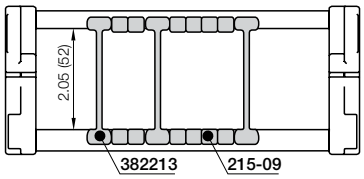
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-52
# Interior Separation Previous Generation

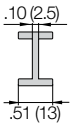
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.




- **Vertical separator**
  This separator is used for general subdivision of E-Chains®.




**Vertical Separator**

| | |
|---|---|
| Unassembled | **Part No. 382212** |
| Assembled | **Part No. 382213** |

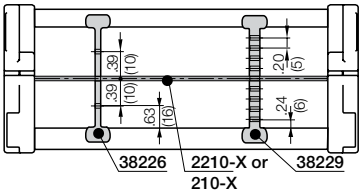
- **Spacer**
  Used when a broad distance needs to be maintained between the separators. Generally used in side-mounted applications

**Spacer**

| | |
|---|---|
| Unassembled | **Part No. 205-09** |
| Assembled | **Part No. 215-09** |

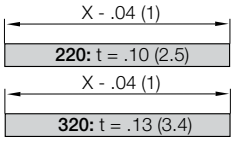
## Full-width shelf

For applications involving many thin cables with similar or identical diameters. Slotted separator **38226** and **38229** can be used in combination with full-width shelf **321-X**. Locking vertical separator **382215** can also be used with full-width shelf **221-X**.

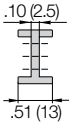



| Width X in. (mm) | Part No. Unassembled 220-X | Part No. Unassembled 320-X | Part No. Assembled 221-X | Part No. Assembled 321-X |
|---|---|---|---|---|
| 1.57 (040) | 220-40 | 320-40 | 221-40 | 321-40 |
| 1.97 (050) | 220-50 | 320-50 | 221-50 | 321-50 |
| 2.44 (062) | 220-62 | 320-62 | 221-62 | 321-62 |
| 2.76 (070) | 220-70 | 320-70 | 221-70 | 321-70 |
| 2.95 (075) | 220-75 | 320-75 | 221-75 | 321-75 |
| 3.43 (087) | 220-87 | 320-87 | 221-87 | 321-87 |
| 3.94 (100) | 220-100 | 320-100 | 221-100 | 321-100 |
| 4.92 (125) | 220-125 | 320-125 | 221-125 | 321-125 |
| 5.91 (150) | 220-150 | 320-150 | 221-150 | 321-150 |
| 6.89 (175) | 220-175 | 320-175 | 221-175 | 321-175 |
| 7.87 (200) | 220-200 | 320-200 | 221-200 | 321-200 |

**Shelves 220-X/320-XX**
Shelves can be inserted at 9 different heights in .20" (5mm) increments



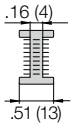

- **Vertical separator, slotted**
  This separator is used for general sub-division of E-Chains®. Can be used in combination with full-width shelf 321-X.




**Vertical Separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. 38225** |
| Assembled | **Part No. 38226** |

- **Locking vertical separator**
  This separator is used for general subdivision of E-Chains®.

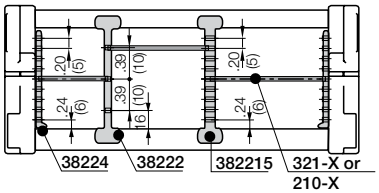



**Locking Vertical Separator**

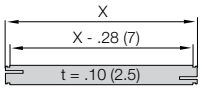
| | |
|---|---|
| Unassembled | **Part No. 38228** |
| Assembled | **Part No. 38229** |

## Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 9 different heights in .20" (5mm) increments

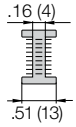



**Shelves 2200-XX**
**Shelf 2210-X** can be used with **vertical separator 38222, locking separator 382215** and **side plate 38224.**
Locking vertical separator **382215** can also be used with full-width shelf **221-X.**




| Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|
| .71 (18) | 2200-18 | 2210-18 |
| .91 (23) | 2200-23 | 2210-23 |
| 1.10 (28) | 2200-28 | 2210-28 |
| 1.30 (33) | 2200-33 | 2210-33 |
| 1.50 (38) | 2200-38 | 2210-38 |
| 1.69 (43) | 2200-43 | 2210-43 |
| 1.89 (48) | 2200-48 | 2210-48 |
| 2.28 (58) | 2200-58 | 2210-58 |
| 2.28 (63) | 2200-65 | 2210-65 |
| 2.68 (68) | 2200-68 | 2210-68 |
| 2.87 (73) | 2200-73 | 2210-73 |
| 3.46 (88) | 2200-88 | 2210-88 |
| 3.90 (99) | 2200-99 | 2210-99 |

- **Locking vertical separator**
  This separator is used when higher retention force is needed.




**Locking Vertical Separator**

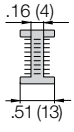
| | |
|---|---|
| Unassembled | **Part No. 382214** |
| Assembled | **Part No. 382215** |

- **Side plate**
  This separator is used for general subdivision of E-Chains®.

**Side Plate**

| | |
|---|---|
| Unassembled | **Part No. 38223** |
| Assembled | **Part No. 38224** |

- **Vertical separator, slotted**
  Can be used in combination with full-width shelf 321-X.




**Vertical Separator, Slotted**

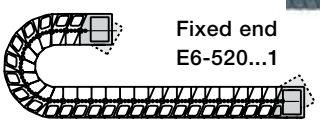
| | |
|---|---|
| Unassembled | **Part No. 38221** |
| Assembled | **Part No. 38222** |

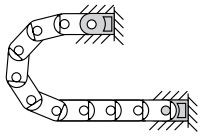
# E-Chain System® E6
# Series E6-52
# Mounting Brackets - KMA / Strain Relief

## Option 1: KMA - Pivoting

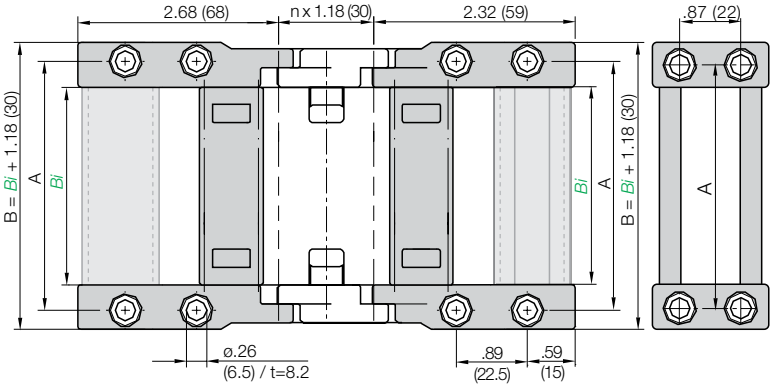
- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

**Adapters for gliding applications available upon request**



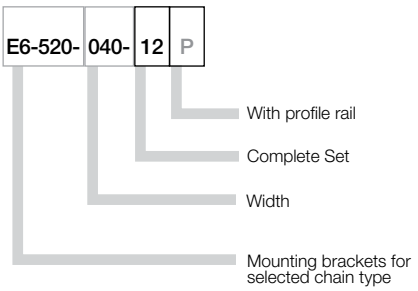


Possible installation configurations -




| For Series | Part No. Full Set Without Profile Rail | Part No. Full Set With Profile Rail | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| E6-52-040 | **E6-520-040-12** | **E6-520-040-12P** | 2.20 | (56) | 2.76 | (70) |
| E6-52-050 | **E6-520-050-12** | **E6-520-050-12P** | 2.60 | (66) | 3.15 | (80) |
| E6-52-052 | **E6-520-052-12** | **E6-520-052-12P** | 2.68 | (68) | 3.23 | (82) |
| E6-52-062 | **E6-520-062-12** | **E6-520-062-12P** | 3.07 | (78) | 3.62 | (92) |
| E6-52-070 | **E6-520-070-12** | **E6-520-070-12P** | 3.39 | (86) | 3.94 | (100) |
| E6-52-075 | **E6-520-075-12** | **E6-520-075-12P** | 3.58 | (91) | 4.13 | (105) |
| E6-52-087 | **E6-520-087-12** | **E6-520-087-12P** | 4.06 | (103) | 4.61 | (117) |
| E6-52-100 | **E6-520-100-12** | **E6-520-100-12P** | 4.57 | (116) | 5.12 | (130) |
| E6-52-125 | **E6-520-125-12** | **E6-520-125-12P** | 5.55 | (141) | 6.10 | (155) |
| E6-52-150 | **E6-520-150-12** | **E6-520-150-12P** | 6.54 | (166) | 7.09 | (180) |
| E6-52-175 | **E6-520-175-12** | **E6-520-175-12P** | 7.52 | (191) | 8.07 | (205) |
| E6-52-200 | **E6-520-200-12** | **E6-520-200-12P** | 8.50 | (216) | 9.06 | (230) |
| E6-52-225 | **E6-520-225-12** | **E6-520-225-12P** | 9.49 | (241) | 10.04 | (255) |
| E6-52-250 | **E6-520-250-12** | **E6-520-250-12P** | 10.47 | (266) | 11.02 | (280) |
| E6-52-275 | **E6-520-275-12** | **E6-520-275-12P** | 11.46 | (291) | 11.81 | (300) |
| E6-52-300 | **E6-520-300-12** | **E6-520-300-12P** | 12.44 | (316) | 12.99 | (330) |

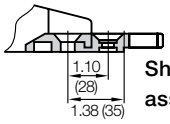
**Part Number Structure**



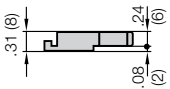

**Full set, for both ends:**
E6-520- 040- 12 Full set, **both fixed and moving end**

**Single-part order:**
E6-520 - 040- 1
Mounting bracket **fixed end**
E6-520 - 040- 2
Mounting bracket **moving end**

## Tiewrap Plates




Shown assembled

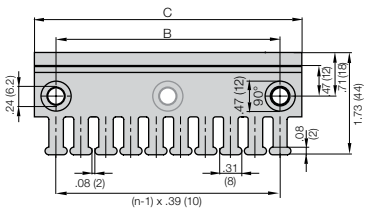



Single tiewrap plate

## Option 1:
## Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series R6-52



## Price Index

Series R6-52

## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips

Lever and remove lids

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 164 ft (50 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

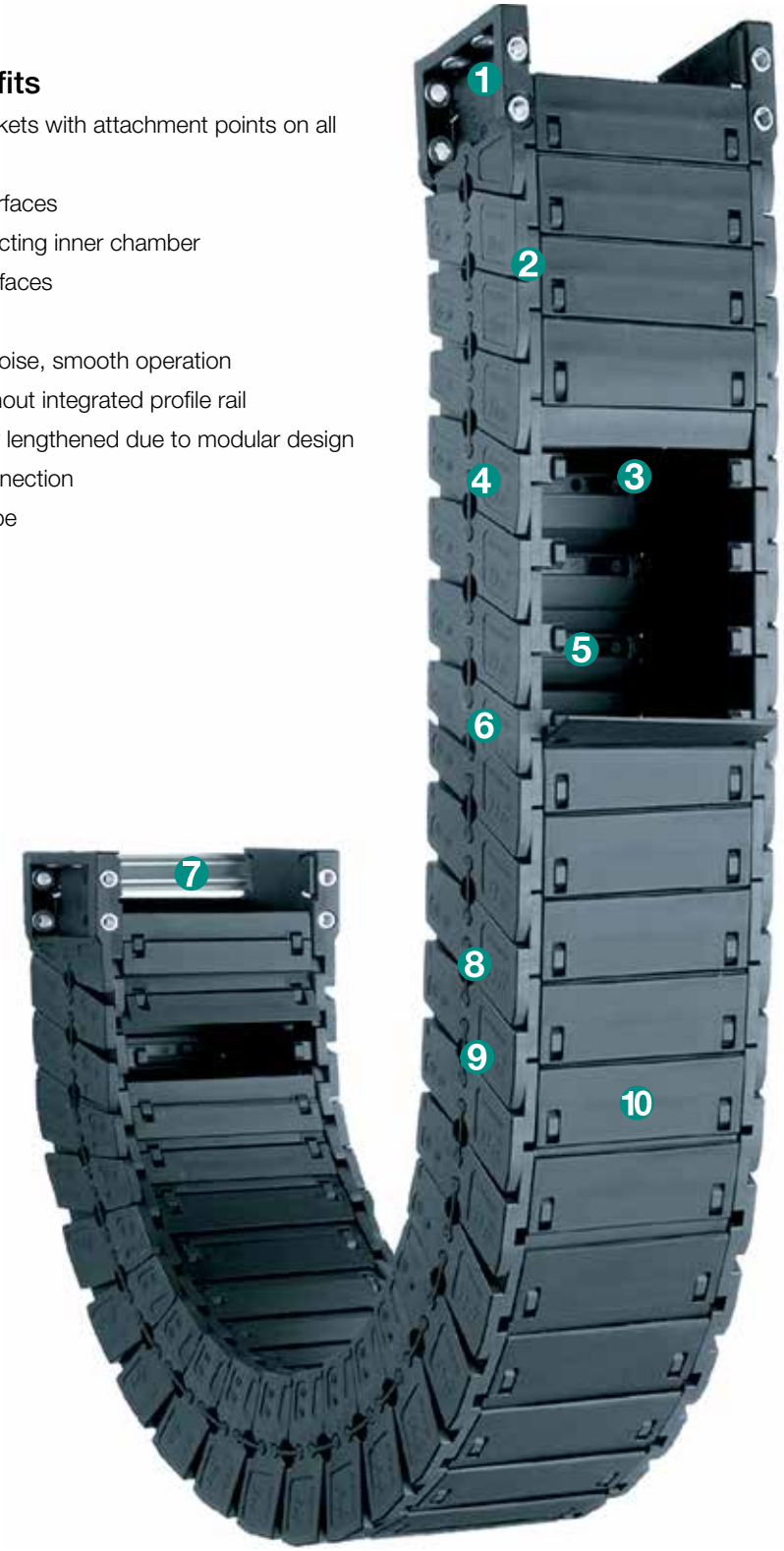
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- Protection against dirt and chips
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series R6-52**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Very large gliding surfaces
3. Smooth, cable protecting inner chamber
4. Continuous glide surfaces
5. Interior stop dog
6. Small pitch for low-noise, smooth operation
7. Available with or without integrated profile rail
8. Can be shortened or lengthened due to modular design
9. No pin and bore connection
10. Fully enclosed E-Tube




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **R6-52-100-075-0** | **E-Chain®** |
| With 2 separators **R6-52-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **R6-520-100-12** | **Mounting Bracket** |

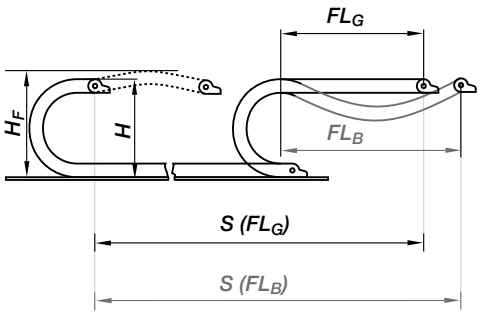
# E-Chain System® E6
# Series R6-52
# Installation Dimensions

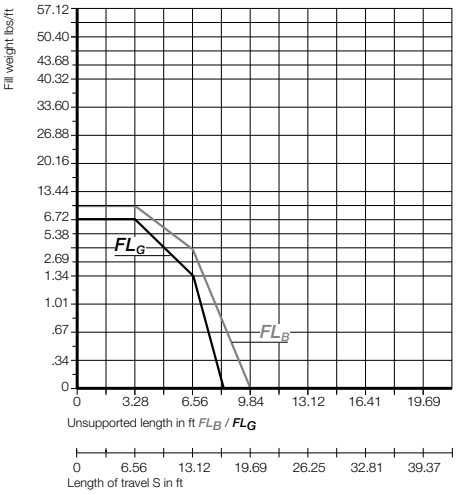
**Short travel, unsupported length**

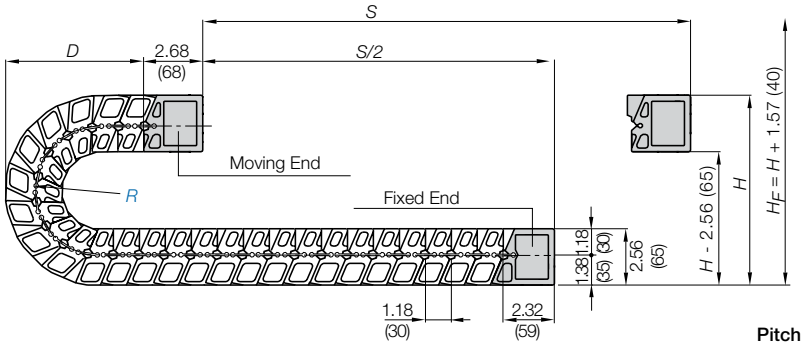
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 16.54 (420) | 20.47 (520) | 24.41 (620) |
| D | 6.10 (155) | 7.09 (180) | 9.06 (230) | 11.02 (280) | 12.99 (330) |
| K | 11.81 (300) | 14.76 (375) | 21.06 (535) | 27.17 (690) | 33.46 (850) |

**Pitch per link: =** 1.18" (30 mm)

**Links per ft (m): =** 10.17 (34)

**For center mount applications:**

**Chain length =** $\frac{S}{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel

R = Bending radius

H = Nominal clearance height

D = Overlength E-Chain® radius in final position

*K* = π • *R* + *safety buffer*

$H_F$ = Required clearance height

$H_{RI}$ = Trough inner height

$H_2$ = *Mounting height

$D_2$ = Overlength - long travels, gliding

$K_2$ = *Add-on

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties

**➤ Design, Chapter 1**

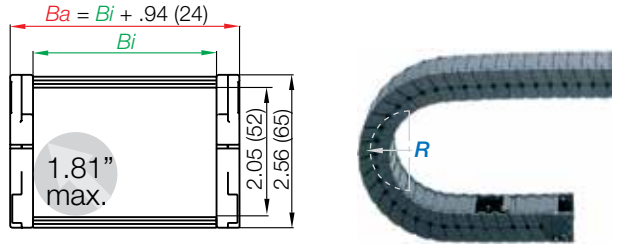


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series R6-52

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

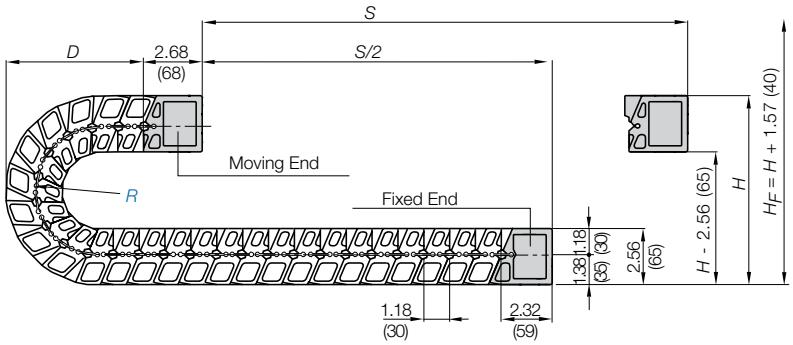
## Series R6-52 - E-Chain® with lids



### Part Number Structure

R6-52- 100- 075- 0

- Color - Black
- Bending radius
- Width
- Series




Supplement part number with required radius. Example: R6-52-100-075-0
Pitch: 1.18 in. (30 mm) per link links/ft (m) = 10.36 (34)

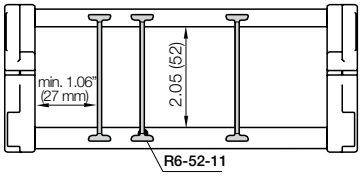
| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| R6-52-050- ☐ -0 | 1.97 (50) | 2.91 (74) | ≈1.27 (1.89) |
| R6-52-075- ☐ -0 | 2.95 (75) | 3.90 (99) | ≈1.42 (2.12) |
| R6-52-100- ☐ -0 | 3.94 (100) | 4.88 (124) | ≈1.58 (2.35) |
| R6-52-125- ☐ -0 | 4.92 (125) | 5.87 (149) | ≈1.73 (2.57) |
| R6-52-150- ☐ -0 | 5.91 (150) | 6.85 (174) | ≈1.88 (2.80) |
| R6-52-175- ☐ -0 | 6.89 (175) | 7.83 (199) | ≈2.04 (3.03) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: R6-52-100-075-0

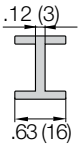
| | 075 | 100 | 150 | 200 | 250 |
|---|---|---|---|---|---|
| R | 2.95 (075) | 3.94 (100) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
| H | 10.63 (270) | 12.60 (320) | 16.54 (420) | 20.47 (520) | 24.41 (620) |
| D | 6.10 (155) | 7.09 (180) | 9.06 (230) | 11.02 (280) | 12.99 (330) |
| K | 11.81 (300) | 14.76 (375) | 21.06 (535) | 27.17 (690) | 33.46 (850) |

## Option 1: Vertical separators

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.



Vertical separator R6-52-01




**Vertical Separator**

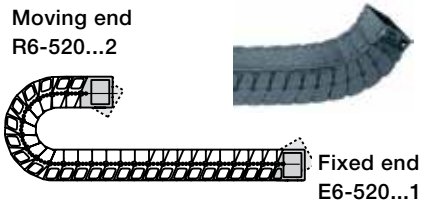
| | |
|---|---|
| Unassembled | **Part No. R6-52-01** |
| Assembled | **Part No. R6-52-11** |

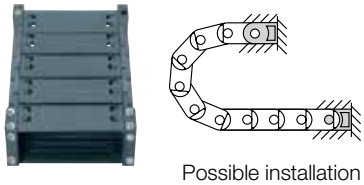
- **Vertical separator R6-52-01**
  This separator is used for general subdivision of E-Tubes.
- Separator snaps onto either the bottom of the carrier or the lid. Stays attached to that side. Opposite side can be removed.

# E-Chain System® E6
# Series R6-52
# Mounting Bracket

## Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides



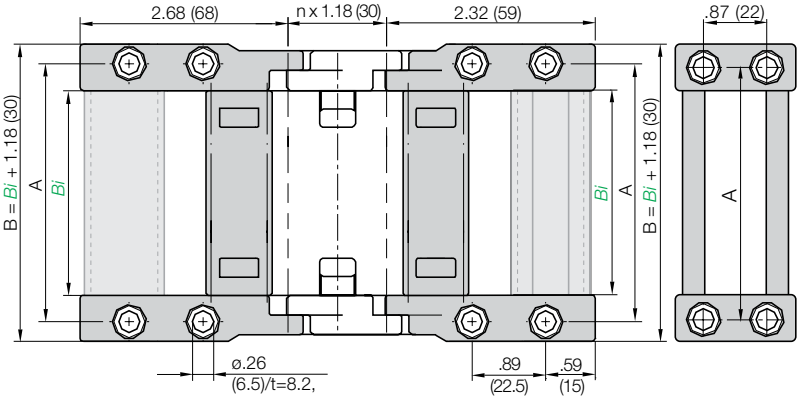



Possible installation configurations -

**Part Number Structure**

R6-520- | 040- | 12 | P

- With profile rail
- Complete Set
- Width
- Mounting brackets for selected chain type

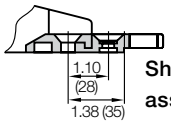



| For Series | Part No. Full Set Without Profile Rail | Part No. Full Set With Profile Rail | Dimension A in. | (mm) | Dimension B in. | (mm) |
|---|---|---|---|---|---|---|
| R6-52-050 | **R6-520-050-12** | **R6-520-050-12P** | 2.60 | (66) | 3.15 | (80) |
| R6-52-075 | **R6-520-075-12** | **R6-520-075-12P** | 3.58 | (91) | 4.13 | (105) |
| R6-52-100 | **R6-520-100-12** | **R6-520-100-12P** | 4.57 | (116) | 5.12 | (130) |
| R6-52-125 | **R6-520-125-12** | **R6-520-125-12P** | 5.55 | (141) | 6.10 | (155) |
| R6-52-150 | **R6-520-150-12** | **R6-520-150-12P** | 6.54 | (166) | 7.09 | (180) |
| R6-52-175 | **R6-520-175-12** | **R6-520-175-12P** | 7.52 | (191) | 8.07 | (205) |

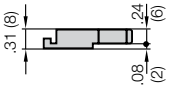
**Full set, for both ends:**
R6-520- 040- 12 Full set, **both fixed and moving end**

**Single-part order:**
R6-520 - 040- 1
Mounting bracket **fixed end**
R6-520 - 040- 2
Mounting bracket **moving end**

## Tiewrap Plates




Shown assembled

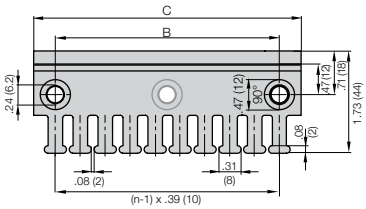



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-62

2.44

## Price Index

Series E6-62

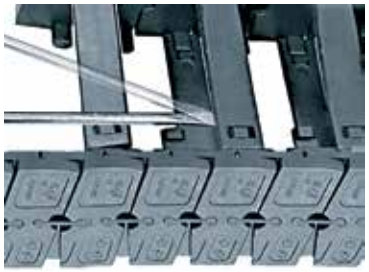
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 196.8 ft (60 m) |
| Vertical, standing ≤ 9.84 ft (3 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

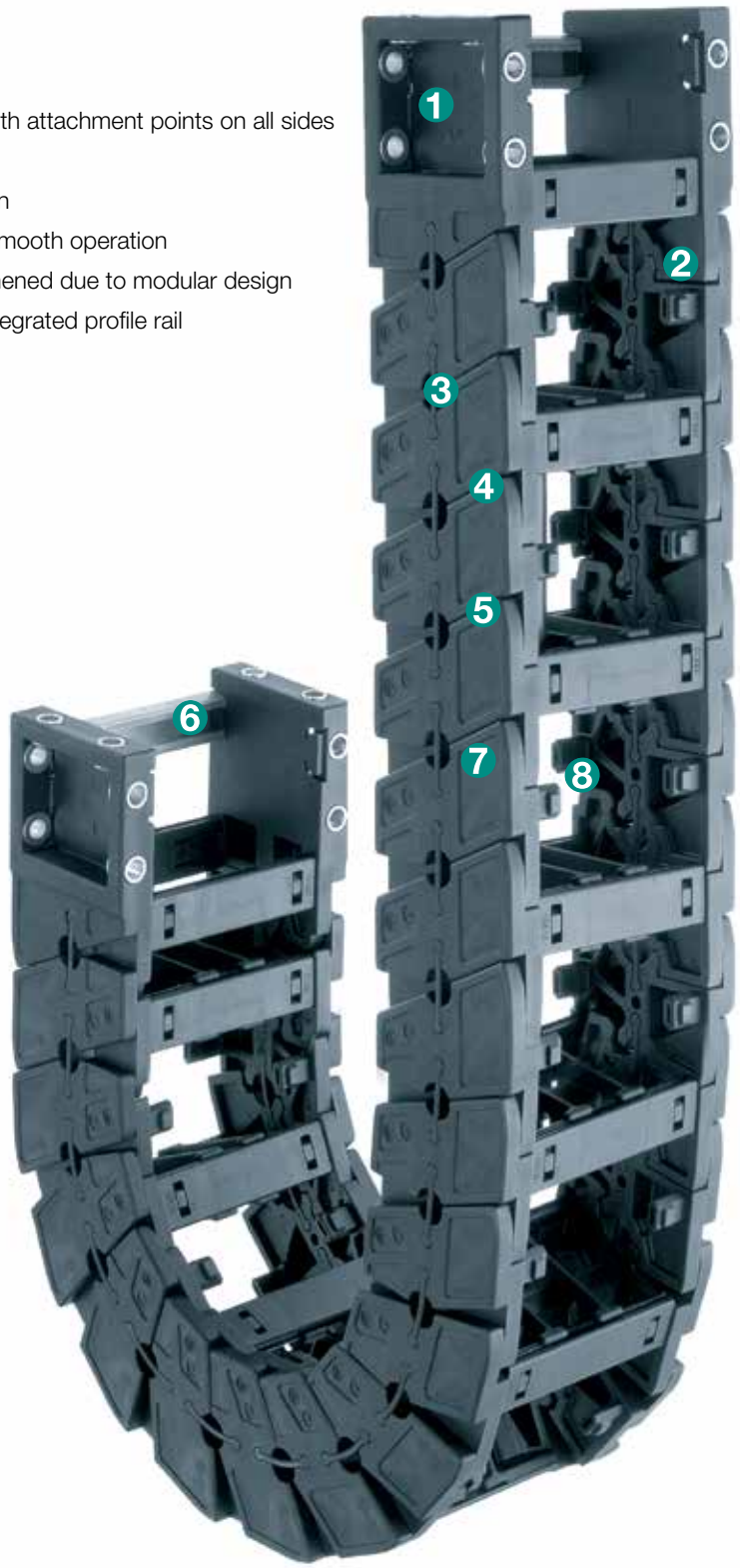
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 4040 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 400 E4/100**
- For high additional loads
  ➤ **Series 4040 E4/4**
- For dirty environments
  ➤ **Series 4040 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Interior stop dog
3. No pin and bore connection
4. Small pitch for low-noise, smooth operation
5. Can be shortened or lengthened due to modular design
6. Available with or without integrated profile rail
7. Very large gliding surfaces
8. Increased inner height




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **E6-62-10-200-0** | **E-Chain®** |
| With 2 separators **E6-62-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-620-10-12P** | **Mounting Bracket** |

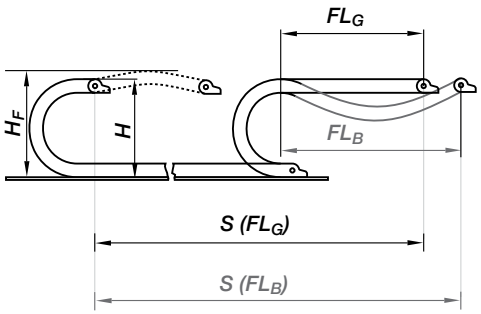
# E-Chain System® E6
# Series E6-62
# Installation Dimensions

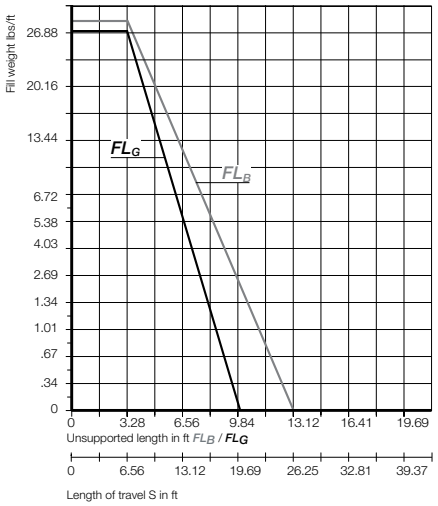
**Short travel, unsupported length**

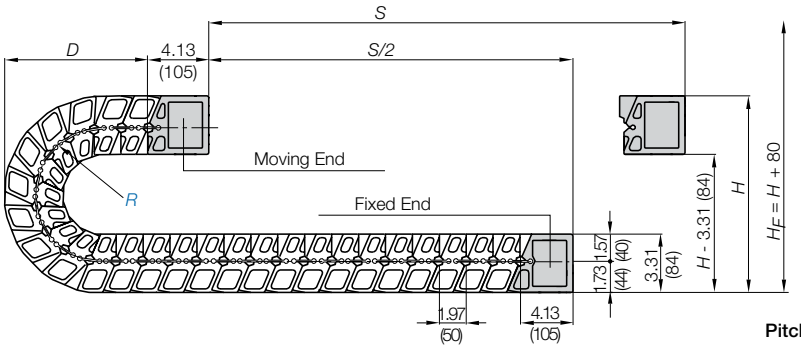
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: $H_F = H + 3.15$ **in. (80 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 4.53 (115) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|
| H | 15.28 (388) | 18.03 (458) | 21.97 (558) | 25.91 (658) | 29.84 (758) | 33.78 (858) |
| D | 9.21 (234) | 10.59 (269) | 12.56 (319) | 14.53 (369) | 16.50 (419) | 18.46 (469) |
| K | 18.31 (465) | 22.64 (575) | 28.74 (730) | 35.04 (890) | 41.14 (1045) | 47.24 (1200) |

**Pitch per link: =** 1.97" (50 mm)

**Links per ft (m): =** 6.1 (20)

**For center mount applications:**

**Chain length =** $^{S}/_{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel

R = Bending radius

H = Nominal clearance height

D = Overlength E-Chain® radius in final position

*K* = π • *R* + *safety buffer*

$H_F$ = Required clearance height

$H_{RI}$ = Trough inner height

$H_2$ = *Mounting height

$D_2$ = Overlength - long travels, gliding

$K_2$ = *Add-on

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties

**➤ Design, Chapter 1**

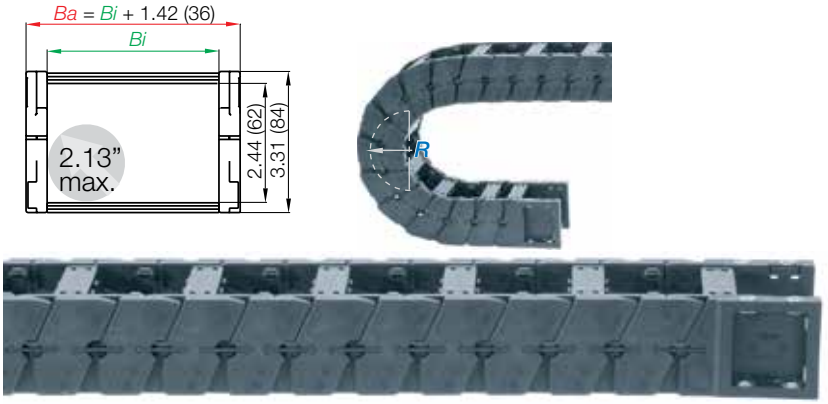


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

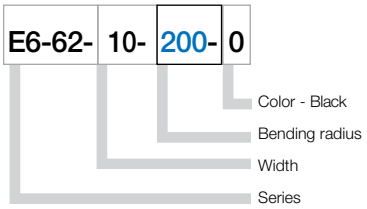
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E6
# Series E6-62

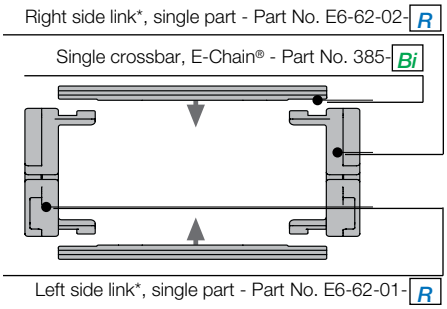
## Series E6-62 - E-Chain® with crossbars every other link

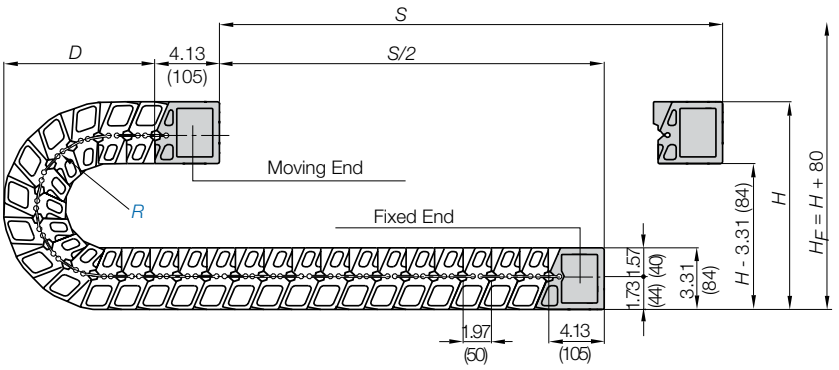



**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

**Polymer spring as single part -**
**Part No. E6-62-340**

# E-Chain System® E6
# Series E6-62

Supplement part number with required radius. Example: E6-62-10-200-0
Pitch: 1.97 in. (50 mm) per link links/ft (m) = 6.1 (20)

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-62-05-[ ]-0 | 1.97 (50) | 3.39 (86) | ≈ 2.16 (3.22) |
| E6-62-06-[ ]-0 | 2.67 (68) | 4.09 (104) | ≈ 2.20 (3.28) |
| E6-62-07-[ ]-0 | 2.95 (75) | 4.37 (111) | ≈ 2.22 (3.31) |
| E6-62-087-[ ]-0 | 3.43 (87) | 4.84 (123) | ≈ 2.25 (3.35) |
| E6-62-097-[ ]-0 | 3.82 (97) | 5.24 (133) | ≈ 2.27 (3.38) |
| E6-62-10-[ ]-0 | 3.94 (100) | 5.35 (136) | ≈ 2.28 (3.39) |
| E6-62-11-[ ]-0 | 4.25 (108) | 5.67 (144) | ≈ 2.30 (3.42) |
| E6-62-112-[ ]-0 | 4.41 (112) | 5.83 (148) | ≈ 2.30 (3.43) |
| E6-62-12-[ ]-0 | 4.92 (125) | 6.34 (161) | ≈ 2.34 (3.48) |
| E6-62-137-[ ]-0 | 5.39 (137) | 6.81 (173) | ≈ 2.37 (3.52) |
| E6-62-15-[ ]-0 | 5.91 (150) | 7.32 (186) | ≈ 2.40 (3.57) |
| E6-62-162-[ ]-0 | 6.38 (162) | 7.80 (198) | ≈ 2.43 (3.61) |
| E6-62-17-[ ]-0 | 6.61 (168) | 8.03 (204) | ≈ 2.44 (3.63) |
| E6-62-18-[ ]-0 | 6.89 (175) | 8.31 (211) | ≈ 2.45 (3.65) |
| E6-62-187-[ ]-0 | 7.36 (187) | 8.78 (223) | ≈ 2.48 (3.69) |
| E6-62-20-[ ]-0 | 7.87 (200) | 9.29 (236) | ≈ 2.51 (3.74) |
| E6-62-212-[ ]-0 | 8.35 (212) | 9.76 (248) | ≈ 2.54 (3.78) |
| E6-62-23-[ ]-0 | 8.86 (225) | 10.28 (261) | ≈ 2.57 (3.83) |
| E6-62-237-[ ]-0 | 9.33 (237) | 10.75 (273) | ≈ 2.60 (3.87) |
| E6-62-25-[ ]-0 | 9.84 (250) | 11.26 (286) | ≈ 2.63 (3.91) |
| E6-62-262-[ ]-0 | 10.31 (262) | 11.73 (298) | ≈ 2.65 (3.95) |
| E6-62-28-[ ]-0 | 10.83 (275) | 12.24 (311) | ≈ 2.69 (4.00) |
| E6-62-29-[ ]-0 | 11.30 (287) | 12.72 (323) | ≈ 2.71 (4.04) |
| E6-62-30-[ ]-0 | 11.81 (300) | 13.23 (336) | ≈ 2.75 (4.09) |
| E6-62-312-[ ]-0 | 12.28 (312) | 13.70 (348) | ≈ 2.78 (4.13) |
| E6-62-325-[ ]-0 | 12.80 (325) | 14.21 (361) | ≈ 2.80 (4.17) |
| E6-62-337-[ ]-0 | 13.27 (337) | 14.69 (373) | ≈ 2.83 (4.21) |
| E6-62-350-[ ]-0 | 13.78 (350) | 15.20 (386) | ≈ 2.86 (4.26) |
| E6-62-362-[ ]-0 | 14.25 (362) | 15.67 (398) | ≈ 2.89 (4.30) |
| E6-62-375-[ ]-0 | 14.76 (375) | 16.18 (411) | ≈ 2.92 (4.35) |
| E6-62-387-[ ]-0 | 15.24 (387) | 16.65 (423) | ≈ 2.95 (4.39) |
| E6-62-400-[ ]-0 | 15.75 (400) | 17.16 (436) | ≈ 2.98 (4.43) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E6-62-10-200-0

| | 115 | 150 | 200 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|
| R | 4.53 (115) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| H | 15.28 (388) | 18.03 (458) | 21.97 (558) | 25.91 (658) | 29.84 (758) | 33.78 (858) |
| D | 9.21 (234) | 10.59 (269) | 12.56 (319) | 14.53 (369) | 16.50 (419) | 18.46 (469) |
| K | 18.31 (465) | 22.64 (575) | 28.74 (730) | 35.04 (890) | 41.14 (1045) | 47.24 (1200) |

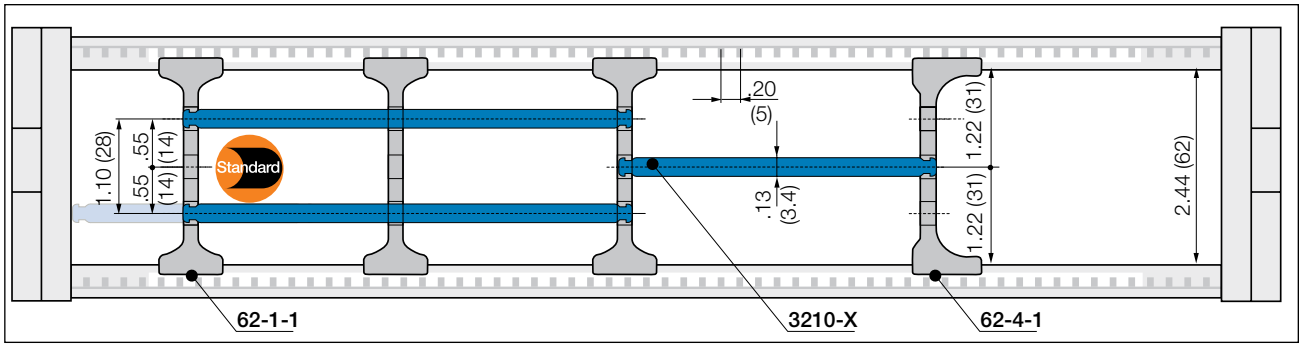
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-62
# Interior Separation - New Generation

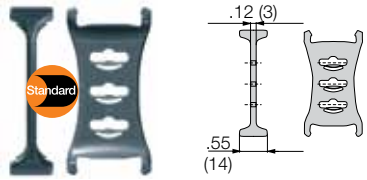


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



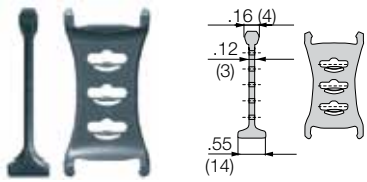

No lateral spacing between the separators and the side links is necessary.
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 62-1** |
| Assembled | **Part No. 62-1-1** |

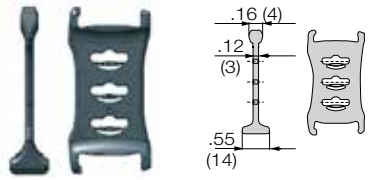
- **Standard separator 62-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator for QuickLock crossbar**

| | |
|---|---|
| Unassembled | **Part No. 62-2** |
| Assembled | **Part No. 62-2-1** |

- **Separator 62-2**
  **For even faster installation**
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).

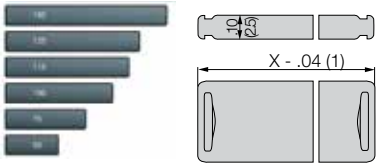



**Notch separator for Notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 62-5** |
| Assembled | **Part No. 62-5-1** |

- **Separator 62-5**
  **Locks safely in .20" (5mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

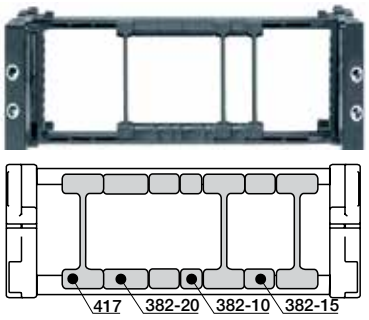
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 1.97 (050) | **3200-50** | **3210-50** | 5.91 (150) | **3200-150** | **3210-150** |
| 2.95 (075) | **3200-75** | **3210-75** | 6.89 (175) | **3200-175** | **3210-175** |
| 3.94 (100) | **3200-100** | **3210-100** | 7.87 (200) | **3200-200** | **3210-200** |
| 4.53 (115) | **3200-115** | **3210-115** | 8.86 (225) | **3200-225** | **3210-225** |
| 4.92 (125) | **3200-125** | **3210-125** | 9.84 (250) | **3200-250** | **3210-250** |

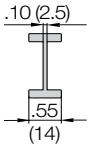
# E-Chain System® E6
# Series E6-62
# Interior Separation - Previous Generation

## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.




- **Vertical separator**
  This separator is used for general subdivision of E-Chains®.




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 407** |
| Assembled | **Part No. 417** |

**Spacer***

*For side-mounted applications

| | |
|---|---|
| Unassembled | **Part No. 381-XX** |
| Assembled | **Part No. 382-XX** |

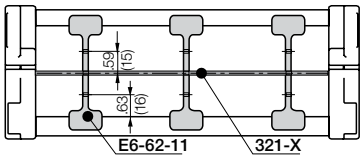
XX = width of the spacer

Spacers available in the following sizes:

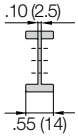
| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **381 -10** | **382 -10** | .39” | (10) |
| **381 -15** | **382 -15** | .59” | (15) |
| **381 -20** | **382 -20** | .79” | (20) |

## Option 2: Full-width shelf

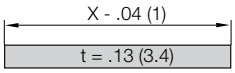
For applications involving many thin cables with similar or identical diameters. Vertical separator **E6-62-11** can be used in combination with full-width shelf **321-X**.




- **Vertical separator, slotted**
  This separator is used for general sub-division of E-Chains®.




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. E6-62-01** |
| Assembled | **Part No. E6-62-11** |

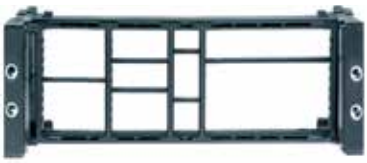


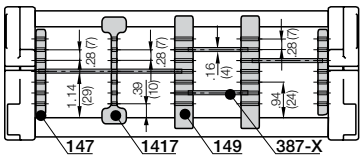

| Width X in. | (mm) | Part No. Unassem. | Part No. Assem. |
|---|---|---|---|
| 1.97 | (050) | **320-50** | **321-50** |
| 2.68 | (068) | **320-68** | **321-68** |
| 2.95 | (075) | **320-75** | **321-75** |
| 3.43 | (087) | **320-87** | **321-87** |
| 3.94 | (100) | **320-100** | **321-100** |
| 4.25 | (108) | **320-108** | **321-108** |
| 4.41 | (112) | **320-112** | **321-112** |
| 4.92 | (125) | **320-125** | **321-125** |
| 5.39 | (137) | **320-137** | **321-137** |
| 5.91 | (150) | **320-150** | **321-150** |

| Width X in. | (mm) | Part No. Unassem. | Part No. Assem. |
|---|---|---|---|
| 6.38 | (162) | **320-162** | **321-162** |
| 6.61 | (168) | **320-168** | **321-168** |
| 2.95 | (175) | **320-175** | **321-175** |
| 7.36 | (187) | **320-187** | **321-187** |
| 7.87 | (200) | **320-200** | **321-200** |
| 8.35 | (212) | **320-212** | **321-212** |
| 8.86 | (225) | **320-225** | **321-225** |
| 9.33 | (237) | **320-237** | **321-237** |
| 9.84 | (250) | **320-250** | **321-250** |

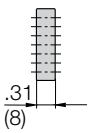
## Option 3: Shelves

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28” (7mm) increments





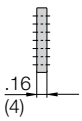

- **Vertical separator**
  This separator is used when higher retention force is needed.




| Vertical Separator | |
|---|---|
| Unassembled | **Part No. 148** |
| Assembled | **Part No. 149** |

| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| .71 | (18) | **386-18** | **387-18** |
| .91 | (23) | **386-23** | **387-23** |
| .98 | (25) | **386-25** | **387-25** |
| 1.10 | (28) | **386-28** | **387-28** |
| 1.30 | (33) | **386-33** | **387-33** |
| 1.69 | (43) | **386-43** | **387-43** |
| 1.97 | (50) | **386-50** | **387-50** |
| 2.13 | (54) | **386-54** | **387-54** |
| 2.44 | (62) | **386-62** | **387-62** |

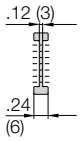
- **Side plate**
  This separator is used for general subdivision of E-Chains®.




| Side Plate | |
|---|---|
| Unassembled | **Part No. 146** |
| Assembled | **Part No. 147** |

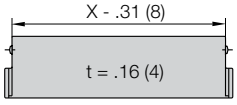
| Width X in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|
| 2.95 | (75) | **386-75** | **387-75** |
| 3.43 | (87) | **386-87** | **387-87** |
| 3.94 | (100) | **386-100** | **387-100** |
| 4.25 | (108) | **386-108** | **387-108** |
| 4.92 | (125) | **386-125** | **387-125** |
| 5.91 | (150) | **386-150** | **387-150** |
| 6.89 | (175) | **386-175** | **387-175** |
| 7.87 | (200) | **386-200** | **387-200** |
| 8.19 | (208) | **386-208** | **387-208** |

- **Vertical separator , slotted**
  This separator is used for general subdivision of E-Chains®.




| Vertical Separator, Slotted | |
|---|---|
| Unassembled | **Part No. 1407** |
| Assembled | **Part No. 1417** |

**Shelves 387-XX**
**Shelf 387-XX** can be used with **vertical separator 149** and **side plate 147**



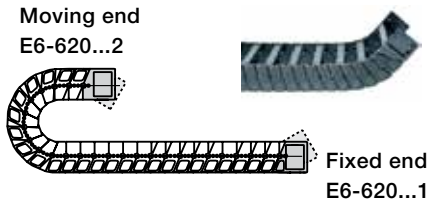

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

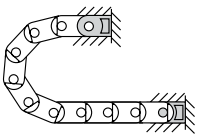
# E-Chain System® E6
# Series E6-62
# Mounting Brackets - KMA

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

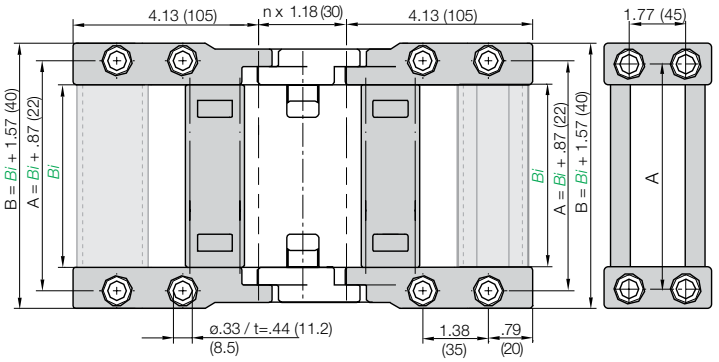
## Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides



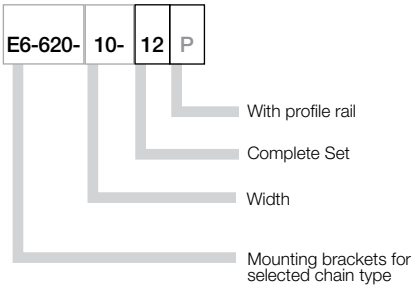


Possible installation configurations -




| For Series | Part No. Full Set Without Profile Rail | Part No. Full Set With Profile Rail | *Bi* in. | (mm) |
|---|---|---|---|---|
| E6-62-05 | **E6-620-05-12** | **E6-620-05-12P** | 1.97 | (50) |
| E6-62-06 | **E6-620-06-12** | **E6-620-06-12P** | 2.67 | (68) |
| E6-62-07 | **E6-620-07-12** | **E6-620-07-12P** | 2.95 | (75) |
| E6-62-087 | **E6-620-087-12** | **E6-620-087-12P** | 3.43 | (87) |
| **E6-62-097** | **E6-620-097-12** | **E6-620-097-12P** | 3.82 | (97) |
| E6-62-10 | **E6-620-10-12** | **E6-620-10-12P** | 3.94 | (100) |
| E6-62-11 | **E6-620-11-12** | **E6-620-11-12P** | 4.25 | (108) |
| E6-62-112 | **E6-620-112-12** | **E6-620-112-12P** | 4.41 | (112) |
| E6-62-12 | **E6-620-12-12** | **E6-620-12-12P** | 4.92 | (125) |
| E6-62-137 | **E6-620-137-12** | **E6-620-137-12P** | 5.39 | (137) |
| E6-62-15 | **E6-620-15-12** | **E6-620-15-12P** | 5.91 | (150) |
| E6-62-162 | **E6-620-162-12** | **E6-620-162-12P** | 6.38 | (162) |
| E6-62-17 | **E6-620-17-12** | **E6-620-17-12P** | 6.61 | (168) |
| E6-62-18 | **E6-620-18-12** | **E6-620-18-12P** | 6.89 | (175) |
| E6-62-187 | **E6-620-187-12** | **E6-620-187-12P** | 7.36 | (187) |
| E6-62-20 | **E6-620-20-12** | **E6-620-20-12P** | 7.87 | (200) |
| E6-62-212 | **E6-620-212-12** | **E6-620-212-12P** | 8.35 | (212) |
| E6-62-23 | **E6-620-23-12** | **E6-620-23-12P** | 8.86 | (225) |
| E6-62-237 | **E6-620-237-12** | **E6-620-237-12P** | 9.33 | (237) |
| E6-62-25 | **E6-620-25-12** | **E6-620-25-12P** | 9.84 | (250) |
| E6-62-262 | **E6-620-262-12** | **E6-620-262-12P** | 10.31 | (262) |
| E6-62-28 | **E6-620-28-12** | **E6-620-28-12P** | 10.83 | (275) |
| E6-62-29 | **E6-620-29-12** | **E6-620-29-12P** | 11.30 | (287) |
| E6-62-30 | **E6-620-30-12** | **E6-620-30-12P** | 11.81 | (300) |
| E6-62-312 | **E6-620-312-12** | **E6-620-312-12P** | 12.28 | (312) |
| E6-62-325 | **E6-620-325-12** | **E6-620-325-12P** | 12.80 | (325) |
| E6-62-337 | **E6-620-337-12** | **E6-620-337-12P** | 13.27 | (337) |
| E6-62-350 | **E6-620-350-12** | **E6-620-350-12P** | 13.78 | (350) |
| E6-62-362 | **E6-620-362-12** | **E6-620-362-12P** | 14.25 | (362) |
| E6-62-375 | **E6-620-375-12** | **E6-620-375-12P** | 14.76 | (375) |
| E6-62-387 | **E6-620-387-12** | **E6-620-387-12P** | 15.24 | (387) |
| E6-62-400 | **E6-620-400-12** | **E6-620-400-12P** | 15.75 | (400) |

### Part Number Structure



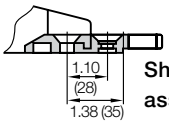

**Full set, for both ends:**
E6-620- | 10- | 12 Full set, **both fixed and moving end**

**Single-part order:**
E6-620 - | 10- | 1
Mounting bracket **fixed end**

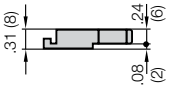
E6-620 - | 10- | 2
Mounting bracket **moving end**

**Adapters for gliding applications available upon request**

## Tiewrap Plates




Shown assembled

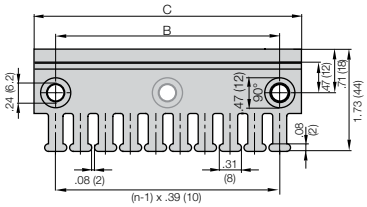



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-80



## Price Index

Series E6-80

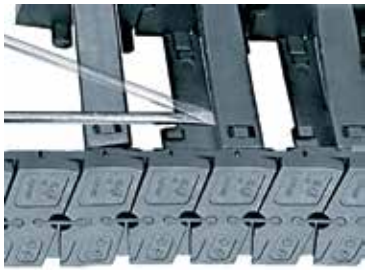
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system (Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 196.9 ft (60 m) |
| Vertical, standing ≤ 13.12 ft (4 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

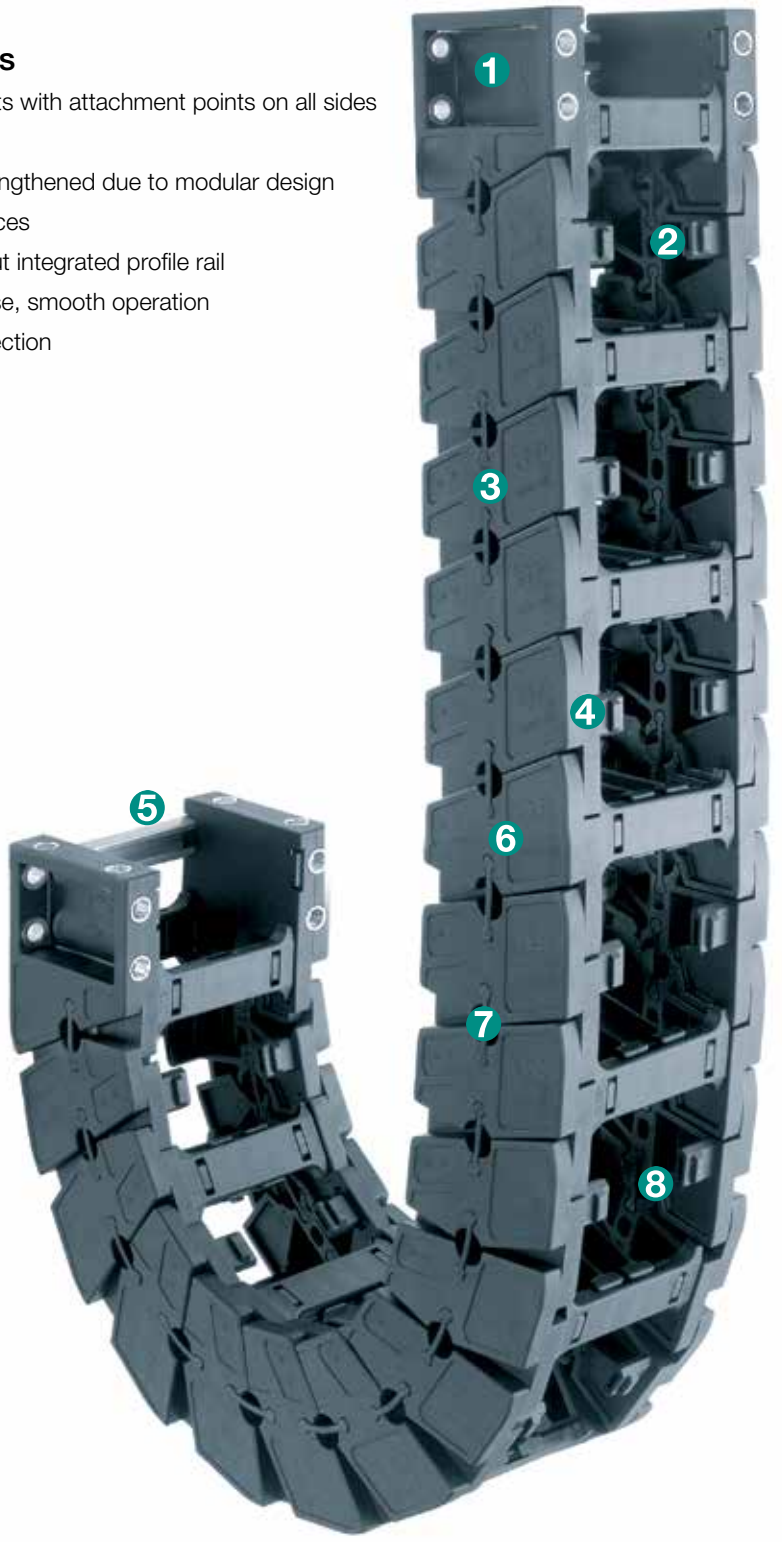
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 5050 E4/4**
- For RBR (Reverse Bending Radius)
  ➤ **Series 5050 E4/4**
- For high additional loads
  ➤ **Series 5050 E4/4**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Can be shortened or lengthened due to modular design
4. Very large gliding surfaces
5. Available with or without integrated profile rail
6. Small pitch for low-noise, smooth operation
7. No pin and bore connection
8. Interior stop dog




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E6-80-10-200-0** | **E-Chain®** |
| With 2 separators **511** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-800-10-12** | **Mounting Bracket** |

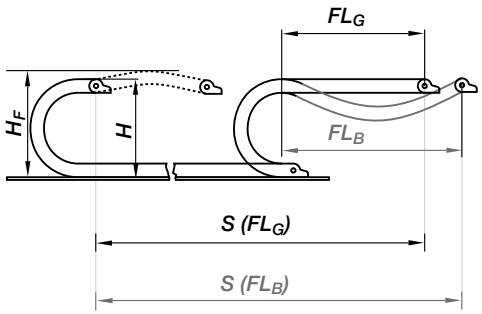
# E-Chain System® E6
# Series E6-80
# Installation Dimensions

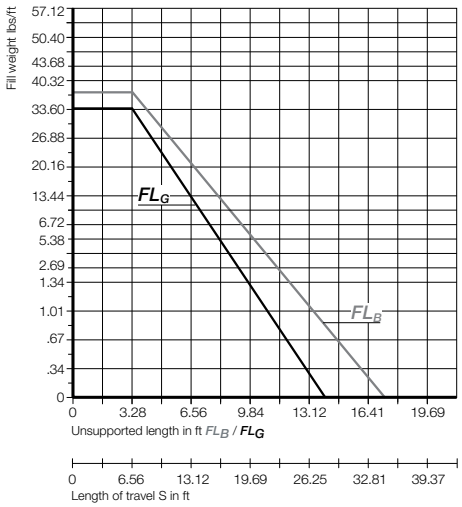
**Short travel, unsupported length**

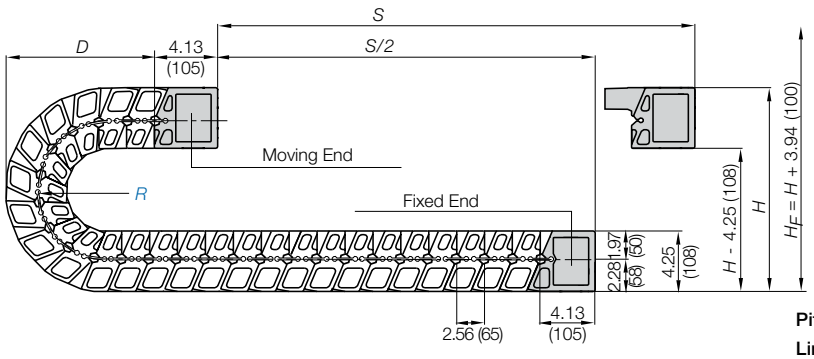
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

**Pitch per link: =** 2.56" (65 mm)
**Links per ft (m): =** 4.68 (16)
**Chain length: =** $_{S}/_{2}$ + K

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.71 (450) |
|---|---|---|---|---|---|---|---|
| H* | 20.31 (516) | 24.25 (616) | 28.19 (716) | 32.13 (816) | 36.06 (916) | 40.00 (1016) | 43.94 (1116) |
| D | 12.05 (306) | 14.02 (356) | 15.98 (406) | 17.95 (456) | 19.92 (506) | 21.89 (556) | 23.86 (606) |
| K | 23.82 (605) | 29.92 (760) | 36.22 (920) | 42.32 (1075) | 48.43 (1230) | 54.72 (1390) | 60.83 (1545) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

*If the mounting bracket location is set lower

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

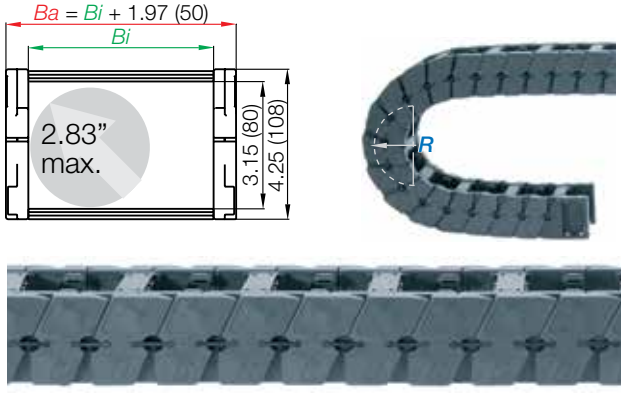
Details of material properties
➤ **Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-80

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E6-80 - E-Chain® with crossbars every other link

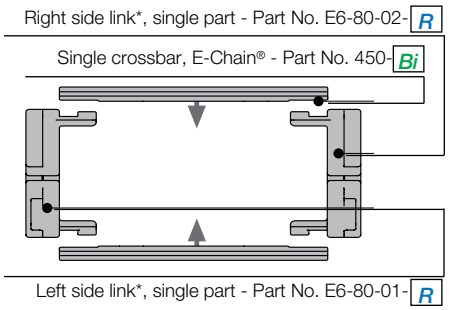


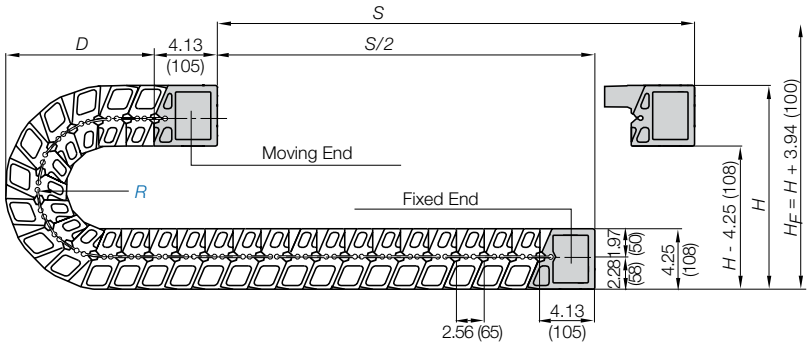

**Part Number Structure**

| E6-80- | 15- | 175- | 0 |
|---|---|---|---|

- 0 – Color - Black
- 175 – Bending radius
- 15 – Width
- E6-80 – Series

## E-Chain® as separate parts, side links and crossbars




*View from the fixed point of the E-Chain®/E-Tube

**Polymer spring as single part - Part No. E6-80-350**

# E-Chain System® E6
# Series E6-80

Supplement part number with required radius. Example: E6-80-10-[200]-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-80-05-[ ]-0 | 1.97 (50) | 3.94 (100) | ≈3.50 (5.21) |
| E6-80-06-[ ]-0 | 2.56 (65) | 4.53 (115) | ≈3.55 (5.28) |
| E6-80-07-[ ]-0 | 2.95 (75) | 4.92 (125) | ≈3.58 (5.33) |
| E6-80-08-[ ]-0 | 3.43 (87) | 5.91 (137) | ≈3.62 (5.38) |
| E6-80-10-[ ]-0 | 3.94 (100) | 5.91 (150) | ≈3.66 (5.45) |
| E6-80-11-[ ]-0 | 4.41 (112) | 6.38 (162) | ≈3.70 (5.50) |
| E6-80-12-[ ]-0 | 4.92 (125) | 6.89 (175) | ≈3.74 (5.57) |
| E6-80-13-[ ]-0 | 5.39 (137) | 7.36 (187) | ≈3.78 (5.62) |
| E6-80-15-[ ]-0 | 5.91 (150) | 7.87 (200) | ≈3.82 (5.68) |
| E6-80-16-[ ]-0 | 6.38 (162) | 8.35 (212) | ≈3.86 (5.74) |
| E6-80-17-[ ]-0 | 6.89 (175) | 8.86 (225) | ≈3.90 (5.80) |
| E6-80-18-[ ]-0 | 7.36 (187) | 9.33 (237) | ≈3.94 (5.86) |
| E6-80-20-[ ]-0 | 7.87 (200) | 9.84 (250) | ≈3.98 (5.92) |
| E6-80-21-[ ]-0 | 8.35 (212) | 10.31 (262) | ≈4.02 (5.98) |
| E6-80-22-[ ]-0 | 8.86 (225) | 10.83 (275) | ≈4.06 (6.04) |
| E6-80-23-[ ]-0 | 9.33 (237) | 11.30 (287) | ≈4.10 (6.10) |
| E6-80-25-[ ]-0 | 9.84 (250) | 11.81 (300) | ≈4.14 (6.16) |
| E6-80-26-[ ]-0 | 10.31 (262) | 12.28 (312) | ≈4.17 (6.21) |
| E6-80-27-[ ]-0 | 10.83 (275) | 12.80 (325) | ≈4.22 (6.28) |
| E6-80-28-[ ]-0 | 11.30 (287) | 13.27 (337) | ≈4.25 (6.33) |
| E6-80-30-[ ]-0 | 11.81 (300) | 13.78 (350) | ≈4.29 (6.39) |
| E6-80-31-[ ]-0 | 12.28 (312) | 14.25 (362) | ≈4.33 (6.45) |
| E6-80-32-[ ]-0 | 12.80 (325) | 14.76 (375) | ≈4.37 (6.51) |
| E6-80-33-[ ]-0 | 13.27 (337) | 15.24 (387) | ≈4.41 (6.57) |
| E6-80-35-[ ]-0 | 13.78 (350) | 15.75 (400) | ≈4.46 (6.63) |
| E6-80-36-[ ]-0 | 14.25 (362) | 16.22 (412) | ≈4.50 (6.69) |
| E6-80-37-[ ]-0 | 14.76 (375) | 16.73 (425) | ≈4.54 (6.75) |
| E6-80-38-[ ]-0 | 15.24 (387) | 17.20 (437) | ≈4.57 (6.80) |
| E6-80-40-[ ]-0 | 15.75 (400) | 17.72 (450) | ≈4.62 (6.88) |
| E6-80-41-[ ]-0 | 16.22 (412) | 18.19 (462) | ≈4.65 (6.92) |
| E6-80-42-[ ]-0 | 16.73 (425) | 18.70 (475) | ≈4.70 (6.99) |
| E6-80-43-[ ]-0 | 17.20 (437) | 19.17 (487) | ≈4.73 (7.04) |
| E6-80-45-[ ]-0 | 17.72 (450) | 19.69 (500) | ≈4.77 (7.10) |
| E6-80-46-[ ]-0 | 18.19 (462) | 20.16 (512) | ≈4.81 (7.16) |
| E6-80-47-[ ]-0 | 18.70 (475) | 20.67 (525) | ≈4.85 (7.22) |
| E6-80-48-[ ]-0 | 19.17 (487) | 21.14 (537) | ≈4.89 (7.28) |
| E6-80-50-[ ]-0 | 19.69 (500) | 21.65 (550) | ≈4.93 (7.34) |
| E6-80-51-[ ]-0 | 20.16 (512) | 22.13 (562) | ≈4.97 (7.40) |
| E6-80-52-[ ]-0 | 20.67 (525) | 22.64 (575) | ≈5.01 (7.46) |
| E6-80-53-[ ]-0 | 21.14 (537) | 23.11 (587) | ≈5.05 (7.52) |
| E6-80-55-[ ]-0 | 21.65 (550) | 23.62 (600) | ≈5.09 (7.58) |
| E6-80-60-[ ]-0 | 23.62 (600) | 25.59 (650) | ≈5.25 (7.81) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E6-80-10-[200]-0

| | 150 | 200 | 250 | 300 | 350 | 400 | 450 |
|---|---|---|---|---|---|---|---|
| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.71 (450) |
| H* | 20.31 (516) | 24.25 (616) | 28.19 (716) | 32.13 (816) | 36.06 (916) | 40.00 (1016) | 43.94 (1116) |
| D | 12.05 (306) | 14.02 (356) | 15.98 (406) | 17.95 (456) | 19.92 (506) | 21.89 (556) | 23.86 (606) |
| K | 23.82 (605) | 29.92 (760) | 36.22 (920) | 42.32 (1075) | 48.43 (1230) | 54.72 (1390) | 60.82 (1545) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-80
# Interior Separation - New Generation

igus® E-Chain System®
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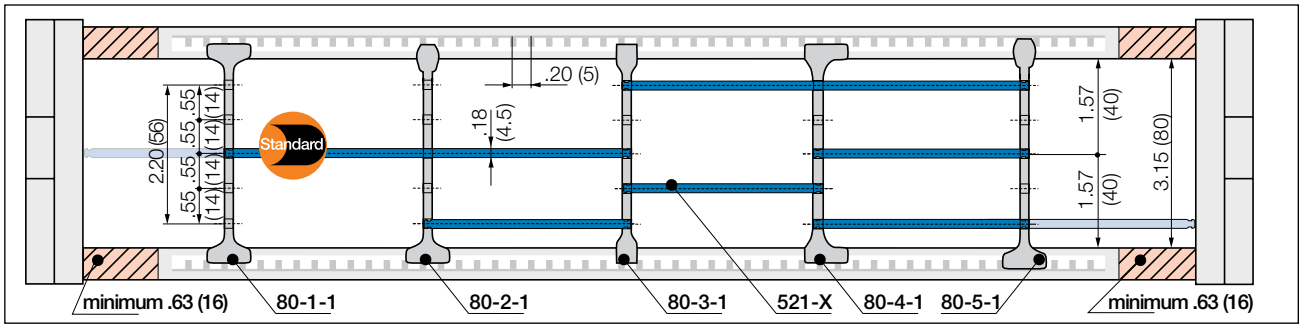
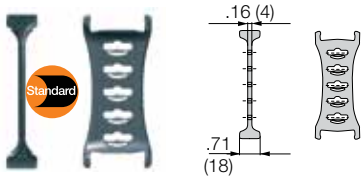
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



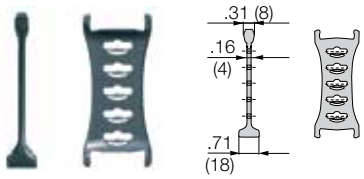

Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

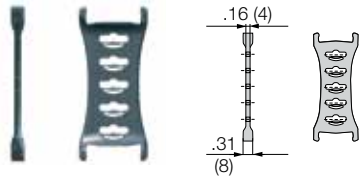
- **Standard separator 80-1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator for QuickLock crossbar**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

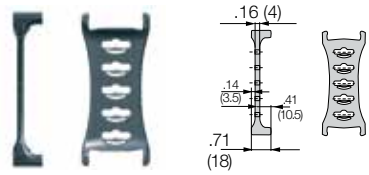
- **Separator 80-2**
  **For even faster installation**
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

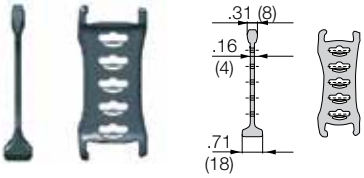
- **Separator 80-3**
  **For many thin cables**
  Separator with a narrow base for a large number of thin cables side by side. Save space in E-Chains®.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-4** |
| Assembled | **Part No. 80-4-1** |

- **Separator 80-4**
  **For side-mounted applications**
  Asymmetrical separator, for defined distance. No additional spacers necessary.

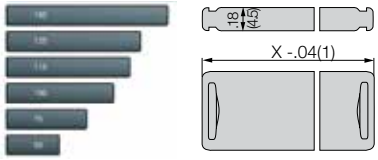



**Notch separator for Notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .20" (5mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

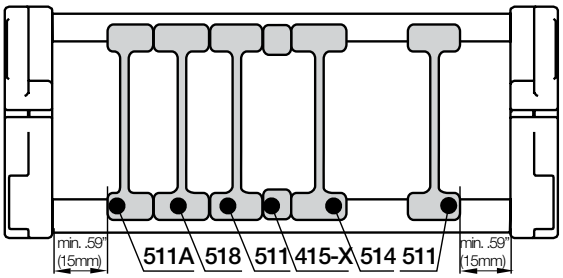
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-050** | **521-050** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.55 (065) | **520-065** | **521-065** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-075** | **521-075** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.72 (450) | **520-450** | **521-450** |

# E-Chain System® E6
# Series E6-80
# Interior Separation - Previous Generation

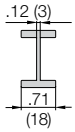
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



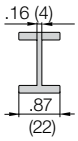
**Vertical separator 501**




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

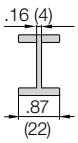
**Locking separator 504**




| Locking separator | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

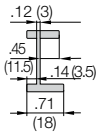
**Locking separator 508**




| Locking separator | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

**Asymmetric separator 501A**




| Asymmetrical separator | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacers 405-XX**

| Spacer | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

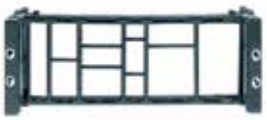
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

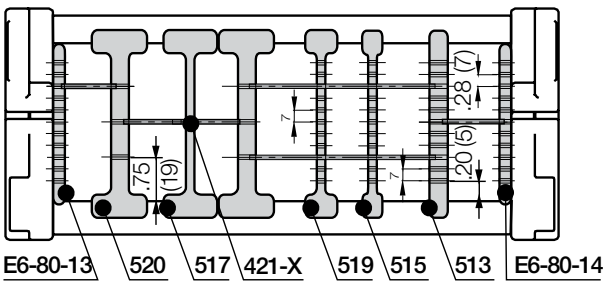
# E-Chain System® E6
# Series E6-80
# Interior Separation - Previous Generation



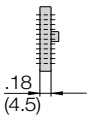
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.




- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.




**Side plate (left)**

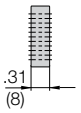
| | |
|---|---|
| Unassembled | **Part No. E6-80-03** |
| Assembled | **Part No. E6-80-13** |

**Side plate (right)**

| | |
|---|---|
| Unassembled | **Part No. E6-80-04** |
| Assembled | **Part No. E6-80-14** |

**Side plate**
**E6-80-03 (left)**
**E6-80-04 (right)**

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

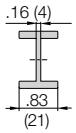



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

**Vertical separator**
**503**

- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

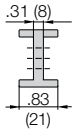



**Locking separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

**Locking separator,**
**slotted**
**507**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.

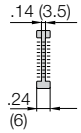



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

**Locking vertical**
**separator**
**510**

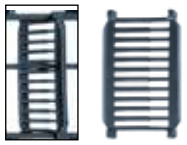
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



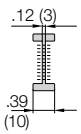

**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

**Closed slotted**
**separator**
**505**



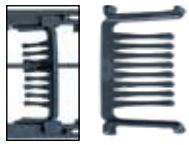
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

**Open slotted**
**separator**
**509**

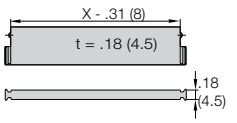


**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

| Width X in. | (mm) | Usable Width in. | (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |

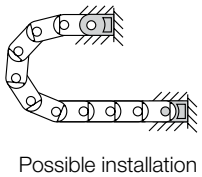


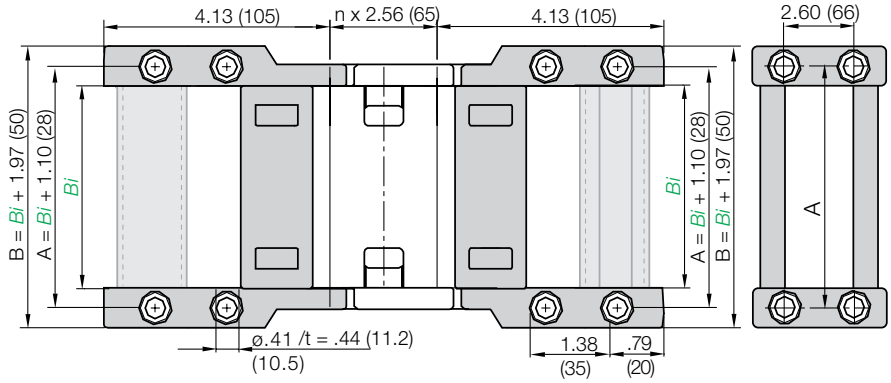
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E6
# Series E6-80
# Mounting Brackets - KMA

## Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides


Possible installation configurations -




**Part Number Structure**

| E6-800- | 05- | 12 | P |
|---|---|---|---|

- 12 — With profile rail
- 05- — Complete Set
- E6-800- — Width
- Mounting brackets for selected chain type

**Full set, for both ends:**
E6-800- 05- 12 Full set, **both fixed and moving end**

**Single-part order:**
E6-800- 05- 1
Mounting bracket **fixed end**
E6-800- 05- 2
Mounting bracket **moving end**

**Adapters for gliding applications available upon request**

| For Series | Part No. Full Set W/O Profile Rail | Part No. Full Set With Profile Rail | *Bi* in. | *Bi* (mm) |
|---|---|---|---|---|
| E6-80-05 | **E6-800-05-12** | **E6-800-05-12P** | 1.97 | (50) |
| E6-80-06 | **E6-800-06-12** | **E6-800-06-12P** | 2.56 | (65) |
| E6-80-07 | **E6-800-07-12** | **E6-800-07-12P** | 2.95 | (75) |
| E6-80-08 | **E6-800-08-12** | **E6-800-08-12P** | 3.43 | (87) |
| E6-80-10 | **E6-800-10-12** | **E6-800-10-12P** | 3.94 | (100) |
| E6-80-11 | **E6-800-11-12** | **E6-800-11-12P** | 4.41 | (112) |
| E6-80-12 | **E6-800-12-12** | **E6-800-12-12P** | 4.92 | (125) |
| E6-80-13 | **E6-800-13-12** | **E6-800-13-12P** | 5.39 | (137) |
| E6-80-15 | **E6-800-15-12** | **E6-800-15-12P** | 5.91 | (150) |
| E6-80-16 | **E6-800-16-12** | **E6-800-16-12P** | 6.38 | (162) |
| E6-80-17 | **E6-800-17-12** | **E6-800-17-12P** | 6.89 | (175) |
| E6-80-18 | **E6-800-18-12** | **E6-800-18-12P** | 7.36 | (187) |
| E6-80-20 | **E6-800-20-12** | **E6-800-20-12P** | 7.87 | (200) |
| E6-80-21 | **E6-800-21-12** | **E6-800-21-12P** | 8.35 | (212) |
| E6-80-22 | **E6-800-22-12** | **E6-800-22-12P** | 8.86 | (225) |
| E6-80-23 | **E6-800-23-12** | **E6-800-23-12P** | 9.33 | (237) |
| E6-80-25 | **E6-800-25-12** | **E6-800-25-12P** | 9.84 | (250) |
| E6-80-26 | **E6-800-26-12** | **E6-800-26-12P** | 10.31 | (262) |
| E6-80-27 | **E6-800-27-12** | **E6-800-27-12P** | 10.83 | (275) |
| E6-80-28 | **E6-800-28-12** | **E6-800-28-12P** | 11.30 | (287) |
| E6-80-30 | **E6-800-30-12** | **E6-800-30-12P** | 11.81 | (300) |

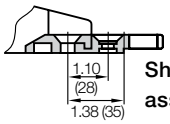
| For Series | Part No. Full Set W/O Profile Rail | Part No. Full Set With Profile Rail | *Bi* in. | *Bi* (mm) |
|---|---|---|---|---|
| E6-80-31 | **E6-800-31-12** | **E6-800-31-12P** | 12.28 | (312) |
| E6-80-32 | **E6-800-32-12** | **E6-800-32-12P** | 12.80 | (325) |
| E6-80-33 | **E6-800-33-12** | **E6-800-33-12P** | 13.27 | (337) |
| E6-80-35 | **E6-800-35-12** | **E6-800-35-12P** | 13.78 | (350) |
| E6-80-36 | **E6-800-36-12** | **E6-800-36-12P** | 14.25 | (362) |
| E6-80-37 | **E6-800-37-12** | **E6-800-37-12P** | 14.76 | (375) |
| E6-80-38 | **E6-800-38-12** | **E6-800-38-12P** | 15.24 | (387) |
| E6-80-40 | **E6-800-40-12** | **E6-800-40-12P** | 15.75 | (400) |
| E6-80-41 | **E6-800-41-12** | **E6-800-41-12P** | 16.72 | (412) |
| E6-80-42 | **E6-800-42-12** | **E6-800-42-12P** | 16.73 | (425) |
| E6-80-43 | **E6-800-43-12** | **E6-800-43-12P** | 17.20 | (437) |
| E6-80-45 | **E6-800-45-12** | **E6-800-45-12P** | 17.72 | (450) |
| E6-80-46 | **E6-800-46-12** | **E6-800-46-12P** | 18.19 | (462) |
| E6-80-47 | **E6-800-47-12** | **E6-800-47-12P** | 18.70 | (475) |
| E6-80-48 | **E6-800-48-12** | **E6-800-48-12P** | 19.17 | (487) |
| E6-80-50 | **E6-800-50-12** | **E6-800-50-12P** | 19.69 | (500) |
| E6-80-51 | **E6-800-51-12** | **E6-800-51-12P** | 20.16 | (512) |
| E6-80-52 | **E6-800-52-12** | **E6-800-52-12P** | 20.67 | (525) |
| E6-80-53 | **E6-800-53-12** | **E6-800-53-12P** | 21.14 | (537) |
| E6-80-55 | **E6-800-55-12** | **E6-800-55-12P** | 21.65 | (550) |
| E6-80-60 | **E6-800-60-12** | **E6-800-60-12P** | 25.59 | (600) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

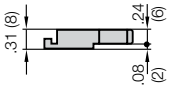
# E-Chain System® E6
# Series E6-80
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

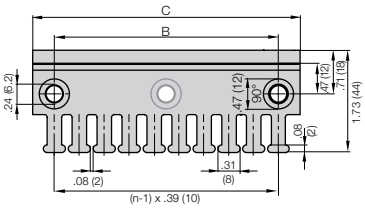



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**Other strain relief elements**
**➤ Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-80L

3.15

## Price Index

Series E6-80L

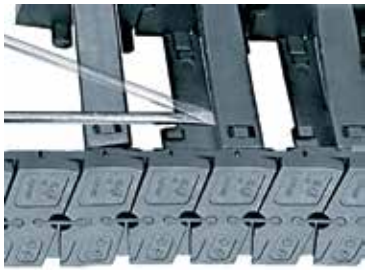
## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

LEVEL 1 absorption confirmed by IPA-Fraunhofer-Institute according to SEMI E78-0998 for the E6 standard material

## Assembly Tips



To close, push and click shut

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 196.8 ft (60 m) |
| Vertical, standing ≤ 13.12 ft (4 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

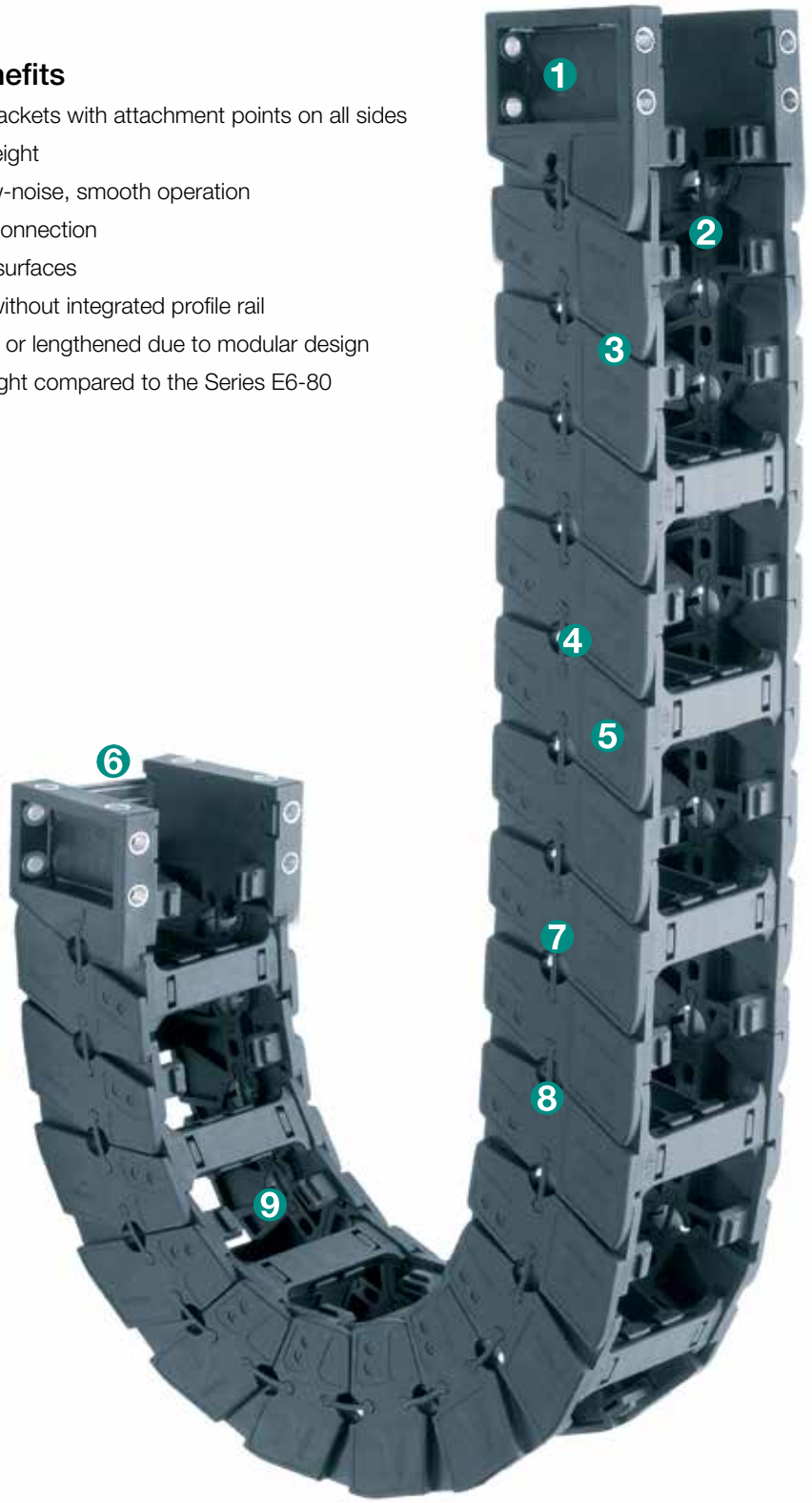
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side mounted applications
  ➤ **Series 15050 E4/Light**
- For RBR (Reverse Bending Radius)
  ➤ **Series 15050 E4/Light**
- For high additional loads
  ➤ **Series 15050 E4/Light**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Increased inner height
3. Small pitch for low-noise, smooth operation
4. No pin and bore connection
5. Continuous glide surfaces
6. Available with or without integrated profile rail
7. Can be shortened or lengthened due to modular design
8. 45% lighter in weight compared to the Series E6-80
9. Interior stop dog




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **E6-80L-15-175-0** | **E-Chain®** |
| With 2 separators **511** assembled every 2nd link | **Interior Separation** |
| 1 Set **E6-800L-15-12** | **Mounting Bracket** |

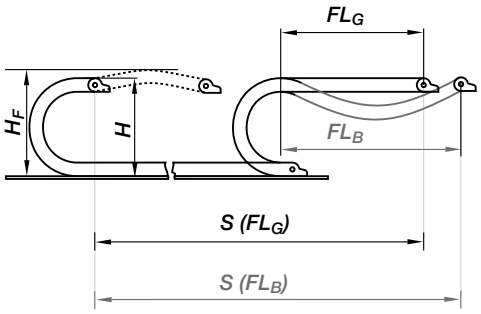
# E-Chain System® E6
# Series E6-80L
# Installation Dimensions

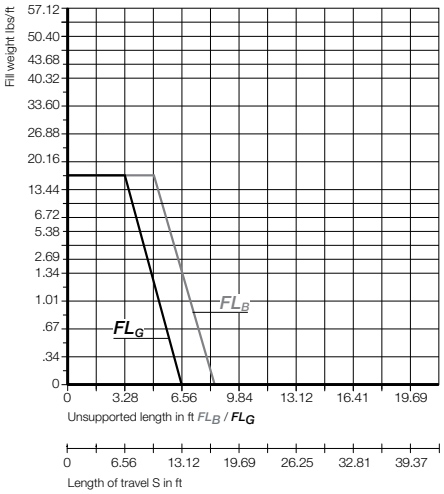
**Short travel, unsupported length**

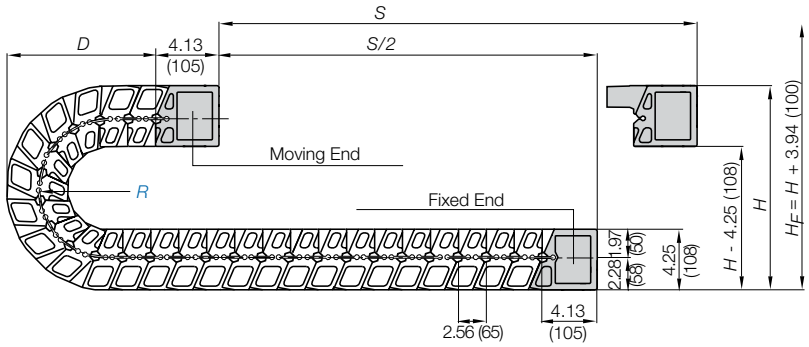
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: $H_F = H + 3.94$ **in. (100 mm)** (with 3.36 lbs/ft (5.0 kg/m) fill weight. Please consult igus® if space is particularly restricted.

| R | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|
| H* | 20.31 (516) | 22.28 (566) | 24.25 (616) | 28.19 (716) | 32.13 (816) |
| D | 12.05 (306) | 13.03 (331) | 14.02 (356) | 15.98 (406) | 17.95 (456) |
| K | 23.82 (605) | 26.77 (680) | 29.92 (760) | 36.02 (915) | 42.32 (1075) |

**Pitch per link: =** 2.56" (65 mm)
**Links per ft (m): =** 4.68 (16)
**For center mount applications:**
**Chain length =** $^{S}/_{2} + K$

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ **Design, Chapter 1**

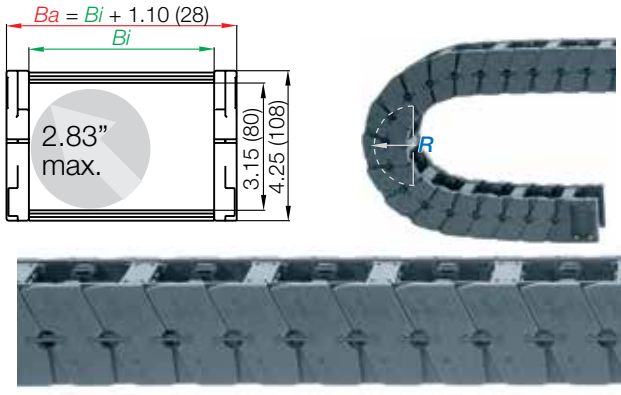


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

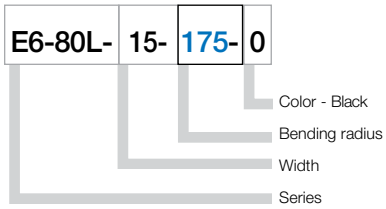
# E-Chain System® E6
# Series E6-80L

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

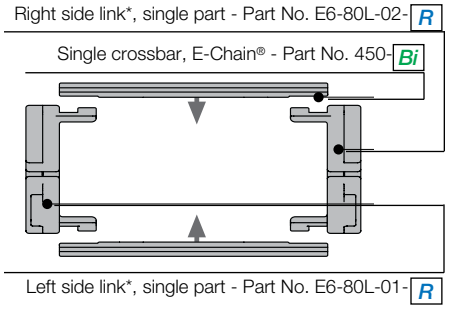
## Series E6-80L - E-Chain® with crossbars every other link

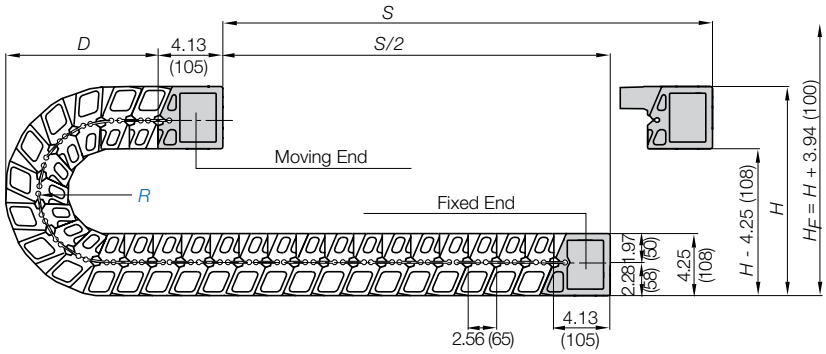



**Part Number Structure**




## E-Chain® as separate parts, side links and crossbars




*View from the fixed point of the E-Chain®/E-Tube

**Polymer spring as single part - Part No. E6-80-350**

# E-Chain System® E6
# Series E6-80L

Supplement part number with required radius. Example: E6-80L-15-[175]-0
Pitch: 2.56 in. (65 mm) per link links/ft (m) = 4.68 (16)

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E6-80L-08-[ ]-0 | 3.43 (87) | 4.53 (115) | ≈ 2.20 (3.28) |
| E6-80L-10-[ ]-0 | 3.94 (100) | 5.04 (128) | ≈ 2.24 (3.33) |
| E6-80L-11-[ ]-0 | 4.41 (112) | 5.51 (140) | ≈ 2.26 (3.38) |
| E6-80L-12-[ ]-0 | 4.92 (125) | 6.02 (153) | ≈ 2.30 (3.43) |
| E6-80L-13-[ ]-0 | 5.39 (137) | 6.50 (165) | ≈ 2.35 (3.49) |
| E6-80L-15-[ ]-0 | 5.91 (150) | 7.01 (178) | ≈ 2.39 (3.55) |
| E6-80L-16-[ ]-0 | 6.38 (162) | 7.48 (190) | ≈ 2.43 (3.61) |
| E6-80L-17-[ ]-0 | 6.89 (175) | 7.99 (203) | ≈ 2.47 (3.67) |
| E6-80L-18-[ ]-0 | 7.36 (187) | 8.46 (215) | ≈ 2.51 (3.73) |
| E6-80L-20-[ ]-0 | 7.87 (200) | 8.98 (228) | ≈ 2.55 (3.79) |
| E6-80L-21-[ ]-0 | 8.35 (212) | 9.45 (240) | ≈ 2.59 (3.85) |
| E6-80L-22-[ ]-0 | 8.86 (225) | 9.96 (253) | ≈ 2.63 (3.91) |
| E6-80L-23-[ ]-0 | 9.33 (237) | 10.43 (265) | ≈ 2.67 (3.97) |
| E6-80L-25-[ ]-0 | 9.84 (250) | 10.94 (278) | ≈ 2.70 (4.02) |
| E6-80L-26-[ ]-0 | 10.31 (262) | 11.42 (290) | ≈ 2.75 (4.09) |
| E6-80L-27-[ ]-0 | 10.83 (275) | 11.93 (303) | ≈ 2.78 (4.14) |
| E6-80L-28-[ ]-0 | 11.30 (287) | 12.40 (315) | ≈ 2.82 (4.20) |
| E6-80L-30-[ ]-0 | 11.81 (300) | 12.91 (328) | ≈ 2.86 (4.26) |
| E6-80L-31-[ ]-0 | 12.28 (312) | 13.39 (340) | ≈ 2.90 (4.32) |
| E6-80L-32-[ ]-0 | 12.80 (325) | 13.90 (353) | ≈ 2.94 (4.38) |
| E6-80L-33-[ ]-0 | 13.27 (337) | 14.37 (365) | ≈ 2.98 (4.44) |
| E6-80L-35-[ ]-0 | 13.78 (350) | 14.88 (378) | ≈ 3.02 (4.50) |
| E6-80L-36-[ ]-0 | 14.25 (362) | 15.35 (390) | ≈ 3.06 (4.56) |
| E6-80L-37-[ ]-0 | 14.76 (375) | 15.87 (403) | ≈ 3.10 (4.62) |
| E6-80L-38-[ ]-0 | 15.24 (387) | 16.34 (415) | ≈ 3.14 (4.68) |
| E6-80L-40-[ ]-0 | 15.75 (400) | 16.85 (428) | ≈ 3.19 (4.74) |
| E6-80L-41-[ ]-0 | 16.22 (412) | 17.32 (440) | ≈ 3.23 (4.80) |
| E6-80L-42-[ ]-0 | 16.73 (425) | 17.83 (453) | ≈ 3.26 (4.85) |
| E6-80L-43-[ ]-0 | 17.20 (437) | 18.31 (465) | ≈ 3.31 (4.92) |
| E6-80L-45-[ ]-0 | 17.72 (450) | 18.82 (478) | ≈ 3.38 (5.03) |
| E6-80L-46-[ ]-0 | 18.19 (462) | 19.29 (490) | ≈ 3.42 (5.09) |
| E6-80L-47-[ ]-0 | 18.70 (475) | 19.80 (503) | ≈ 3.46 (5.15) |
| E6-80L-48-[ ]-0 | 19.17 (487) | 20.28 (515) | ≈ 3.50 (5.21) |
| E6-80L-50-[ ]-0 | 19.69 (500) | 20.79 (528) | ≈ 3.54 (5.27) |
| E6-80L-51-[ ]-0 | 20.16 (512) | 21.26 (540) | ≈ 3.58 (5.33) |
| E6-80L-52-[ ]-0 | 20.67 (525) | 21.77 (553) | ≈ 3.62 (5.39) |
| E6-80L-53-[ ]-0 | 21.14 (537) | 22.24 (565) | ≈ 3.66 (5.45) |
| E6-80L-55-[ ]-0 | 21.65 (550) | 22.76 (578) | ≈ 3.70 (5.51) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E6-80L-15-[175]-0

| | 150 | 175 | 200 | 250 | 300 |
|---|---|---|---|---|---|
| R | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| H* | 20.31 (516) | 22.28 (566) | 24.25 (616) | 28.19 (716) | 32.13 (816) |
| D | 12.05 (306) | 13.03 (331) | 14.02 (356) | 15.98 (406) | 17.95 (456) |
| K | 23.82 (605) | 26.77 (680) | 29.92 (760) | 36.02 (915) | 42.32 (1075) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E6-80L
# Interior Separation - New Generation

igus® E-Chain System®
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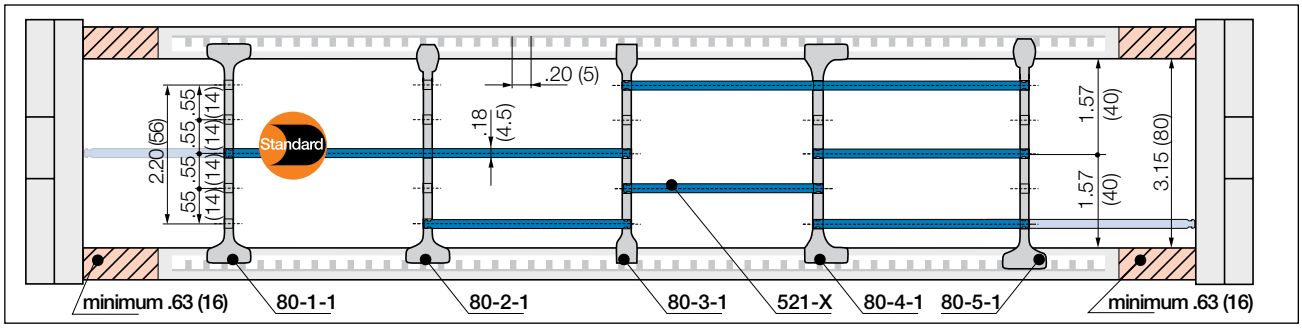
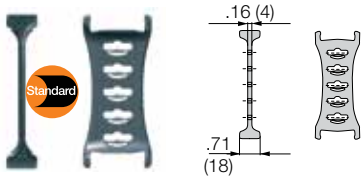
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



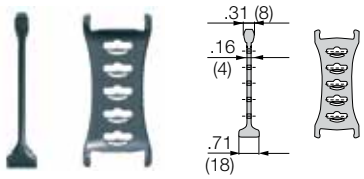

Note: Please maintain a lateral spacing of .63" (16 mm) between the separators and the side links.
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

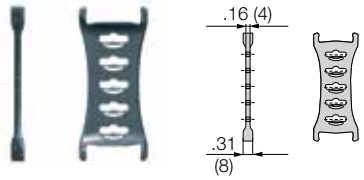
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator for QuickLock crossbar**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

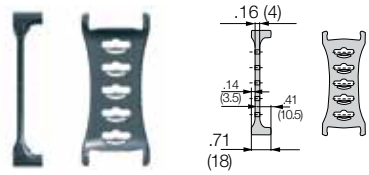
- **Separator 80-2**
  **For even faster installation**
  Separator for QuickLock crossbar 385-X-Q. Firmly holds to one side with a wide base, narrow on opposite side for easy cable assembly (slight grip).




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

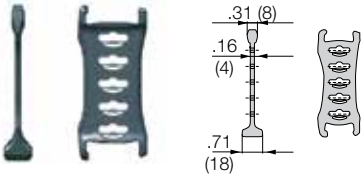
- **Separator 80-3**
  **For many thin cables**
  Separator with a narrow base for a large number of thin cables side by side. Save space in E-Chains®.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-4** |
| Assembled | **Part No. 80-4-1** |

- **Separator 80-4**
  **For side-mounted applications**
  Asymmetrical separator, for defined distance. No additional spacers necessary.

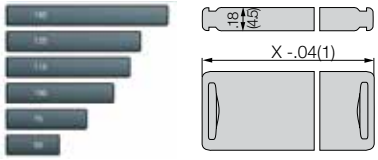



**Notch separator for Notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .20" (5mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf horizontally. Can be arranged at three different heights.

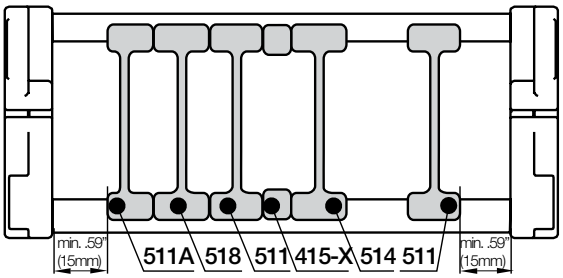
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-050** | **521-050** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.55 (065) | **520-065** | **521-065** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-075** | **521-075** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.72 (450) | **520-450** | **521-450** |

# E-Chain System® E6
# Series E6-80L
# Interior Separation - Previous Generation

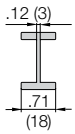
## Option 1: Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates



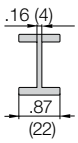
Vertical separator 501




| Vertical separator | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

- **Standard separator 501**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.

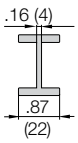
Locking separator 504




| Locking separator | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

- **Locking separator 504**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.

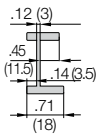
Locking separator 508




| Locking separator | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.

Asymmetric separator 501A




| Asymmetrical separator | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A**
  This separator features an (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

Spacers 405-XX

| Spacer | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

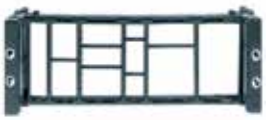
- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications. The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) |
| **405 -15** | **415 -15** | .59" | (15) |
| **405 -20** | **415 -20** | 79" | (20) |
| **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -40** | **415 -40** | 1.57" | (40) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

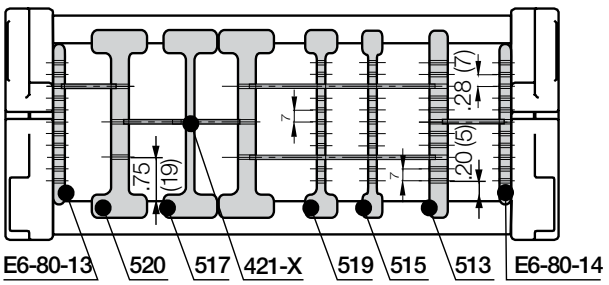
# E-Chain System® E6
# Series E6-80L
# Interior Separation - Previous Generation



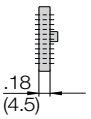
## Option 2: Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.




- **Side plates E6-80-03/E6-80-04**
  This component is used to form the basic pattern of a shelf system.




**Side plate (left)**

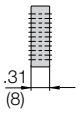
| | |
|---|---|
| Unassembled | **Part No. E6-80-03** |
| Assembled | **Part No. E6-80-13** |

**Side plate (right)**

| | |
|---|---|
| Unassembled | **Part No. E6-80-04** |
| Assembled | **Part No. E6-80-14** |

**Side plate**
**E6-80-03 (left)**
**E6-80-04 (right)**

- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.

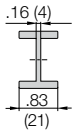



**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

**Vertical separator**
**503**

- **Locking separator, slotted 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.

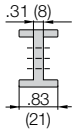



**Locking separator, slotted**

| | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

**Locking separator,**
**slotted**
**507**

- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves.

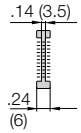



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

**Locking vertical**
**separator**
**510**

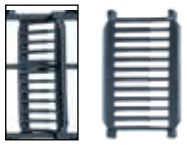
- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.



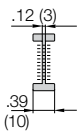

**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

**Closed slotted**
**separator**
**505**



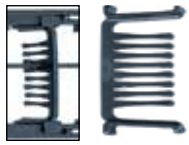
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

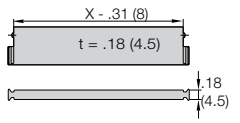
**Open slotted**
**separator**
**509**



**Shelves 420-XX**

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 11 different heights in .28" (7mm) increments

| Width X in.(mm) | Usable Width in. | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|
| .71 (18) | .39 (10) | **420-18** | **421-18** | 2.95 (75) | 2.64 (67) | **420-75** | **421-75** |
| .91 (23) | .59 (15) | **420-23** | **421-23** | 3.46 (88) | 3.15 (80) | **420-88** | **421-88** |
| .98 (25) | .67 (17) | **420-25** | **421-25** | 3.94 (100) | 3.62 (92) | **420-100** | **421-100** |
| 1.10 (28) | .79 (20) | **420-28** | **421-28** | 4.92 (125) | 4.61 (117) | **420-125** | **421-125** |
| 1.30 (33) | .98 (25) | **420-33** | **421-33** | 5.91 (150) | 5.59 (142) | **420-150** | **421-150** |
| 1.69 (43) | 1.38 (35) | **420-43** | **421-43** | 6.89 (175) | 6.57 (167) | **420-175** | **421-175** |
| 1.97 (50) | 1.65 (42) | **420-50** | **421-50** | 7.36 (187) | 7.05 (179) | **420-187** | **421-187** |
| 2.44 (62) | 2.13 (54) | **420-62** | **421-62** | 7.87 (200) | 7.56 (192) | **420-200** | **421-200** |



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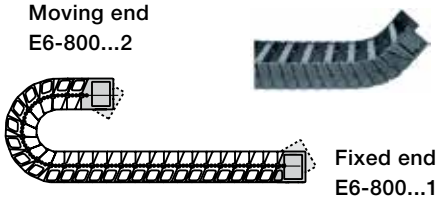
QuickSpec: http://www.igus.com/quickspec

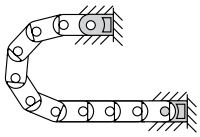
# E-Chain System® E6
# Series E6-80L
# Mounting Brackets - KMA

## Option 1: KMA - Pivoting

- Option - profile rail with integrated strain relief chainfix clip or tiewrap plates
- Profile rail can be mounted in the inner or outer radius of the E-Chain®
- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications
- Confined installation conditions
- Attachment capability on all sides

Moving end
E6-800...2

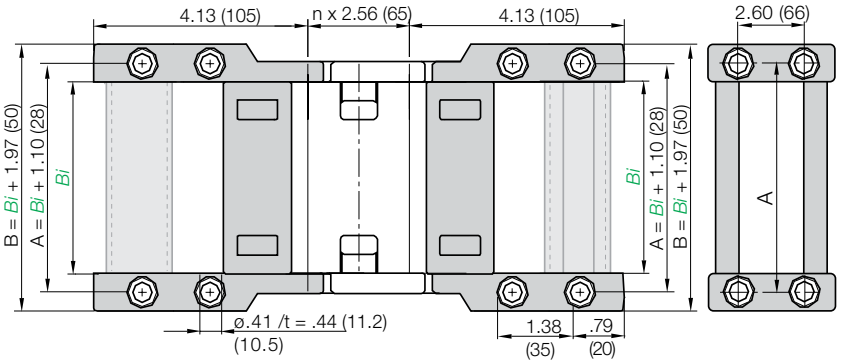




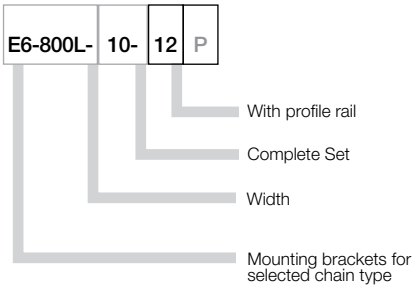
Possible installation configurations -

Fixed end
E6-800...1






### Part Number Structure




**Full set, for both ends:**
E6-800L- 10- 12 Full set,
**both fixed and moving end**
**Single-part order:**
E6-800L- 10- 1
Mounting bracket **fixed end**
E6-800L- 10- 2
Mounting bracket **moving end**

| For Series | Part No. Full Set W/O Profile Rail | Part No. Full Set With Profile Rail | *Bi* in. | *Bi* (mm) |
|---|---|---|---|---|
| E6-80L-08 | **E6-800L-08-12** | **E6-800L-08-12P** | 3.43 | (87) |
| E6-80L-10 | **E6-800L-10-12** | **E6-800L-10-12P** | 3.94 | (100) |
| E6-80L-11 | **E6-800L-11-12** | **E6-800L-11-12P** | 4.41 | (112) |
| E6-80L-12 | **E6-800L-12-12** | **E6-800L-12-12P** | 4.92 | (125) |
| E6-80L-13 | **E6-800L-13-12** | **E6-800L-13-12P** | 5.39 | (137) |
| E6-80L-15 | **E6-800L-15-12** | **E6-800L-15-12P** | 5.91 | (150) |
| E6-80L-16 | **E6-800L-16-12** | **E6-800L-16-12P** | 6.38 | (162) |
| E6-80L-17 | **E6-800L-18-12** | **E6-800L-18-12P** | 6.89 | (175) |
| E6-80L-18 | **E6-800L-18-12** | **E6-800L-18-12P** | 7.36 | (187) |
| E6-80L-20 | **E6-800L-20-12** | **E6-800L-20-12P** | 7.87 | (200) |
| E6-80L-21 | **E6-800L-21-12** | **E6-800L-21-12P** | 8.35 | (212) |
| E6-80L-22 | **E6-800L-23-12** | **E6-800L-23-12P** | 8.86 | (225) |
| E6-80L-23 | **E6-800L-23-12** | **E6-800L-23-12P** | 9.33 | (237) |
| E6-80L-25 | **E6-800L-25-12** | **E6-800L-25-12P** | 9.84 | (250) |
| E6-80L-26 | **E6-800L-26-12** | **E6-800L-26-12P** | 10.31 | (262) |
| E6-80L-27 | **E6-800L-28-12** | **E6-800L-28-12P** | 10.83 | (275) |
| E6-80L-28 | **E6-800L-29-12** | **E6-800L-29-12P** | 11.30 | (287) |
| E6-80L-30 | **E6-800L-30-12** | **E6-800L-30-12P** | 11.81 | (300) |
| E6-80L-31 | **E6-800L-31-12** | **E6-800L-31-12P** | 12.28 | (312) |

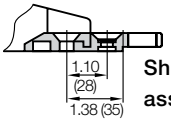
| For Series | Part No. Full Set W/O Profile Rail | Part No. Full Set With Profile Rail | *Bi* in. | *Bi* (mm) |
|---|---|---|---|---|
| E6-80L-32 | **E6-800L-32-12** | **E6-800L-32-12P** | 12.80 | (325) |
| E6-80L-33 | **E6-800L-33-12** | **E6-800L-33-12P** | 13.27 | (337) |
| E6-80L-35 | **E6-800L-35-12** | **E6-800L-35-12P** | 13.78 | (350) |
| E6-80L-36 | **E6-800L-36-12** | **E6-800L-36-12P** | 14.25 | (362) |
| E6-80L-37 | **E6-800L-37-12** | **E6-800L-37-12P** | 14.76 | (375) |
| E6-80L-38 | **E6-800L-38-12** | **E6-800L-38-12P** | 15.24 | (387) |
| E6-80L-40 | **E6-800L-40-12** | **E6-800L-40-12P** | 15.75 | (400) |
| E6-80L-41 | **E6-800L-41-12** | **E6-800L-41-12P** | 16.72 | (412) |
| E6-80L-42 | **E6-800L-42-12** | **E6-800L-42-12P** | 16.73 | (425) |
| E6-80L-43 | **E6-800L-43-12** | **E6-800L-43-12P** | 17.20 | (437) |
| E6-80L-45 | **E6-800L-45-12** | **E6-800L-45-12P** | 17.72 | (450) |
| E6-80L-46 | **E6-800L-46-12** | **E6-800L-46-12P** | 18.19 | (462) |
| E6-80L-47 | **E6-800L-47-12** | **E6-800L-47-12P** | 18.70 | (475) |
| E6-80L-48 | **E6-800L-48-12** | **E6-800L-48-12P** | 19.17 | (487) |
| E6-80L-50 | **E6-800L-50-12** | **E6-800L-50-12P** | 19.69 | (500) |
| E6-80L-51 | **E6-800L-51-12** | **E6-800L-51-12P** | 20.16 | (512) |
| E6-80L-52 | **E6-800L-52-12** | **E6-800L-52-12P** | 20.67 | (525) |
| E6-80L-53 | **E6-800L-53-12** | **E6-800L-53-12P** | 21.14 | (537) |
| E6-80L-55 | **E6-800L-55-12** | **E6-800L-55-12P** | 21.65 | (550) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

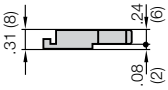
# E-Chain System® E6
# Series E6-80L
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap Plates




Shown assembled

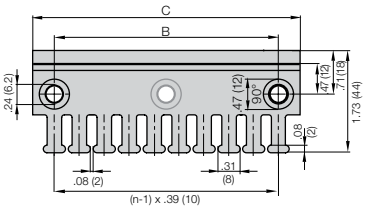



Single tiewrap plate

### Option 1:
### Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**Other strain relief elements**
➤ **Strain Relief, Chapter 10**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus®

# System E6-1

# More dynamics, smoother running, easier to open, 2nd generation

The E6-1 series is an advancement of the E6 series. While having all its advantages, like the stability and cleanroom suitability, it is even lighter, faster and quieter. In addition, its accessibility to the interior and the assembly and handling have been improved.

- Crossbars can be opened on both sides and removable along the inner and outer radius
- Option without camber NC by turning the inner link
- Extremely quiet through small pitch and brake in the stop-dog system
- Extremely low vibration
- Low-abrasion link system (no pin/hole connection)
- Virtually no polygon effect, thereby “smooth rolling” operation
- Faster lengthening and shortening through optimized connection design
- Smooth and obstacle free interior design for a long lifetime for cables and hoses
- Weight savings approx. 30% compared to the System E6
- Cost-effective

System E6-1 -
Extremely low noise

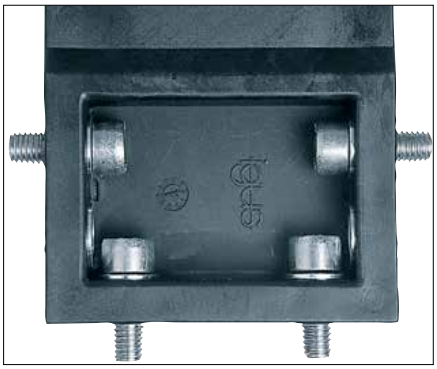
System E6 -
6-piece link-design

Clean-Room

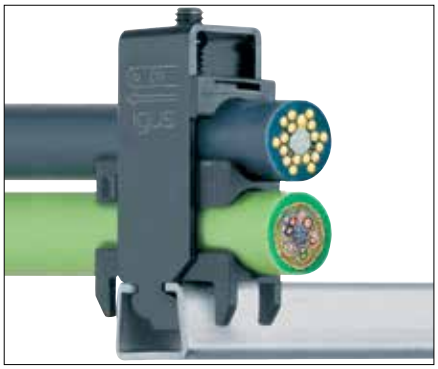
**IPA Qualification Certificate - Report IG 1303-640-1:**
ISO Class 1, according to DIN EN ISO 14644-1 for System E6-1, Series E61-29-50-075-0 and E61-29-50-075-0-CR
at v = 1.64 ft/s (0.5 m/s), 3.28 ft/s (1 m/s), 6.56 ft/s (2 m/s)

New generation interior separation - even more cable-friendly

Snap-open mechanism, Series E61-29 choice of snap-open on left or right



KMA mounting brackets with attachment options on all sides

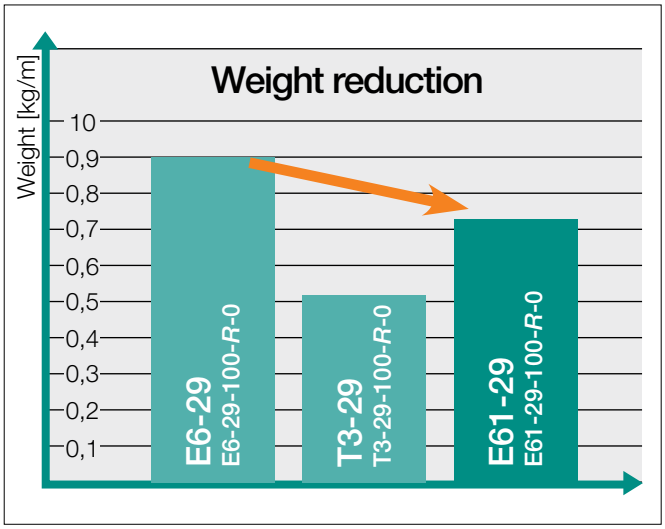


Strain relief clamps, tiewrap plates, nuggets and plug-in clips ▶**Section 10**

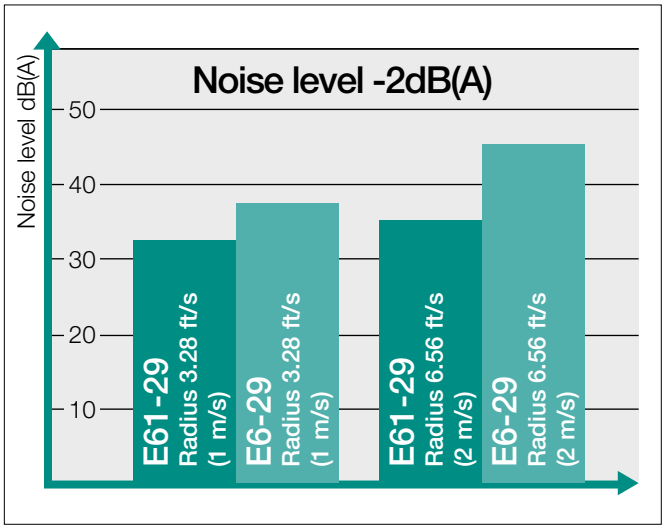
Pivoting and locking KMA mounting brackets are available

Support tray tool kit. For support of the lower run ▶**Section 9**

## System E6-1 internal tests in the igus® lab




The E6-1 generation can take up higher accelerations, due to a weight reduction, making it a highly dynamic yet still extremely quiet E-Chain®




Series E61-29 tests in the igus® test lab show noise levels, which are 2 dB(A) below the already class-leading noise-levels of the igus® E6-29 series

# E-Chain System® E6
# Series E61-29



## Price Index

Series E61-29

## Special Features / Options

Extremely low noise
Test results upon request

IPA Certificate: Class 1, according to standard DIN EN ISO 14644-1 for the E6 system
(Series E6-29-060-150-0-CR, (v = 1.64 ft/s, a = 3.28 ft/s²)

## Assembly Tips

snap-open mechanism

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 82 ft (25 m) |
| Vertical, standing ≤ 6.56 ft (2 m) |
| Side-mounted, unsupp. = possible to a limited extent |
| Unsupported length of upper run upon request |

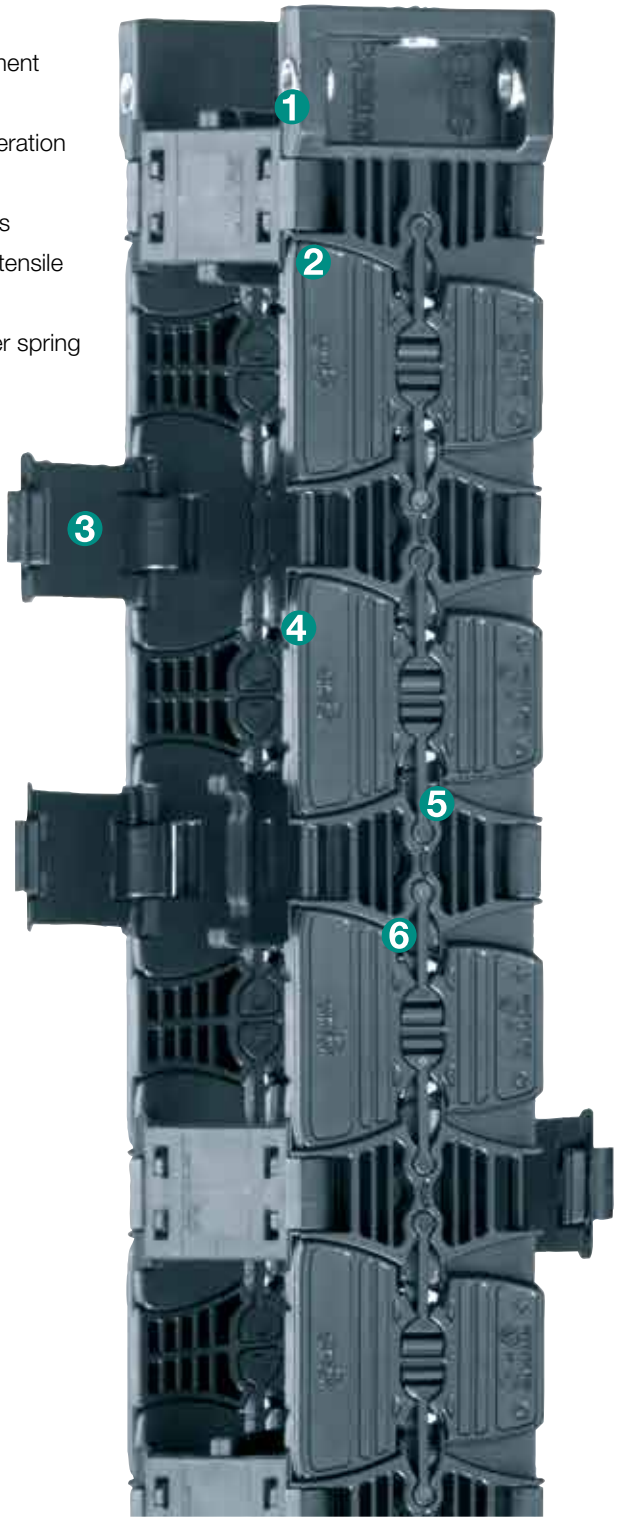
## Usage Guidelines

- If a low-noise version is required
- For very high speeds and/or accelerations
- If large stresses and thrust forces are present
- For small bending radii
- If less vibration is required
- Minimal abrasion, suitable for cleanrooms

- For side-mounted applications
  ➤ **Series 200/240/250 E2 Medium**
- For RBR (reverse bending radii)
  ➤ **Series 200/240/250 E2 Medium**
- For high additional loads
  ➤ **Series 200/240/250 E2 Medium**
- For very dirty environments
  ➤ **Series R6-29**

## Features & Benefits

1. KMA mounting brackets with attachment points on all sides
2. Small pitch for low-noise, smooth operation
3. Crossbars open on either side
4. For high speed and high accelerations
5. Minimum vibration, high stability and tensile strength
6. No pin and bore connection - polymer spring




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **E61-29-100-075-0** | **E-Chain®** |
| With 2 separators **29-1-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **E61-290-100-12** | **Mounting Bracket** |

# E-Chain System® E6
# Series E61-29
# Installation Dimensions

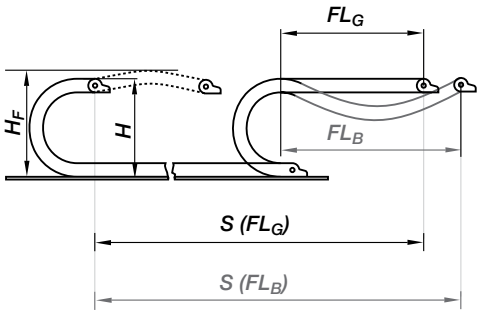


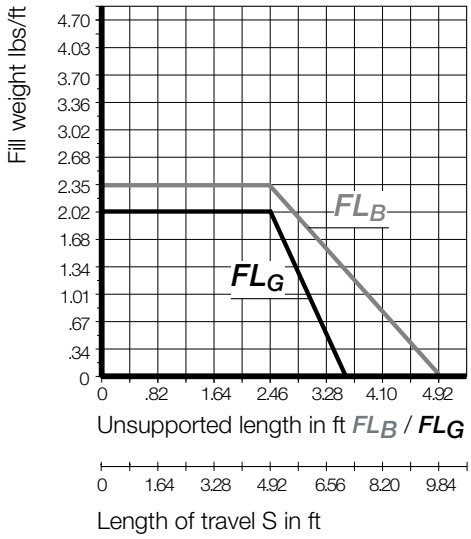
**Short travel, unsupported length**

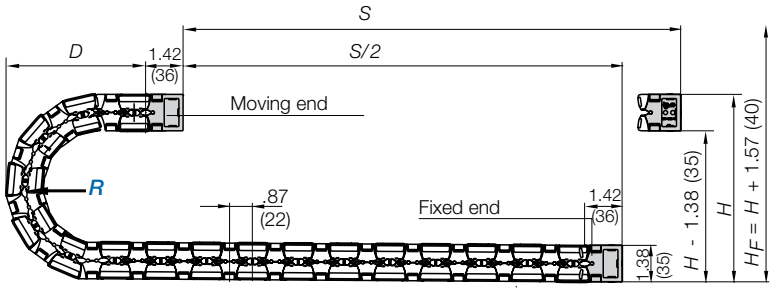
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1




**Pitch per link: =** .87" (22 mm)
**Links per ft (m): =** 13.79 (46)
**For center mount applications:**
**Chain length =** $_S/_2 + K$

The required clearance height: ***HF = H* + 1.57 in. (40 mm)** (with 1.34 lbs/ft (2.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) |
|---|---|---|---|---|---|
| H | 6.89 (175) | 8.46 (215) | 10.43 (265) | 12.40 (315) | 14.37 (365) |
| D | 4.15 (105.5) | 4.94 (125.5) | 5.93 (150.5) | 6.91 (175.5) | 7.89 (200.5) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 17.32 (440) | 20.47 (520) |

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

## Technical Data

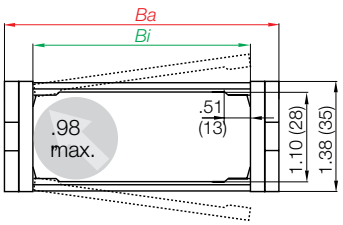
Details of material properties
➤ Design, Chapter 1

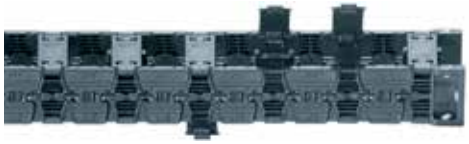
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E6
# Series E61-29

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series E61-29 - E-Chain® with crossbars every link removable along both radii

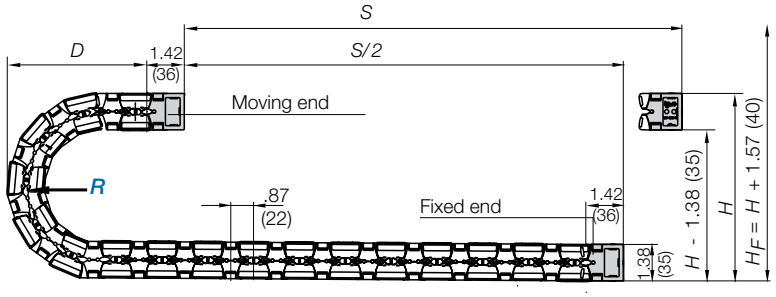


Part Number Structure

E61-29-100-100-0

- Color - Black
- Bending radius
- Width
- Series



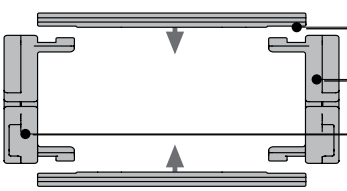

Supplement part number with required radius. Example: E61-29-100-[100]-0
Pitch: .87 in. (22 mm) per link links/ft (m) = 13.79 (46)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| E61-29-030-[ ]-0 | 1.18 (30) | 1.73 (44) | ≈ 0.37 (0.558) |
| E61-29-040-[ ]-0 | 1.57 (40) | 2.13 (54) | ≈ 0.39 (0.583) |
| E61-29-050-[ ]-0 | 1.97 (50) | 2.52 (64) | ≈ 0.41 (0.608) |
| E61-29-060-[ ]-0 | 2.36 (60) | 2.91 (74) | ≈ 0.43 (0.633) |
| E61-29-070-[ ]-0 | 2.76 (70) | 3.31 (84) | ≈ 0.44 (0.657) |
| E61-29-080-[ ]-0 | 3.15 (80) | 3.70 (94) | ≈ 0.46 (0.682) |
| E61-29-090-[ ]-0 | 3.54 (90) | 4.09 (104) | ≈ 0.48 (0.707) |
| E61-29-100-[ ]-0 | 3.94 (100) | 4.49 (114) | ≈ 0.49 (0.732) |
| E61-29-110-[ ]-0 | 4.33 (110) | 4.88 (124) | ≈ 0.51 (0.757) |
| E61-29-120-[ ]-0 | 4.72 (120) | 5.27 (134) | ≈ 0.53 (0.782) |
| E61-29-140-[ ]-0 | 5.51 (140) | 6.06 (154) | ≈ 0.54 (0.807) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E61-29-100-[100]-0

| | 055 | 075 | 100 | 125 | 150 |
|---|---|---|---|---|---|
| R | 2.17 (055) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) |
| H | 6.89 (175) | 8.46 (215) | 10.43 (265) | 12.40 (315) | 14.37 (365) |
| D | 4.15 (105.5) | 4.94 (125.5) | 5.93 (150.5) | 6.91 (175.5) | 7.89 (200.5) |
| K | 8.66 (220) | 11.02 (280) | 14.17 (360) | 17.32 (440) | 20.47 (520) |

## E-Chain® as separate parts, links and side plates



Single crossbar, E-Chain® - Part No. 2105-[Bi]

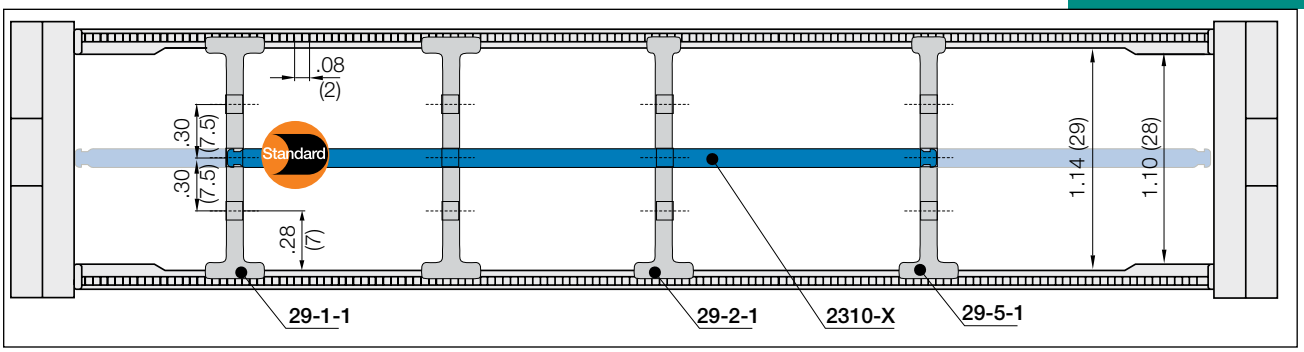
Radius side link*, single part - Part No. E61-29-01

Common side link*, single part - Part No. E61-29-02-[R]

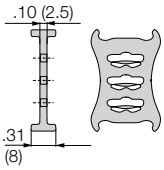
*View from the fixed point of the E-Chain®/E-Tube

Polymer spring as single part - Part No. E61-29-155

# E-Chain System® E6
# Series E61-29
# Interior Separation - New Generation



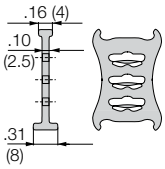

Note: Please maintain a lateral spacing of .51" (13 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 29-1** |
| Assembled | **Part No. 29-1-1** |

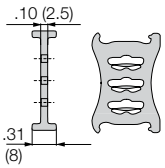
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 29-2** |
| Assembled | **Part No. 29-2-1** |

- **Separator 29-2**
  **For even faster installation**
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

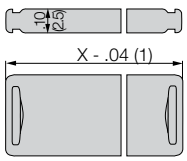



**Notch separator, for notch crossbar**

| | |
|---|---|
| Unassembled | **Part No. 29-5** |
| Assembled | **Part No. 29-5-1** |

- **Separator 29-5**
  **Locks safely in .08 (2 mm) increments**
  For exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-015** | **2310-015** | 2.36 (060) | **2300-060** | **2310-060** | 3.43 (087) | **2300-087** | **2310-087** |
| 0.98 (025) | **2300-025** | **2310-025** | 2.44 (062) | **2300-062** | **2310-062** | 3.54 (090) | **2300-090** | **2310-090** |
| 1.18 (030) | **2300-030** | **2310-030** | 2.56 (065) | **2300-065** | **2310-065** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-038** | **2310-038** | 2.76 (070) | **2300-070** | **2310-070** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-040** | **2310-040** | 2.95 (075) | **2300-075** | **2310-075** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-050** | **2310-050** | 3.03 (077) | **2300-077** | **2310-077** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-057** | **2310-057** | 3.15 (080) | **2300-080** | **2310-080** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. E6-29-02-Z** can be integrated into the mounting bracket and can be placed at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.
For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

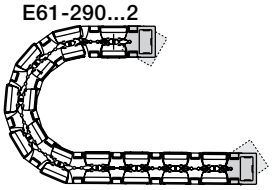
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain System® E6
# Series E61-29
# Mounting Brackets - KMA / Strain Relief

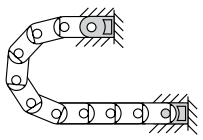
## KMA - Pivoting

- Bolted connection outside of the chain cross-section
- Recommended for unsupported applications (for gliding applications please contact igus®)
- Confined installation conditions
- Attachment capability on all sides

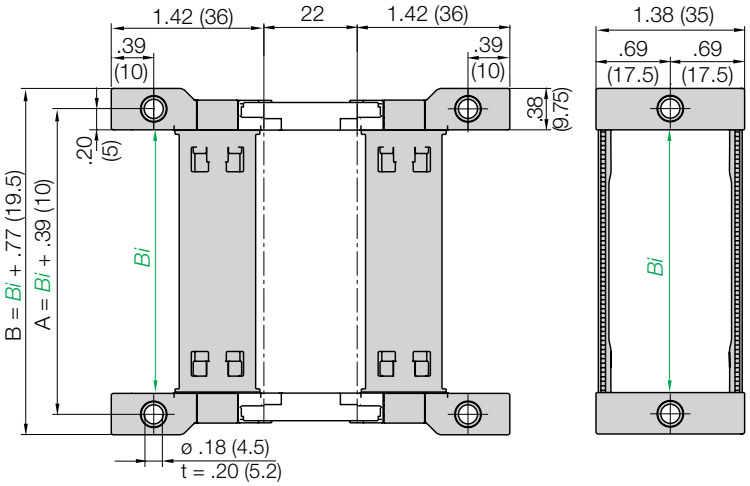
Moving end
E61-290...2



Fixed end
E61-290...1



Possible installation configurations -




**Part Number Structure**

| E61-290- | 030- | 12 |
|---|---|---|

- 12 — Complete Set
- 030- — Width
- E61-290- — Mounting brackets for selected chain type

**Full set, for both ends:**

E61-290- 030- 12 Full set, **both fixed and moving end**

**Single-part order:**

E61-290- 030- 1 Mounting bracket **fixed end**

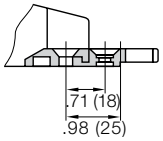
E61-290- 030- 2 Mounting bracket **moving end**

**Due to the design of the E6-1 mounting brackets, chain length must be an odd number of links.**

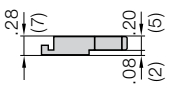
| For Series | Part No. Full Set | Dimension A in. | (mm) | Bi in. | (mm) |
|---|---|---|---|---|---|
| E61-29-030 | **E61-290-030-12** | 1.57 | (40) | 1.18 | (30) |
| E61-29-040 | **E61-290-040-12** | 1.97 | (50) | 1.57 | (40) |
| E61-29-050 | **E61-290-050-12** | 2.36 | (60) | 1.97 | (50) |
| E61-29-060 | **E61-290-060-12** | 2.76 | (70) | 2.36 | (60) |
| E61-29-070 | **E61-290-070-12** | 3.15 | (80) | 2.76 | (70) |
| E61-29-080 | **E61-290-080-12** | 3.54 | (90) | 3.15 | (80) |

| For Series | Part No. Full Set | Dimension A in. | (mm) | Bi in. | (mm) |
|---|---|---|---|---|---|
| E61-29-090 | **E61-290-090-12** | 3.94 | (100) | 3.54 | (90) |
| E61-29-100 | **E61-290-100-12** | 4.33 | (110) | 3.94 | (100) |
| E61-29-110 | **E61-290-110-12** | 4.72 | (120) | 4.33 | (110) |
| E61-29-120 | **E61-290-120-12** | 5.12 | (130) | 4.72 | (120) |
| E61-29-140 | **E61-290-140-12** | 5.91 | (150) | 5.51 | (140) |

## Tiewrap Plates



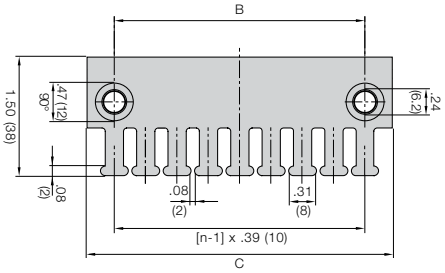

Shown assembled




Single tiewrap plate

### Tiewrap plates as an individual part

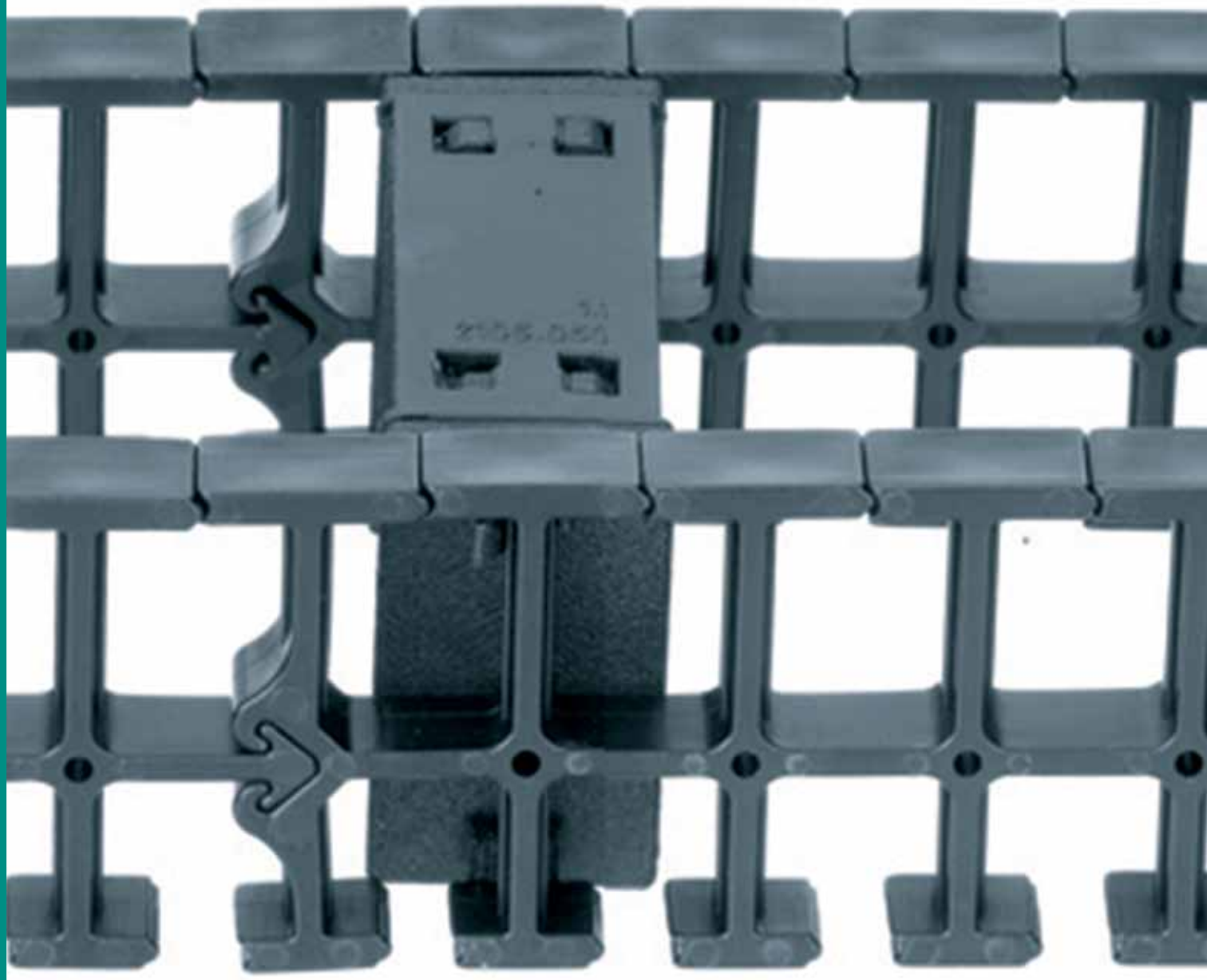
| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B |
|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) |
| **2120-ZB** | 12 | 4.72 (120) | 3.94 (100) |

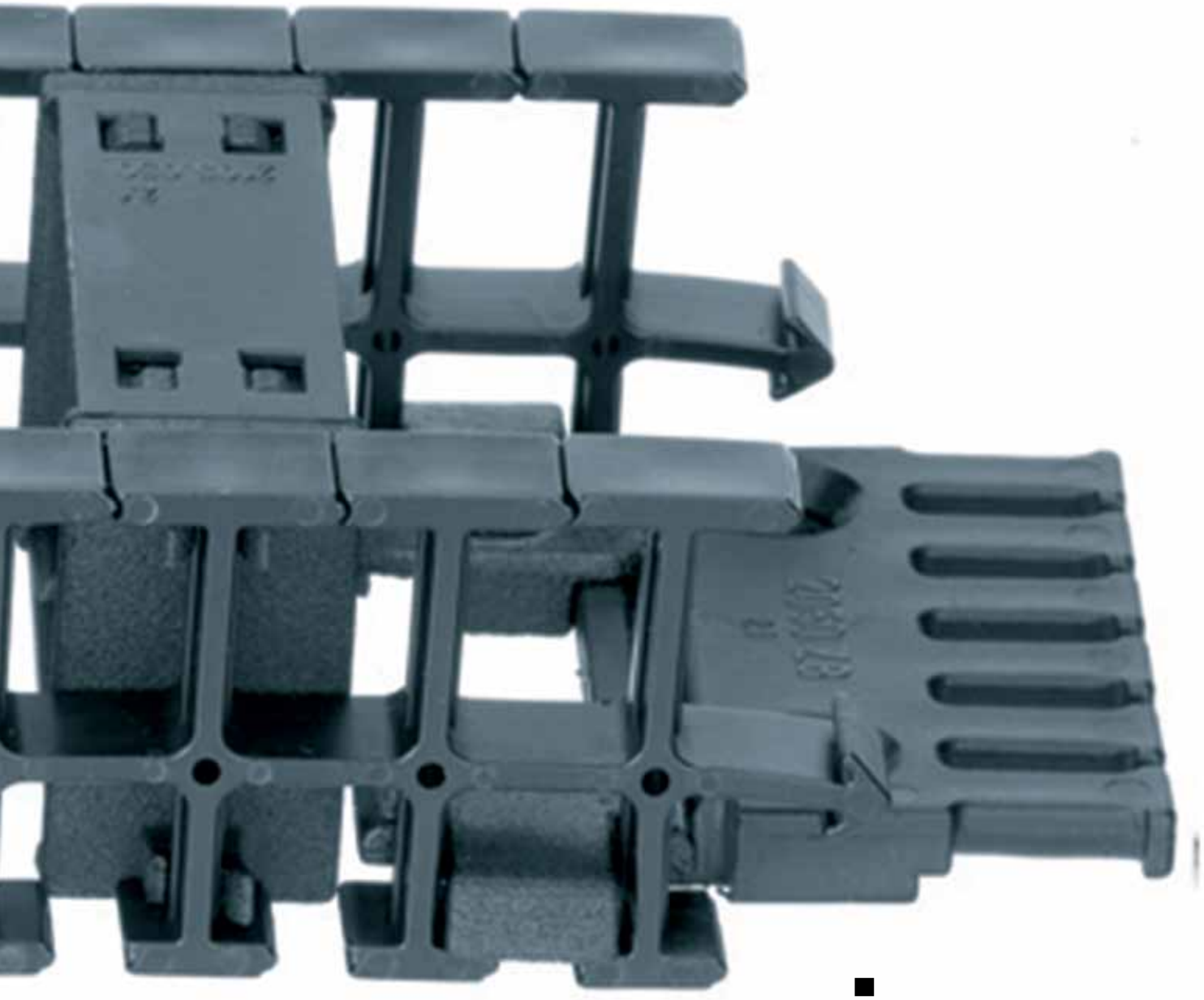



Other strain relief elements - optional

➤ Strain Relief, Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS





igus®

# System T3

## Highly flexible & low-vibration

# System T3 - Highly flexible, low vibration band chain

The T3-System combines low-noise operation, low sound level, simple installation and economy. The side plates that can be plugged into each other replace the conventional pin and bore connection and prevent relative movements between the joints, giving an almost complete freedom from wear. By the unique geometrical shape of the T-band, hardly any polygon effect is generated in operation. The T-band operates in a very smooth arc giving extremely low vibration and noise. In order to reduce the manufacturing and installation costs, the T-band is mounted in a length of 8 chain links. Due to its low mass, the igus® T-band, combined with high speeds and accelerations, is suitable for applications with low fill weights and short strokes.

**Typical industries and applications**

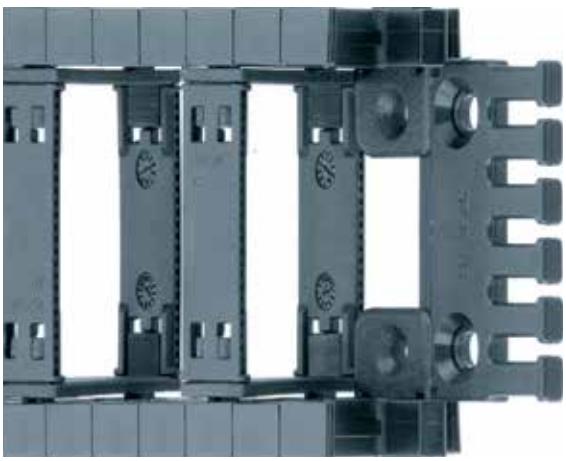
- Printer and plotter
- Cleanroom applications
- Production and processing of semiconductors
- Optics
- Automatic insertion machines
- Measuring technology

igus® tests at 3.28 ft (1 m) measuring distance: = 33 dB(A) for T3-29-050-038-0 at v = 3.28 ft/s (1 m/s and 26.5 dB(A) basic sound level

Clean-Room Cleanroom test upon request

T3 system on the Z-axis in the positioning system. It has very low vibration and is quiet.

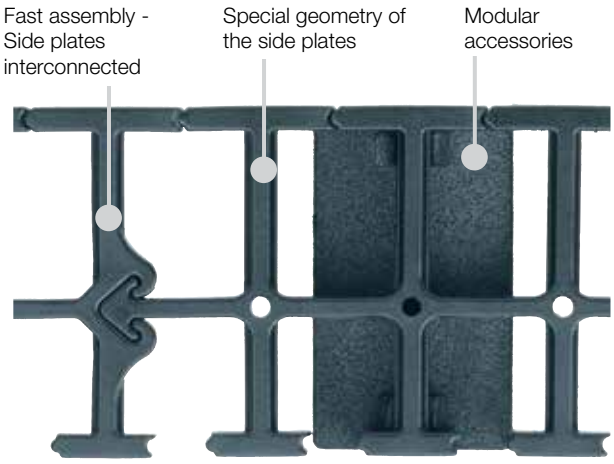
Testing facility at the igus® laboratory System T3 - ideal for high accelerations and short strokes



igus® System T3 T band chain - Inner height 1.14” (29 mm)

Next Page ➤ Find selection table and assembly instructions

# E-Chain System® T3
# Selection Guide




## T3: E-Chain® band for highly dynamic applications

In the development of the 3-piece, T-shaped band chain “T3”, the main focus was on minimum operational noise with lowest cost. This is achieved by the side-plate band consisting of 8 chain links in one piece, as well as the use of existing components of the popular E6 range. Due to the short pitch of the links, the curve section of the E-Chain remains fairly round. The omission of a pin and bore connection means the T3 band chain features extremely low abrasion and wear and hence is good for cleanroom applications.

- Extremely low noise and low vibration
- Low-priced E-Chain® for simple applications
- For high speeds and accelerations
- Very low weight
- Hardly any abrasion
- For short strokes
- Accessories: Separators, integrated strain relief, mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Section 1**

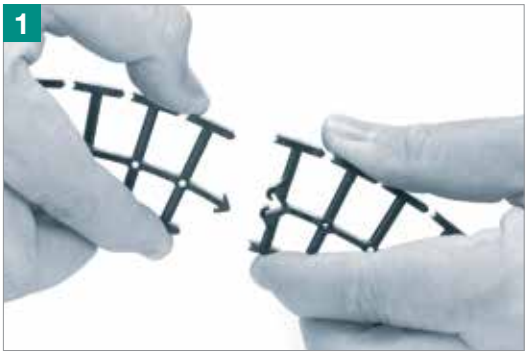
| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | |
|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | *in.* | (mm) |
| **T3-29** | 1.14 | (29) | 1.18-5.51 | (30-140) | 2.17-6.50 | (55-165) | 1.38 | (35) | 1.50 | (038) |

# E-Chain System® T3
# Assembly Instructions

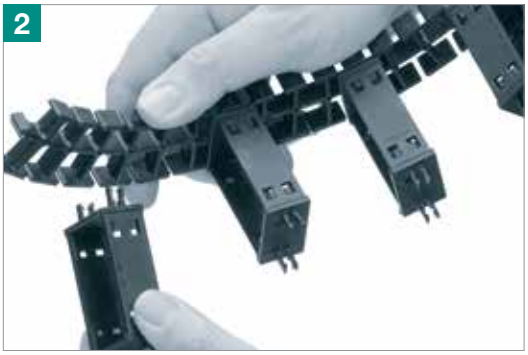
## System T3 - 3-piece E-Chain®

The abbreviation “T3” stands for a T-shaped E band, which consists of three basic elements:
❶ 2 side-plate bands (left/right) ❷ Separator element including separators

## System T3 - Assembling




Side plates to be plugged into each other

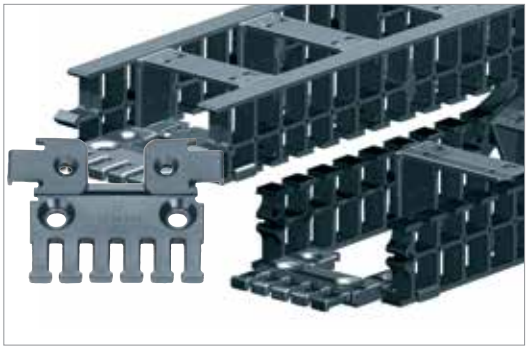



Clip-on “interior separation clips”

System T3 enables quick installation times. The side plates can be simply plugged in

## System T3 - Interior Separation and Strain Relief

Separators for dividing the chain cross section
from the proven and tested E6 range (E6-29)



Universal strain relief through optional mounting angle.
You can attach the E-Chain® at the fixed end, if necessary

# E-Chain System® T3
# Series T3-29



## Price Index

Series T3-29

## Special Features / Options

Extremely low noise
Test results upon request

Cleanroom test upon request

## Assembly Tips

Fast assembly due to side link strip

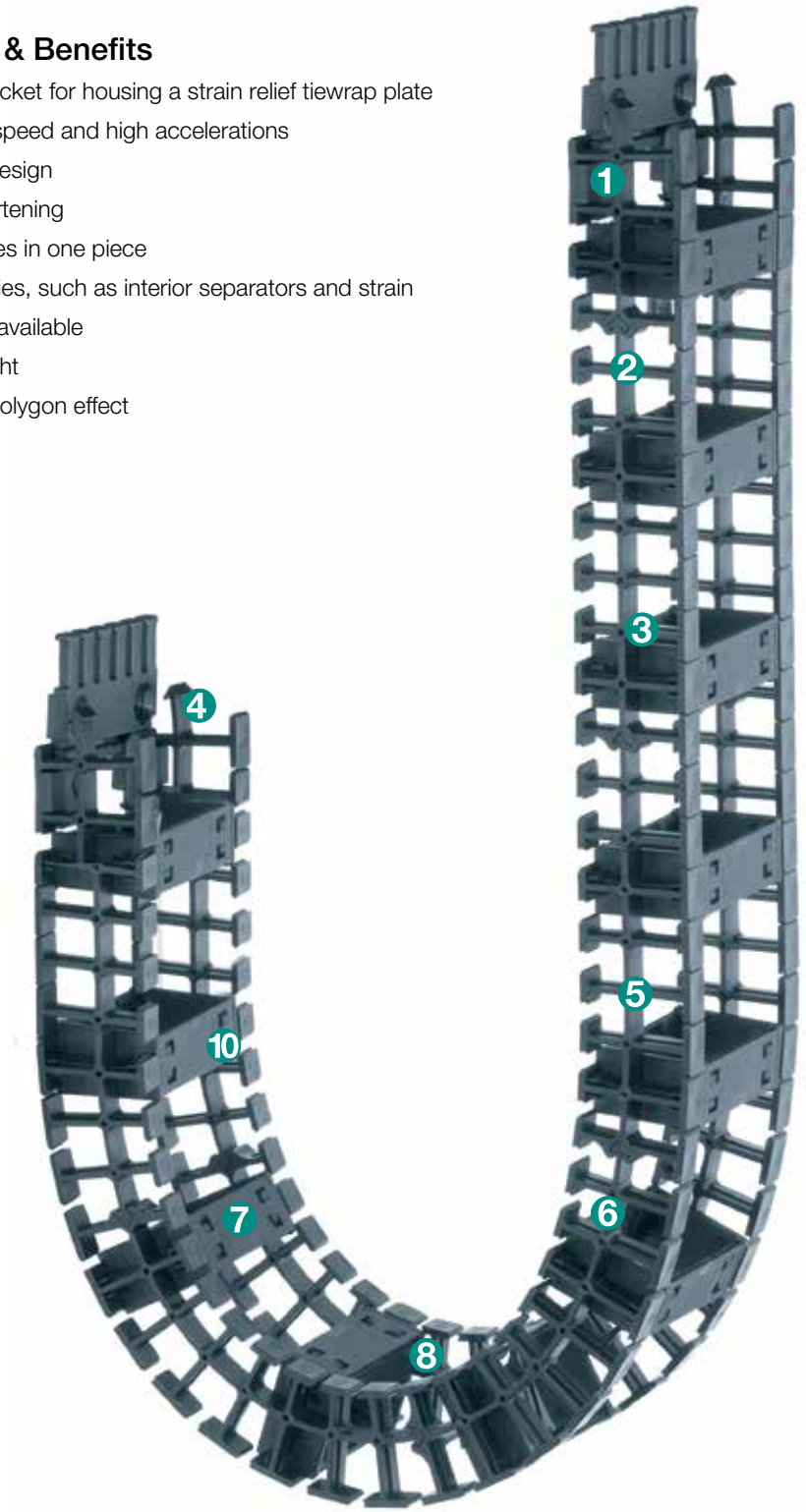
## Usage Guidelines

- At very high speeds and/or accelerations
- If a very light E-Chain® is required
- If a particularly low-cost E-Chain® is required
- For small bending radii and small spaces
- If easy filling and assembly is required
- Minimal abrasion (e.g. cleanroom applications)

- When an E-Chain® is required for more fill weight
  ➤ **Series E6-29**
- When an enclosed E-Chain® is required for low noise operation
  ➤ **Series R6-29**

## Features & Benefits

1. Angle bracket for housing a strain relief tiewrap plate
2. For high speed and high accelerations
3. 3-piece design
4. Easy shortening
5. Side plates in one piece
6. Accessories, such as interior separators and strain relief are available
7. Low weight
8. Minimal polygon effect




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 3.28 ft (1 m) **T3-29-050-038-0** | **E-Chain®** |
| With 2 separators **E6-29-11** assembled every 2nd link | **Interior Separation** |
| 1 Set **T3-29-050-12** | **Mounting Bracket** |

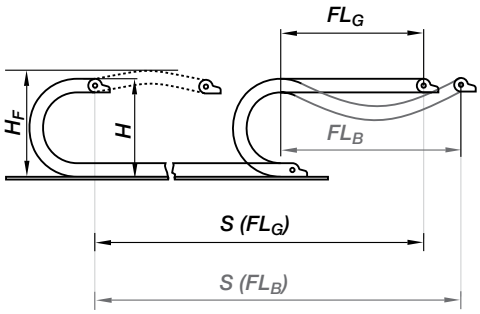
# E-Chain System® T3
# Series T3-29
# Installation Dimensions

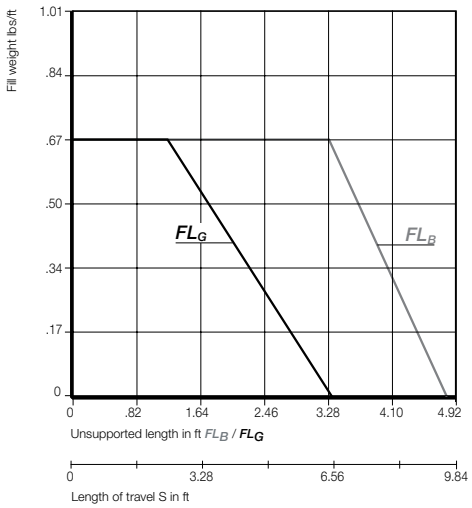
**Short travel, unsupported length**

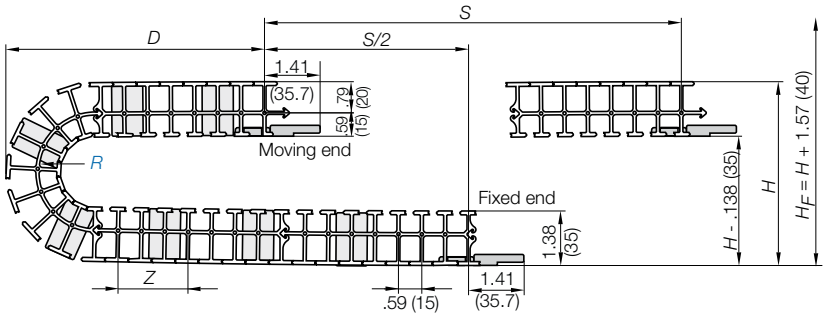
● $FL_B$ = unsupported with permitted sag

● $FL_G$ = unsupported with straight upper run

**Further information ➤ Design, Chapter 1**




The required clearance height: $H_F$ = ***H* + 1.57 in. (40 mm)** (with 0.67 lbs/ft (1.0 kg/m) fill weight.
Please consult igus® if space is particularly restricted.

| | |
|---|---|
| R | 1.50 (038) |
| H | 8.50 (216) |
| D | 4.57 (111) |
| K | 8.27 (210) |

**Pitch per link: =** .59" (15 mm)
**Links per ft (m): =** 20 (67)
**For center mount applications:**
**Chain length =** $_{-}^{S}/_{2}$ + K

## Short Travels - Unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation dimensions** for further details.

## Legend

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *safety buffer*
$H_F$ = Required clearance height

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 65.6 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | upon request |
| Permitted temperature | -40°F (-40°C) up to +158°F (+70° C) |
| Flammability Class | VDE 0304 IIC UL94 HB |

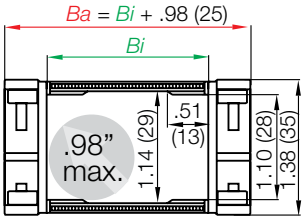
## Technical Data

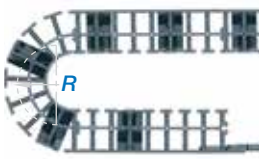
Details of material properties
**➤ Design, Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

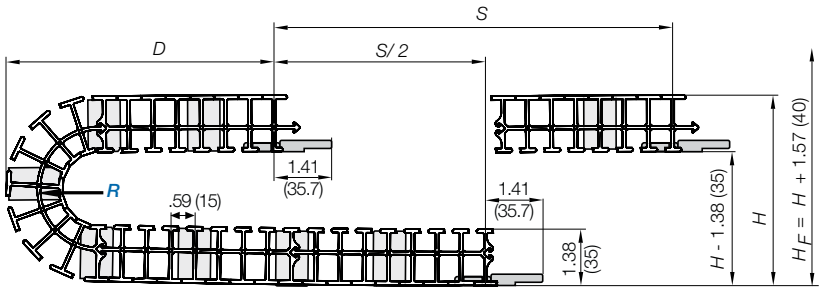
# E-Chain System® T3
# Series T3-29
# Installation Dimensions

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec




## Series T3-29 - E-Chain® with crossbars every other link




### Part Number Structure

T3-29-100-038-0

- Color - Black
- Bending radius
- Width
- Series

Supplement part number with required radius. Example: T3-29-100-038-0
Pitch: .59 in. (15 mm) per link links/ft (m) = 20 (67)

| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| T3-29-030-☐-0 | 1.18 (30) | 2.16 (55) | ≈ 0.27 (0.40) |
| T3-29-040-☐-0 | 1.57 (40) | 2.56 (65) | ≈ 0.28 (0.42) |
| T3-29-050-☐-0 | 1.97 (50) | 2.95 (75) | ≈ 0.30 (0.44) |
| T3-29-060-☐-0 | 2.36 (60) | 3.35 (85) | ≈ 0.31 (0.46) |
| T3-29-070-☐-0 | 2.76 (70) | 3.74 (95) | ≈ 0.32 (0.48) |
| T3-29-080-☐-0 | 3.15 (80) | 4.13 (105) | ≈ 0.34 (0.50) |
| T3-29-090-☐-0 | 3.54 (90) | 4.53 (115) | ≈ 0.34 (0.51) |
| T3-29-100-☐-0 | 3.94 (100) | 4.92 (125) | ≈ 0.36 (0.53) |
| T3-29-110-☐-0 | 4.33 (110) | 5.31 (135) | ≈ 0.37 (0.55) |
| T3-29-120-☐-0 | 4.72 (120) | 5.71 (145) | ≈ 0.38 (0.57) |
| T3-29-140-☐-0 | 5.51 (140) | 6.50 (165) | ≈ 0.40 (0.59) |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: T3-29-100-038-0

| 038 | |
|---|---|
| R | 1.50 (038) |
| H | 8.50 (216) |
| D | 4.57 (111) |
| K | 8.27 (210) |

### Interior separation elements

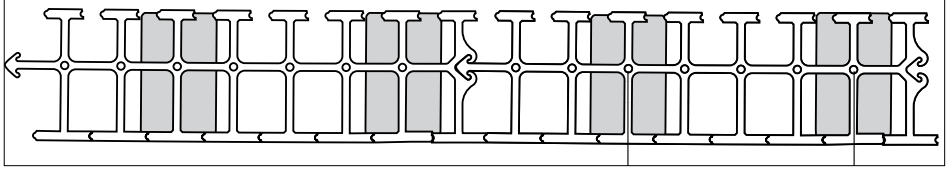
Distance "Z" for the interior separation elements of the T3 E-Chain®

Note: The first and last chain links should not have interior separation elements! As a standard, crossbars are mounted on every 4th chain link!

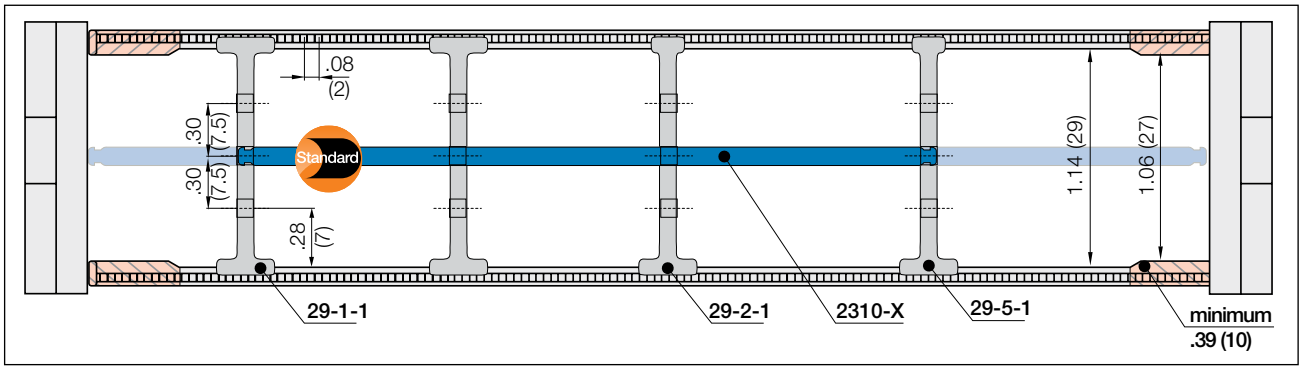
Part No. T3-29-100-038-0

For other distances, e.g. every 6th chain link, change the part number as follows:

Part No. T3-29-100-038-Z6-0

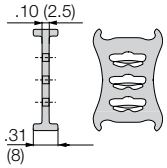


# E-Chain System® T3
# Series T3-29
# Interior Separation - New Generation




Note: Please maintain a lateral spacing of .39" (10 mm) between the separators and the side links.

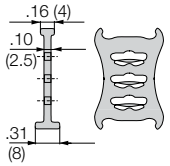
In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 29-1** |
| Assembled | **Part No. 29-1-1** |

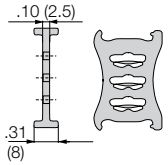
- **Standard separator 29-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 29-2** |
| Assembled | **Part No. 29-2-1** |

- **Separator 29-2**
  **For even faster installation**
  Firm hold to one side with a wide base, narrow on opposed side for easy cable assembly (slight grip)

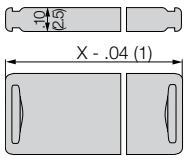



**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 29-5** |
| Assembled | **Part No. 29-5-1** |

- **Notch separator 29-5**
  Notch separator for exact positioning in E-Chains®. Recommended for side mounted applications

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 2300-X** |
| Assembled | **Part No. 2310-X** |

- **Full width shelf, lockable**
  Full-width shelf locks safely into the separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Shelves can be arranged at 3 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 0.59 (015) | **2300-015** | **2310-015** | 2.36 (060) | **2300-060** | **2310-060** | 3.43 (087) | **2300-807** | **2310-087** |
| 0.98 (025) | **2300-025** | **2310-025** | 2.44 (062) | **2300-062** | **2310-062** | 3.54 (090) | **2300-090** | **2310-090** |
| 1.18 (030) | **2300-030** | **2310-030** | 2.56 (065) | **2300-065** | **2310-065** | 3.94 (100) | **2300-100** | **2310-100** |
| 1.50 (038) | **2300-038** | **2310-038** | 2.76 (070) | **2300-070** | **2310-070** | 4.06 (103) | **2300-103** | **2310-103** |
| 1.57 (040) | **2300-040** | **2310-040** | 2.95 (075) | **2300-075** | **2310-075** | 4.33 (110) | **2300-110** | **2310-110** |
| 1.97 (050) | **2300-050** | **2310-050** | 3.03 (077) | **2300-077** | **2310-077** | 4.72 (120) | **2300-120** | **2310-120** |
| 2.24 (057) | **2300-057** | **2310-057** | 3.15 (080) | **2300-080** | **2310-080** | 4.92 (125) | **2300-125** | **2310-125** |

## Separator with integrated strain relief

**Strain relief separator Part No. E6-29-02-Z** can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation, it can be installed on the first or last E-Chain® link and is easy to assemble without any screws.

For more information ➤ **Chapter 10, Strain Relief**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

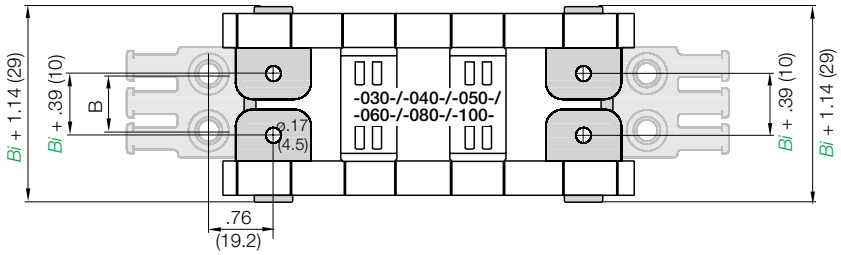
# E-Chain System® T3
# Series T3-29
# Mounting Angle

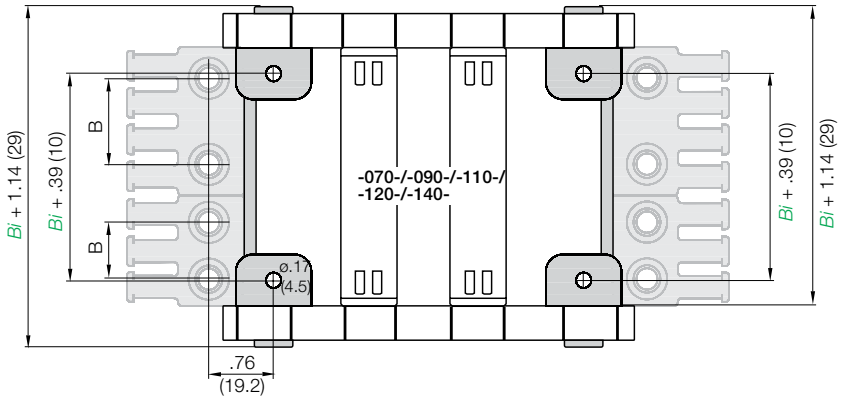
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

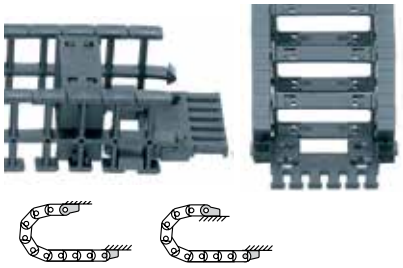


Moving end
T3-29...2

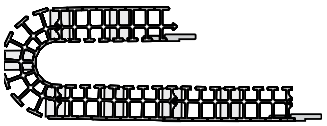
Fixed end
T3-29...1

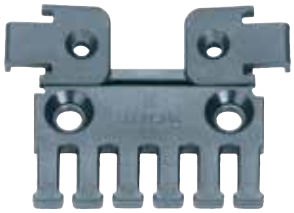


Possible installation configurations -



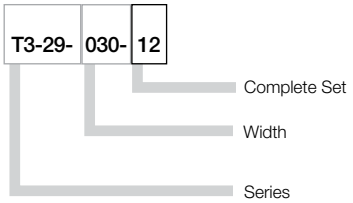


Mounting angle with strain relief

Mounting angle, single

| For Series | Part No. Full Set with tiewrap plate | Part No. Full Set without tiewrap plate | *Bi* in. (mm) | Dimension in. (mm) | Number of teeth |
|---|---|---|---|---|---|
| T3-29-030 | **T3-29-030-12PZ** | **T3-29-030-12** | 1.18 (30) | .59 (15) | 3 |
| T3-29-040 | **T3-29-040-12PZ** | **T3-29-040-12** | 1.57 (40) | .79 (20) | 4 |
| T3-29-050 | **T3-29-050-12PZ** | **T3-29-050-12** | 1.97 (50) | 1.18 (30) | 5 |
| T3-29-060 | **T3-29-060-12PZ** | **T3-29-060-12** | 2.36 (60) | 1.57 (40) | 6 |
| T3-29-070 | **T3-29-070-12PZ** | **T3-29-070-12** | 2.76 (70) | 1.38 (15+20) | 7 |
| T3-29-080 | **T3-29-080-12PZ** | **T3-29-080-12** | 3.15 (80) | 2.36 (60) | 8 |
| T3-29-090 | **T3-29-090-12PZ** | **T3-29-090-12** | 3.54 (90) | 1.97 (20+30) | 9 |
| T3-29-100 | **T3-29-100-12PZ** | **T3-29-100-12** | 3.94 (100) | 3.15 (80) | 10 |
| T3-29-110 | **T3-29-110-12PZ** | **T3-29-110-12** | 4.33 (110) | 2.75 (30+40) | 11 |
| T3-29-120 | **T3-29-120-12PZ** | **T3-29-120-12** | 4.72 (120) | 3.14 (40+40) | 12 |
| T3-29-140 | **T3-29-140-12PZ** | **T3-29-140-12** | 5.51(140) | 3.93 (60+40) | 14 |

**Part Number Structure**

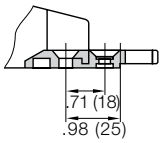



**Full set, for both ends:**
T3-29- 030- 12 Full set, **both fixed and moving end**

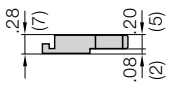
**Single-part order:**
T3-29 - 030- 1 Mounting bracket **fixed end**
T3-29 - 030- 2 Mounting bracket **moving end**

# E-Chain System® T3
# Series T3-29
# Strain Relief, Additional installation options

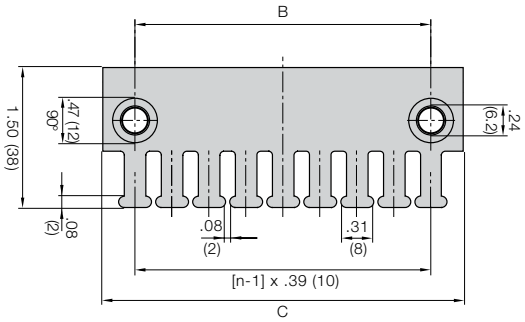
## Strain Relief




Shown assembled




Single tiewrap plate




### igus® chainfix tiewrap plate as individual part

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B | |
|---|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) | |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) | |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) | |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) | |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) | |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) | Use (2030-ZB + 2040-ZB) |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) | |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) | Use (2050-ZB + 2050-ZB) |

● Also available:
Separator with integrated strain relief for use in the first or last chain link
**(Part No. E6-29-02-Z)**
**➤ Strain Relief, Chapter 10**

### T3 E-Chains® and modules for circular movement

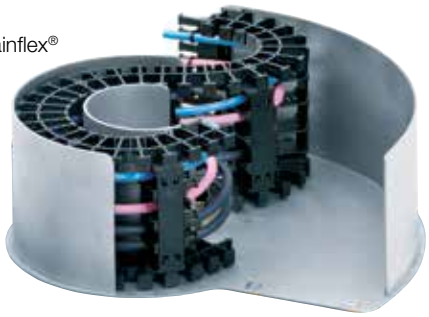
T3 E-Chains® for reverse bending radii (RBR)
**Part No. T3-29-050-38/55, T3-29-050-38-75, T3-29-050-38-100, T3-29-050-38-150**

- Several reverse bending radii available in 55, 75, 100, and 150
- Quiet
- Low wear
- Several mounting positions
- Complete line of interior separation for Series T3-29

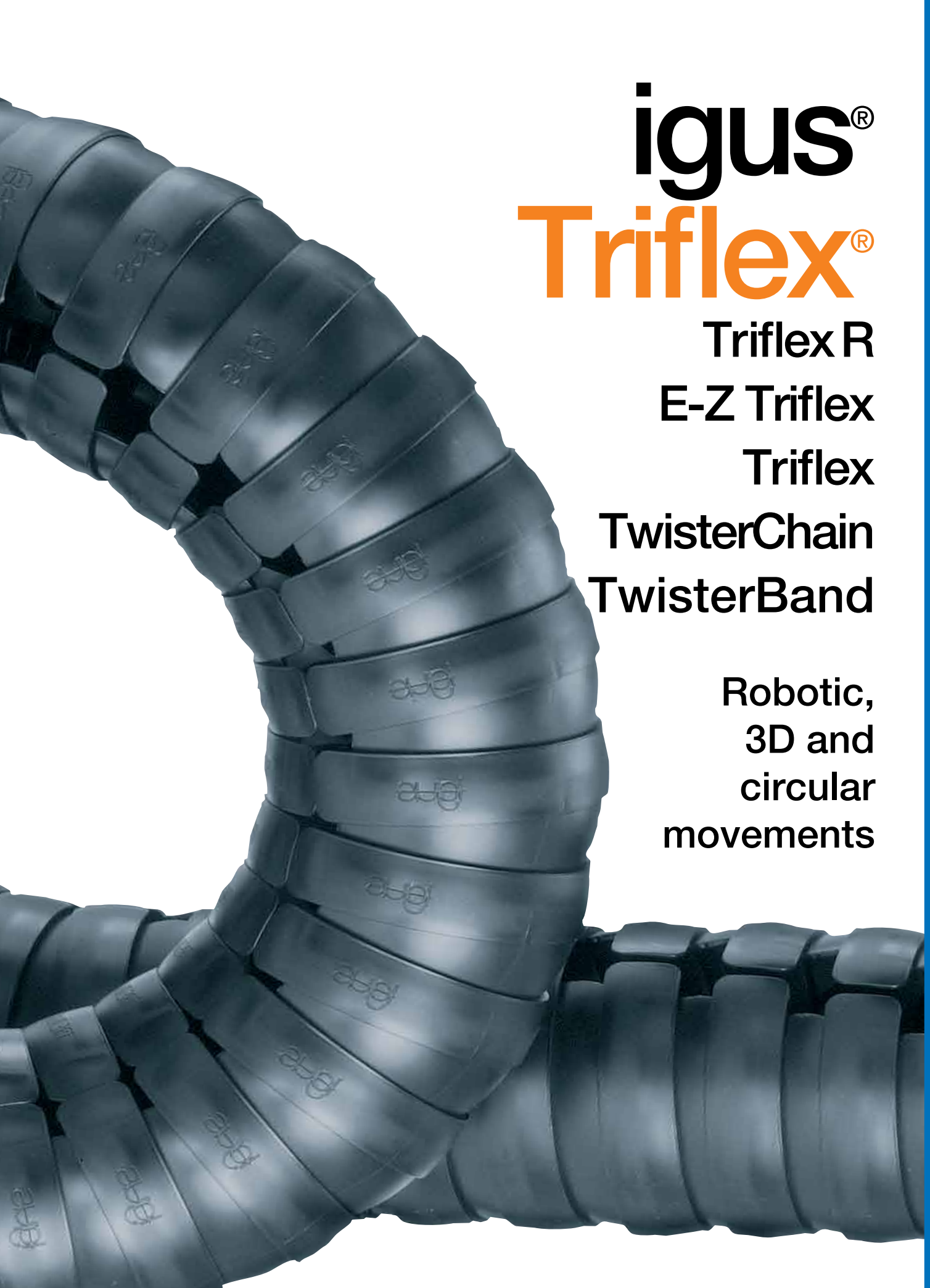
### T3 RBR modules for reverse bending radii

Consists of 4 elements: T3 RBR E-Chain®, guiding system, Chainflex® motion cables, iglide® PRT slewing ring bearing
**Part No. T3-29-070-038/055**

- Compact guiding module
- Able to turn in inner and outer radius
- For high speeds
- Quiet
- Compact dimensions
- Several mounting positions
- Delivery upon request



igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



# igus®
# Triflex®

## Triflex R
## E-Z Triflex
## Triflex
## TwisterChain
## TwisterBand

Robotic,
3D and
circular
movements

# E-Chain System®
# Triflex® R, E-Z Triflex® and Triflex®
# E-Chains® for robotic and 3D applications

## Triflex® R - 3D-robotic E-Chains®

- The first choice for multiaxis-robots
- **TRC version** - closed design with smooth and robust exterior
- **TRCF version** - closed design with snap-open mechanism
- **TRE version** - “easy” design, easy to fill from outside
- **TRL version** - light weight, cost-efficient and very easy to fill, for non robotic applications
- **TRLF version** - light weight, snap-open mechanism
- Torsion approximately ± 10° per link possible
- High torsional stability (TRC/TRE)
- Easy shortening and lengthening
- Small bending radius, small pitch

➤ **See page 8.5**

## E-Z Triflex® - easy filling

- Easy filling from two sides and complex movements
- For reparations or supplements of existing Triflex® Systems
- For simple robotic- and 3D-applications
- Fast cable assembly with “easy” design
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions possible
- Shortening and lengthening anywhere
- 3D E-Chain® for non robotic applications

➤ **See page 8.57**

## Triflex® - enclosed version

- 3-axis motions in machinery of all kinds (combined circle- and stroke-movements)
- Completely enclosed - protection against dirt and chips
- For simple 3D-applications
- High tensile strength
- Where rectangular shapes fit better
- Modular, robust
- Combinations of varying bending radii and moving axes possible
- 3D E-Chain® for non robotic applications
- Connecting, separating possible at every link

➤ **See page 8.69**

# E-Chain System®
# TwisterChain® New, TwisterChain® Classic and TwisterBand E-Chains® for Circular movements and rotary motions in a small space

## TwisterChain® New - new generation circular E-Chains®

We recommend for new constructions!

- Sturdier through intermediate link - heavier loads possible
- Rotary/Spiral movements up to 540°
- Highly dynamic and smoother running (with a new guide trough)
- Modular, variable width, height and radius
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius
- Rotary speeds up to 2 m/s and more

➤ **See page 8.83**

## TwisterChain® Classic - first generation

- For new constructions we recommend: TC32, TC42, TC56 ➤ **See page 8.131**
- Fast cable change
- Modular design - variable widths
- Crossbars can be opened on both sides
- For circular motions up to 540° (with special attachments)
- Variable interior separation
- Electrically conductive steel mounting brackets

➤ **See page 8.107**

## TwisterBand - rotary motions

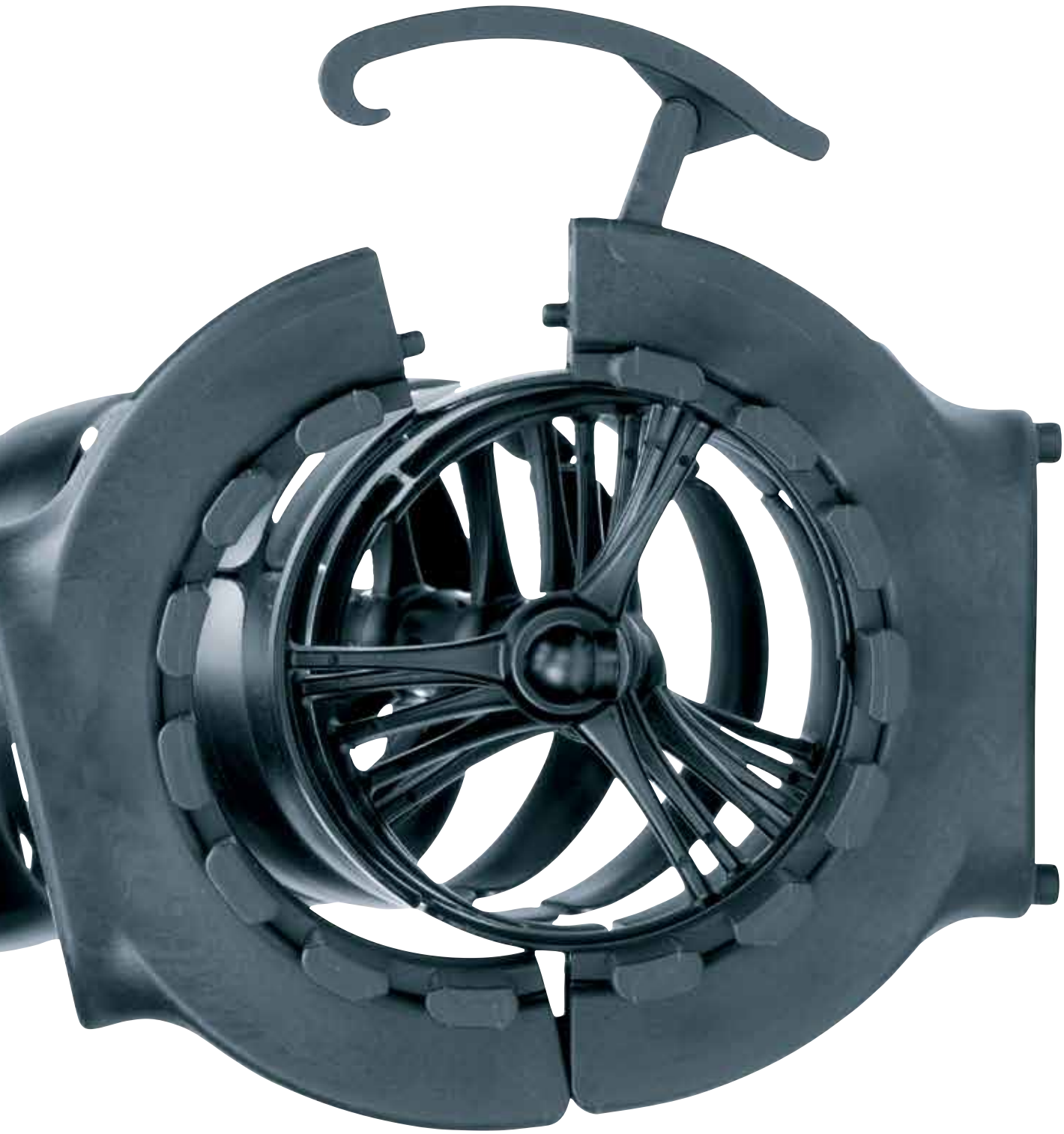
- Rotary motions in a small spaces
- 4 sizes available
- Rotary movements up to 7000°

  (Installation position, vertical: up to 3.000°, horizontal 7.000° and more possible)
- Rotary speeds up to 360°/s possible
- Compact, modular and lightweight
- Ribbons can be shortened easily
- Minimum installation space
- Can be used in various installation positions
- Cost-effective

➤ **See page 8.131**

igus®

# Triflex® R



# Triflex® R - multi-axis E-Chains® for robots

Triflex® R is the third generation of multi-axis E-Chains®. Design features include:

- Approximately ±10° twist per chain link
- High tensile strength of the ball-and-socket joint
- Easy assembly and modification due to single molded link design. No support elements (steel cables, spring suspensions etc.) are necessary
- Optional fiber rod for spring loading of the Triflex® R

The Triflex® R product family is available in 4 styles:

- TRC - closed design with a smooth and robust exterior
- TRCF - closed design with snap-open mechanism
- TRE - “easy” design, simply press the cables in
- TRL - lightweight, also features “easy design”
- TRLF - Light version with snap lock mechanism

**Typical industries and applications**

- Robotics/Automation
- Machine tools
- Handling machines - 6-axis
- Packaging machines
- General mechanical engineering, etc.

IF-Design awards for TRC, TRL and TRLF design

Series TRC - Electrically conductive ESD/ATEX version upon request

Cleanroom suitability upon request

UL94-V2 classification

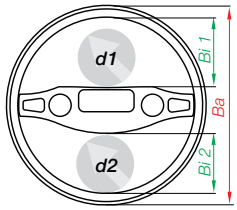
Triflex® TRLF - Lightweight version, easy to open by hand or with a screwdriver

Triflex® TRCF - Closed 3D E-Tube. Easy to open with a screwdriver

Triflex® RS - Universal modular retraction system

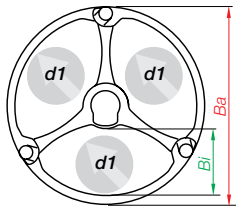
Triflex® RSP - pneumatic retraction system prevents loops from forming on the robot

# E-Chain System® - Series Triflex® R
# Selection Guide



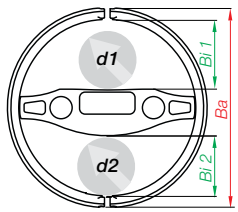
## "TRC" - Triflex® R closed design, dirt-resistant

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | | Pitch | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | Bi 2 | | d1 | | d2 | | Ba | | R | | | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRC-30 | .47 | (12) | .39 | (10) | .39 | (10) | .31 | (8) | 1.36 | (34.5) | 1.97 | (50) | .44 | (11.3) |
| TRC-40 | .59 | (15) | .51 | (13) | .51 | (13) | .43 | (11) | 1.69 | (43) | 2.28 | (58) | .55 | (13.9) |
| TRC-60 | .88 | (22.5) | .77 | (19.5) | .81 | (20.5) | .69 | (17.5) | 2.56 | (65) | 3.43 | (87) | .80 | (20.4) |
| TRC-70 | 1.10 | (28) | .94 | (24) | 1.02 | (26) | .87 | (22) | 3.19 | (81) | 4.33 | (110) | 1.01 | (25.6) |
| TRC-85 | 1.30 | (33) | 1.10 | (28) | 1.22 | (31) | 1.02 | (26) | 3.72 | (94.5) | 5.31 | (135) | 1.20 | (30.6) |
| TRC-100 | 1.48 | (37.5) | 1.28 | (32.5) | 1.40 | (35.5) | 1.20 | (30.5) | 4.25 | (108) | 5.71 | (145) | 1.36 | (34.5) |
| TRC-125** | 1.70 | (43.3) | 1.70 | (43.3) | 1.61 | (41) | 1.61 | (41) | 5.31 | (135) | 7.17 | (182) | 1.76 | (44.6) |



## "TRCF" - a light version with snap-open mechanism

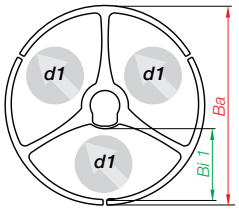
| Series | Inner height | | max. cable ø | | Outer width | | Bending radii | | Pitch | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | d1 | | Ba | | R | | | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRCF-85 | 1.18 | (30) | 1.10 | (28) | 3.72 | (94.5) | 5.31 | (135) | 1.20 | (30.6) |
| TRCF-100 | 1.35 | (34.3) | 1.27 | (32.3) | 4.25 | (108) | 5.71 | (145) | 1.35 | (34.4) |



## "TRE" - Triflex® R "E-Z" design for fast installation of cables

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | | Pitch | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | Bi 2 | | d1 | | d2 | | Ba | | R | | | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRE-30 | .47 | (12) | .39 | (10) | .39 | (10*) | .31 | (8*) | 1.36 | (34.5) | 1.97 | (50) | .44 | (11.3) |
| TRE-40 | .59 | (15) | .51 | (13) | .51 | (13*) | .43 | (11*) | 1.69 | (43) | 2.28 | (58) | .55 | (13.9) |
| TRE-60 | .88 | (22.5) | .77 | (19.5) | .81 | (20.5*) | .69 | (17.5*) | 2.56 | (65) | 3.43 | (87) | .80 | (20.4) |
| TRE-70 | 1.10 | (28) | .94 | (24) | 1.02 | (26*) | .87 | (22*) | 3.19 | (81) | 4.33 | (110) | 1.01 | (25.6) |
| TRE-85 | 1.30 | (33) | 1.10 | (28) | 1.22 | (31*) | 1.02 | (26*) | 3.72 | (94.5) | 5.31 | (135) | 1.20 | (30.6) |
| TRE-100 | 1.48 | (37.5) | 1.28 | (32.5) | 1.40 | (35.5*) | 1.20 | (30.5*) | 4.25 | (108) | 5.71 | (145) | 1.36 | (34.5) |
| TRE-125** | 1.70 | (43.3) | 1.70 | (43.3) | 1.61 | (41*) | 1.61 | (41*) | 5.31 | (135) | 7.17 | (182) | 1.76 | (44.6) |

# E-Chain System® - Series Triflex® R
# Selection Guide

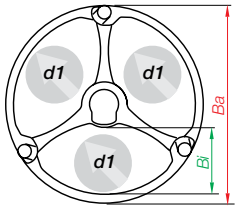


## "TRL" - a light and economical alternative with an "E-Z" design

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | | Pitch | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Bi 1* | | *Bi 2* | | *d1* | | *d2* | | *Ba* | | *R* | | | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRL-30 | .47 | (12) | .39 | (10) | .39 | (10*) | .31 | (8*) | 1.36 | (34.5) | 1.97 | (50) | .44 | (11.3) |
| TRL-40 | .59 | (15) | | – | .51 | (13*) | | – | 1.69 | (43) | 2.28 | (58) | .55 | (13.9) |
| TRL-60 | .91 | (23) | | – | .81 | (20.5*) | | – | 2.56 | (65) | 3.43 | (87) | .80 | (20.4) |
| TRL-70 | 1.10 | (28) | | – | 1.02 | (26*) | | – | 3.19 | (81) | 4.33 | (110) | 1.01 | (25.6) |
| TRL-100 | 1.50 | (38) | | – | 1.40 | (35.5*) | | – | 4.25 | (108) | 5.31 | (145) | 1.36 | (34.5) |

* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.

** If shortening/lengthening of a "filled" Triflex® TRC/TRE-125 is required, cable diameter changes to Ø 1.42" (36 mm).



## "TRLF" - a light version with snap-open mechanism

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | | Pitch | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *Bi 1* | | *Bi 2* | | *d1* | | *d2* | | *Ba* | | *R* | | | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRLF-65 | .96 | (24.4) | – | – | .87 | (22) | – | – | 2.76 | (70.2) | 3.94 | (100) | .91 | (23.1) |
| TRLF-85 | 1.29 | (32.8) | – | – | 1.18 | (30) | – | – | 3.72 | (94.5) | 5.31 | (135) | 1.20 | (30.6) |
| TRLF-100 | 1.48 | (37.5) | – | – | 1.40 | (35.5) | – | – | 4.25 | (108) | 5.71 | (145) | 1.35 | (34.4) |

for TRC·TRE

### RS - modular retraction system

for ø diameter index 40 to 100 mm

for TRC·TRE

### RSP pneumatic retraction system

for ø diameter index 60 to 125 mm

for TRC·TRE

### RSE - cost-effective retraction system for small-scale robotics

for ø diameter index 40 mm

## **Assembly** | TRC-30 · TRC-40 · TRC-60 · TRC-70 · TRC-85 · TRC-100

Hold two pieces together at inner radius and move socket up against the ball's wedged end

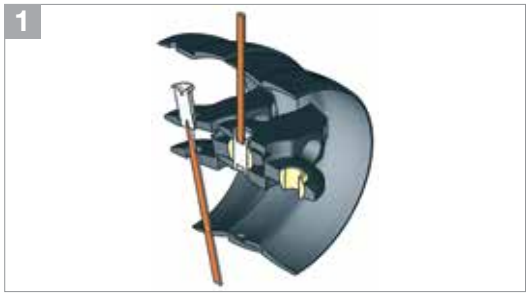
## **Separating** | TRC-30 · TRC-40 · TRC-60

Bend Triflex® R into its radius and twist apart, counter-clockwise

## **Separating** | TRC-70 · TRC-85 · TRC-100

Insert screwdriver into the opening of the socket from the top. Then twist apart, counter-clockwise

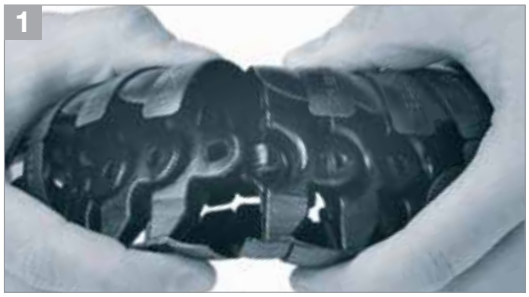
## **Assembly** | **Separating** | TRC-125

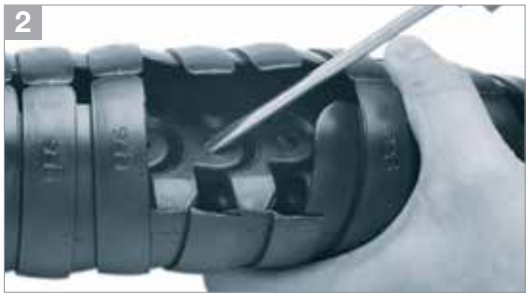


Connector design = Ball head clevis joint (similar to the proven trailer hitch design)
Improved assembly/disassembly for large sizes. Faster assembly with less effort

# E-Chain System® - Series Triflex® R
# Assembly Instructions - TRE Series

## **Assembly** | TRE-30 · TRE-40 · TRE-60 · TRE-70 · TRE-85 · TRE-100




Hold two pieces together at inner radius and move socket up against the ball's wedged end.
Push until a klicking sound indicates a secure fit of socket onto the ball (E-Chain® section exposed for the purpose of demonstration)

## **Separating** | TRE-30 · TRE-40 · TRE-60

Bend Triflex® R into its radius and twist apart, counter-clockwise

## **Separating** | TRE-70 · TRE-85 · TRE-100

Insert screwdriver into the opening of the socket from the top. Then twist apart, counter-clockwise

## **Filling** | TRE-30 · TRE-40 · TRE-60 · TRE-70 · TRE-85 ·TRE-100

Easy to fill - simply press cables in...

...and easy to take the cables out

## **Assembly** | TRL-30 · TRL-40 · TRL-60 · TRL-70 · TRL-100

igus® Triflex® R TRL - very easy to assemble - simply press the ball into the socket, ready!

## **Separating** | TRL-30 · TRL-40 · TRL-60 · TRL-70 · TRL-100

Just twist the ball slightly to remove it from its socket

## **Filling** | TRL-40 · TRL-30 · TRL-60 · TRL-70 · TRL-100

Easy to fill - simply press cables in...

...and easy to take the cables out

## **Installation** | Mounting bracket in this case, a “light” bracket with an intermediate connection

Easy assembly - open the mounting bracket, install the chain and snap the mounting bracket shut again.
To open, push a screwdriver against one side or manually pry apart

## **Assembly** | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

igus® Triflex® R TRLF - very easy to assemble - simply press the ball into the socket, ready!
TRLF shown

## **Separating** | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

Just twist the ball slightly to remove it from its socket
TRLF shown

## **Filling** | TRLF-65 · TRCF-85/TRLF-85 · TRCF-100/TRLF-100

Simply snap open the chain links and insert cables
TRLF shown

## **Installation** | Mounting bracket in this case, a “light” bracket with an intermediate connection

Easy assembly - open the mounting bracket, install the chain and snap the mounting bracket shut again.
To open, push a screwdriver against one side or manually pry apart

# E-Chain System® - Series Triflex® R TRC - Fully enclosed

.39"-1.70"

## Price Index

Series Triflex® TRC

## Special Options Available

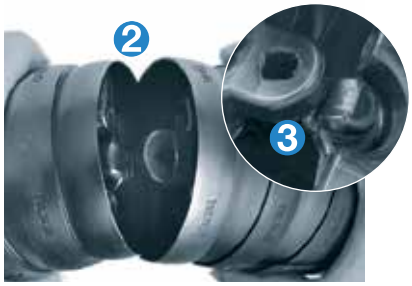
Cleanroom suitability upon request

iF-Design Award Winner Triflex® R Series

ESD classification: Electrically conductive ESD/ ATEX version upon request

Flammability Class VDE 0304 IIC UL94 V2

## Assembly Tips




Easy assembly and quick access to cables and hoses thanks to a unique ball-and-socket design.

## Features & Benefits

1. High stability - Due to outer stop dogs, defined stops for radius and torsion
2. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
3. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
4. Impact-resistant, dirt-repelling, rugged and abrasion-resistant, smooth, rounded exterior
5. Triflex® R-Set - compact module for all movements on robots, which can be fixed on existing fastening points
6. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
7. Small bend radius & short pitch - Space-saving installation
8. Easy attachment onto the robot/machine reduces setup time

## Usage Guidelines

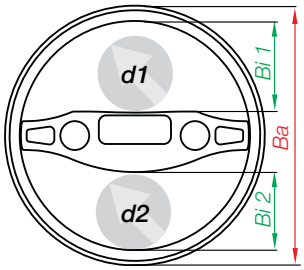
- If a secure cable guide is required for multi-dimensional (3D-) movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If a small bending radius is required
- If high tensile strength is important

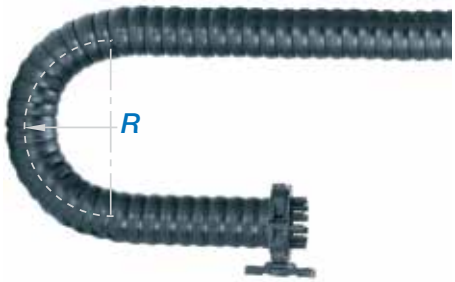
- For circular movements with high loads
  ➤ **TwisterChain System**
- If simple filling is required
  ➤ **Triflex® R, TRE**
- If a simpler and cost effective solution is required
  ➤ **Triflex® R, TRL**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 144 links**

| | |
|---|---|
| 6.56 ft (2 m) **TRC-40-058-0** | **E-Chain®** |
| 1 set mounting bracket with strain relief **TR-40-01** | **Mounting Bracket** |
| 2 intermediate links without strain relief **TR-40-02** | **Mounting Bracket** |
| +23.6" (600 mm) fiber rods **TRCF-40-0600-1** | **Fiber Rods** |



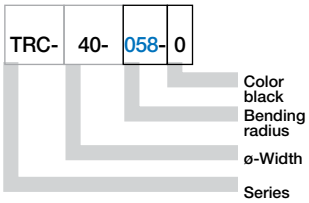

## "TRC" - Triflex® R closed design, dirt-resistant

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | Bi 2 | | d1 | | d2 | | Ba | | R | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRC-30-050-0 | .47 | (12) | .39 | (10) | .39 | (10) | .31 | (8) | 1.36 | (34.5) | 1.97 | (50) |
| TRC-40-058-0 | .59 | (15) | .51 | (13) | .51 | (13) | .43 | (11) | 1.69 | (43) | 2.28 | (58) |
| TRC-60-087-0 | .88 | (22.5) | .77 | (19.5) | .81 | (20.5) | .69 | (17.5) | 2.56 | (65) | 3.43 | (87) |
| TRC-70-110-0 | 1.10 | (28) | .94 | (24) | 1.02 | (26) | .87 | (22) | 3.19 | (81) | 4.33 | (110) |
| TRC-85-135-0 | 1.30 | (33) | 1.10 | (28) | 1.22 | (31) | 1.02 | (26) | 3.72 | (94.5) | 5.31 | (135) |
| TRC-100-145-0 | 1.48 | (37.5) | 1.28 | (32.5) | 1.40 | (35.5) | 1.20 | (30.5) | 4.25 | (108) | 5.71 | (145) |
| TRC-125-182-0** | 1.70 | (43.3) | 1.70 | (43.3) | 1.61 | (41) | 1.61 | (41) | 5.31 | (135) | 7.17 | (182) |

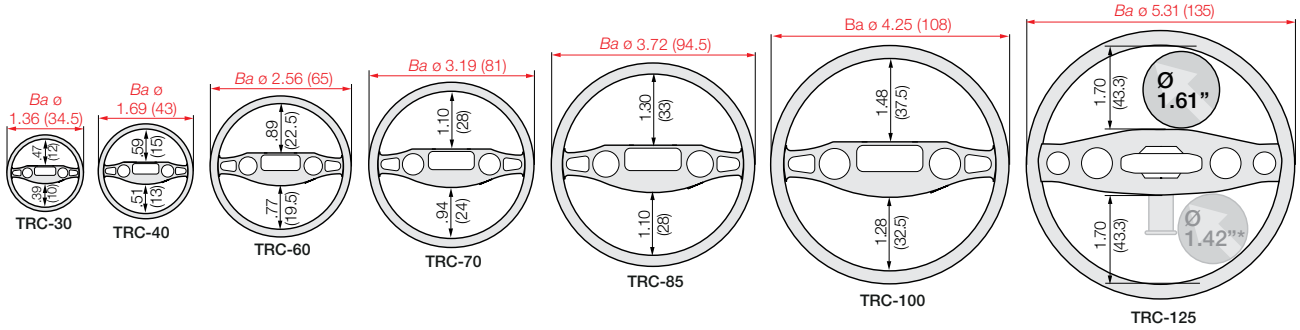
** If shortening/lengthening of a "filled" Triflex® TRC-125 is required, cable diameter changes to Ø 1.42" (36 mm).

| Part No. | Pitch | | Weight | | Links | |
|---|---|---|---|---|---|---|
| | in. | (mm) | lbs/ft | (kg/m) | links/ft | links/ m |
| TRC-30- | .44 | (11.3) | ≈ 0.18 | (≈ 0.27) | 27.27 | (89) |
| TRC-40- | .55 | (13.9) | ≈ 0.25 | (≈ 0.37) | 21.82 | (72) |
| TRC-60- | .80 | (20.4) | ≈ 0.57 | (≈ 0.85) | 15.00 | (49) |
| TRC-70- | 1.01 | (25.6) | ≈ 0.89 | (≈ 1.32) | 11.88 | (39) |
| TRC-85- | 1.20 | (30.6) | ≈ 1.18 | (≈ 1.75) | 10.00 | (33) |
| TRC-100- | 1.36 | (34.5) | ≈ 1.60 | (≈ 2.38) | 8.82 | (29) |
| TRC-125-** | 1.76 | (44.6) | ≈ 3.16 | (≈ 4.70) | 6.82 | (23) |

Part No. structure




## Series TRC - Dimensions




| | |
|---|---|
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

**Technical Data**

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# TRCF - Closed Design with snap lock mechanism

1.18" - 1.35"

## Price Index

Series Triflex® TRCF

## Special Options Available

Flammability Class
VDE 0304 IIC UL94 HB

## Features & Benefits

1. Triflex® TRCF - Closed design with snap lock mechanism
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Simply flip open for large stiff hose and/or many cables
4. Easy installation and dismantling
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link

## Assembly Tips

To close, push and click shut

## Usage Guidelines

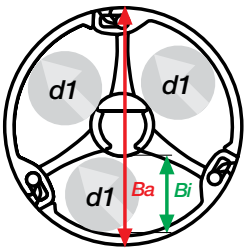
- If a secure energy supply system is required for multi-axial 3D movement
- When high torsion ability is required
- When easy shortening or lengthening is desired
- When a short bending radius is required
- When high tensile force absorption is important

- For circular movements with high loads
  ➤ **System TwisterChain®**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**
- When a cost-effective, less demanding 3D solution is required
  ➤ **Triflex® R - TRL**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

| | |
|---|---|
| 6.56 ft (2 m) **TRCF-100-135-0** | **E-Chain®** |
| 1 set mounting bracket with strain relief **TL-100-01** | **Mounting Bracket** |

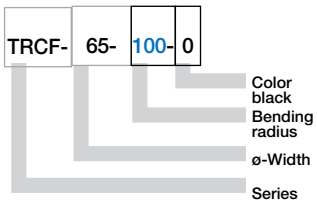


## "TRCF" - Closed design with snap lock mechanism

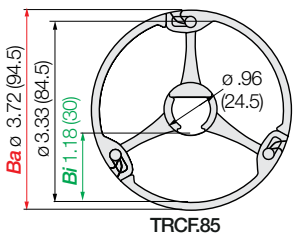
| Series | Inner height | | max. cable ø | | Outer width | | Bending radii | |
|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | d1 | | Ba | | R | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRCF-85-135-0 | 1.18 | (30) | 1.10 | (28) | 3.72 | (94.5) | 5.31 | (135) |
| TRCF-100-145-0 | 1.35 | (34.3) | 1.27 | (32.3) | 4.25 | (108) | 5.71 | (145) |

| Part No. | Pitch | | Weight | | Links | |
|---|---|---|---|---|---|---|
| | in. | (mm) | lbs/ft | (kg/m) | links/ft | links/ m |
| TRCF-85- | 1.20 | (30.6) | ≈ 1.41 | ≈ 2.10 | 10.0 | (33) |
| TRCF-100- | 1.36 | (34.5) | ≈ 1.81 | ≈ 2.70 | 8.8 | (29) |

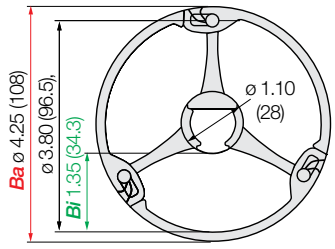
Part No. structure




## Series TRCF - Dimensions




TRCF.85




TRCF.100

Snap lock mechanism for quick filling

| | |
|---|---|
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R TRE - Easy to fill

.39"-1.70"

## Price Index

Series Triflex® TRE

## Special Options Available

Clean-Room — Cleanroom suitability upon request

Flammability Class VDE 0304 IIC UL94 V2

## Assembly Tips

Easy to fill - simply press cables in - "E-Z" Design

## Usage Guidelines

- When an easy to fill 3D E-Chain® is needed
- If a secure cable guide is required for multi-dimensional 3D-movements
- If high torsional stability is required
- If the system has to be shortened or lengthened easily
- If a small bending radius is required
- If hight ensile strength is important

- For circular movements with high loads
  ➤ **TwisterChain® System**
- If a fully enclosed solution is required
  ➤ **Triflex® R, TRC**
- If a more simple and cost effective solution is required
  ➤ **Triflex® R, TRL**

## Features & Benefits

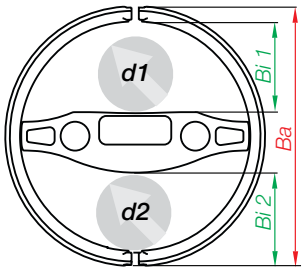
1. For special cases also available: Fiber rods, universal assembly kit and FlexBar
2. Impact-resistant, dirt-repelling, rugged and abrasion-resistant, smooth, rounded exterior
3. Easy opening mechanism for easy filling with cable and hose packages
4. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
5. Triflex® R-Set - compact module for all movements on robots, which can be fixed on existing fastening points
6. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
7. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
8. Small bend radius & short pitch - Space-saving installation
9. High stability - Due to outer stop dogs, defined stops for radius and torsion
10. Easy attachment onto the robot/machine reduces setup time

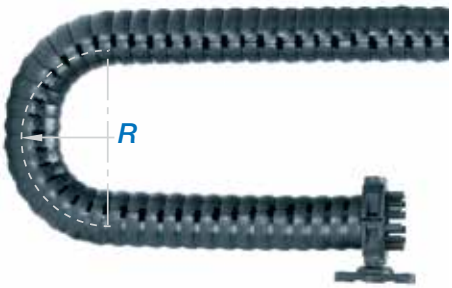
## Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 144 links**

| | |
|---|---|
| 6.56 ft (2 m) **TRE-40-058-0** | **E-Chain®** |
| 1 set mounting bracket with strain relief **TR-40-01** | **Mounting Bracket** |
| 2 intermediate links without strain relief **TR-40-02** | **Mounting Bracket** |
| +23.6" (600 mm) fiber rods **TREF-40-0600-1** | **Fiber Rods** |

# E-Chain System® - Series Triflex® R
# TRE - Easy to fill




## "TRE" - Triflex® R E-Z design, dirt-resistant

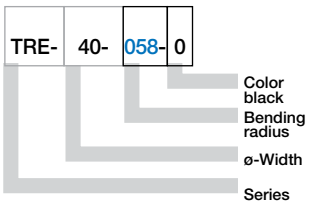
| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | Bi 2 | | d1 | | d2 | | Ba | | R | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRE-30-050-0 | .47 | (12) | .39 | (10) | .39 | (10*) | .31 | (8*) | 1.36 | (34.5) | 1.97 | (50) |
| TRE-40-058-0-B | .59 | (15) | .51 | (13) | .51 | (13*) | .43 | (11*) | 1.69 | (43) | 2.28 | (58) |
| TRE-60-087-0-B | .88 | (22.5) | .77 | (19.5) | .81 | (20.5*) | .69 | (17.5*) | 2.56 | (65) | 3.43 | (87) |
| TRE-70-110-0-B | 1.10 | (28) | .94 | (24) | 1.02 | (26*) | .87 | (22*) | 3.19 | (81) | 4.33 | (110) |
| TRE-85-135-0-B | 1.30 | (33) | 1.10 | (28) | 1.22 | (31*) | 1.02 | (26*) | 3.72 | (94.5) | 5.31 | (135) |
| TRE-100-145-0-B | 1.48 | (37.5) | 1.28 | (32.5) | 1.40 | (35.5*) | 1.20 | (30.5*) | 4.25 | (108) | 5.71 | (145) |
| TRE-125-182-0** | 1.70 | (43.3) | 1.70 | (43.3) | 1.61 | (41*) | 1.61 | (41*) | 5.31 | (135) | 7.17 | (182) |

* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.

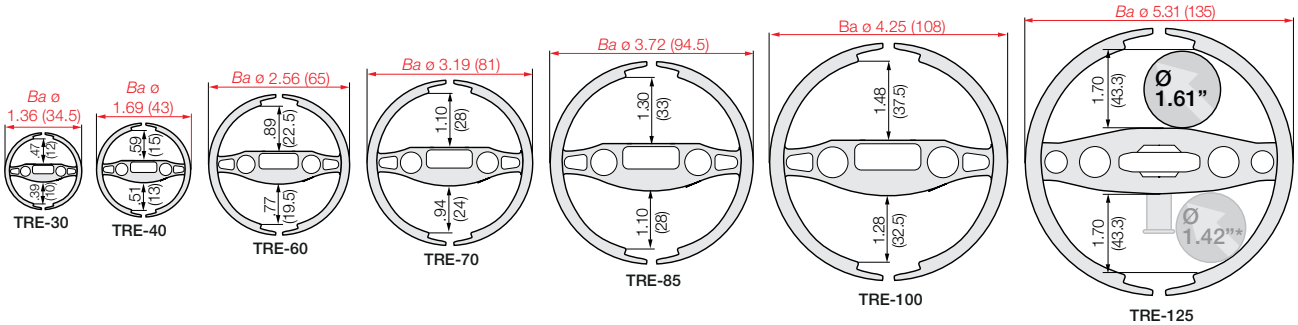
** If shortening/lengthening of a "filled" Triflex® TRE-125 is required, cable diameter changes to Ø 1.42" (36 mm).

| Part No. | Pitch | | Weight | | Links | |
|---|---|---|---|---|---|---|
| | in. | (mm) | lbs/ft | (kg/m) | links/ft | links/ m |
| TRE-30- | .44 | (11.3) | ≈ 0.18 | ≈ 0.27 | 27.27 | (89) |
| TRE-40- | .55 | (13.9) | ≈ 0.25 | ≈ 0.37 | 21.82 | (72) |
| TRE-60- | .80 | (20.4) | ≈ 0.57 | ≈ 0.85 | 15.00 | (49) |
| TRE-70- | 1.01 | (25.6) | ≈ 0.89 | ≈ 1.32 | 11.88 | (39) |
| TRE-85- | 1.20 | (30.6) | ≈ 1.18 | ≈ 1.75 | 10.00 | (33) |
| TRE-100- | 1.36 | (34.5) | ≈ 1.60 | ≈ 2.38 | 8.82 | (29) |
| TRE-125-** | 1.76 | (44.6) | ≈ 3.16 | ≈ 4.70 | 6.82 | (23) |

### Part No. structure




## Series TRE - Dimensions




| | |
|---|---|
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

**Technical Data**

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R TRL - Light and economical

.47"-1.50"

## Price Index

Series Triflex® TRC

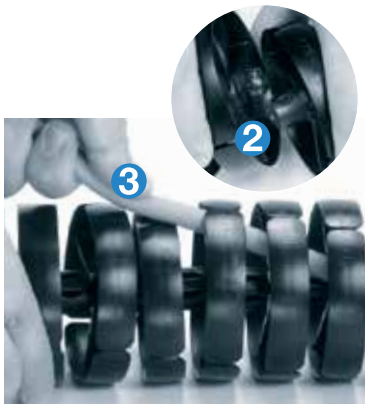
## Special Options Available

Cleanroom suitability upon request

iF-Design Award Winner Triflex® R Series

Flammability Class VDE 0304 IIC UL94 V2

## Assembly Tips




To close, push and click shut

## Usage Guidelines

- When an easy to fill, economical 3D E-Chain® is needed
- When 3D E-Chain® for easily manageable operating conditions is needed
- When a very easy to use 3D E-Chain® is needed

- For circular movements with high loads
  ➤ **System TwisterChain®**
- If a fully enclosed solution is required
  ➤ **Triflex® R - TRC**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**

## Features & Benefits

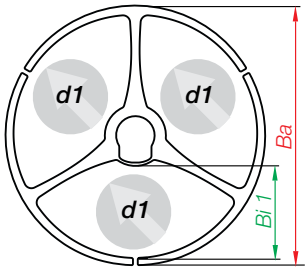
1. Triflex® R light - save twice on purchasing and installation, single-piece element, easy to fill using Easy Chain® design, matching Triflex® R standard mounting brackets
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Easy opening mechanism for easy filling with cable and hose packages
4. Easy installation and dismantling - An injection molded component. No other components (steel cables, spring suspensions etc.) are required
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link

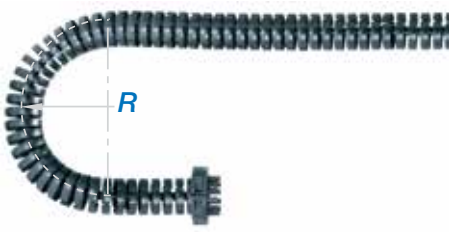
## Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

| | |
|---|---|
| 6.56 ft (2 m) **TRL-70-110-0** | **E-Chain®** |
| 1 set mounting bracket with strain relief **TL-70-01-Z1** | **Mounting Bracket** |

# E-Chain System® - Series Triflex® R
# TRL - Light and economical



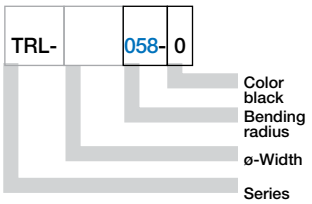

## "TRL" - a light and economical alternative with an "E-Z" design

| Series | Inner height | | | | max. cable ø | | | | Outer width | | Bending radii | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bi 1 | | Bi 2 | | d1 | | d2 | | Ba | | R | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRL-30-050-0 | .47 | (12) | .39 | (10) | .39 | (10*) | .31 | (8*) | 1.36 | (34.5) | 1.97 | (50) |
| TRL-40-058-0 | .59 | (15) | | – | .51 | (13*) | | – | 1.77 | (45) | 2.28 | (58) |
| TRL-60-087-0 | .91 | (23) | | – | .81 | (20.5*) | | – | 2.56 | (65) | 3.43 | (87) |
| TRL-70-110-0 | 1.10 | (28) | | – | 1.02 | (26*) | | – | 3.19 | (81) | 4.33 | (110) |
| TRL-100-145-0 | 1.50 | (38) | | – | 1.40 | (35.5*) | | – | 4.25 | (108) | 5.71 | (145) |

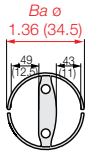
* For quick and easy insertion / removal of cables using the E-Z Chain® design, we recommend a maximum cable diameter of 70% of the specified value.

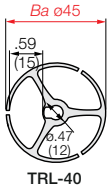
| Part No. | Pitch | | Weight | | Links | |
|---|---|---|---|---|---|---|
| | in. | (mm) | lbs/ft | (kg/m) | links/ft | links/ m |
| TRL-30- | .44 | (11.3) | ≈ 0.18 | ≈ 0.27 | 27.27 | (89) |
| TRL-40- | .55 | (13.9) | ≈ 0.25 | ≈ 0.37 | 21.82 | (72) |
| TRL-60- | .80 | (20.4) | ≈ 0.57 | ≈ 0.85 | 15.00 | (49) |
| TRL-70- | 1.01 | (25.6) | ≈ 0.89 | ≈ 1.32 | 11.88 | (39) |
| TRL-100- | 1.36 | (34.5) | ≈ 1.60 | ≈ 2.38 | 8.82 | (29) |

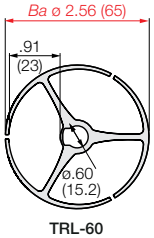
### Part No. structure

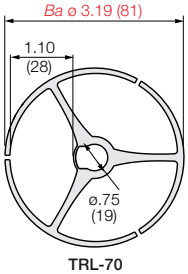


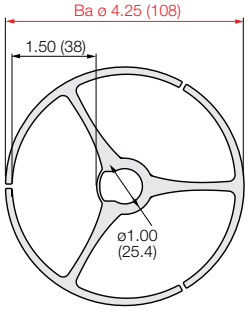

## Series TRL - Dimensions




| | |
|---|---|
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

**Technical Data**

Details of material properties
➤ Chapter 1

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# TRLF - Light with snap lock mechanism

.96" - 1.48"

## Price Index

Series Triflex® TRLF

## Special Options Available

iF-Design Award Winner
Triflex® TRLF Series

Flammability Class
VDE 0304 IIC UL94 HB

## Features & Benefits

1. Triflex® TRLF - light and cost-effective with snap lock mechanism
2. High tensile strength due to special ball-and-socket design, enables flexible movement along all axes
3. Simply flip open for large stiff hose and/or many cables
4. Easy installation and dismantling
5. Able to move multi-dimensionally - High degree of flexibility, even on the 6th axis. Twist up to approx. ± 10° per link possible in longitudinal axis. This assists guiding the cables and lines around difficult configurations
6. Small bend radius & short pitch - Space-saving installation
7. Economical and light mounting bracket with strain relief or intermediate link

## Assembly Tips

To close, push and click shut

## Usage Guidelines

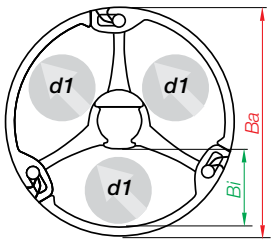
- When easy snap-open by hand or with a screwdriver is desired
- For thick rigid hoses and/or many cables
- When the system needs to be easy to lengthen or shorten
- When easy filling and replacement of pre-harnessed cables or media hoses is important

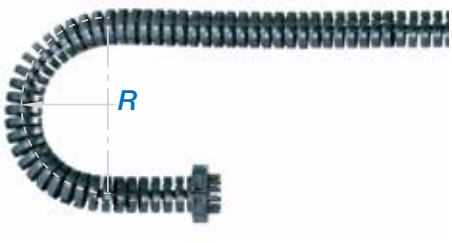
- For circular movements with high loads
  ➤ **System TwisterChain®**
- If a fully enclosed solution is required
  ➤ **Triflex® R - TRC**
- When a rugged, easy to fill variant is needed
  ➤ **Triflex® R - TRE**
- When a cost-effective, less demanding 3D solution is required
  ➤ **Triflex® R - TRL**

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. **Example: 6.56 ft (2m) or 78 links**

| | |
|---|---|
| 6.56 ft (2 m) **TRLF-85-135-0** | **E-Chain®** |
| 1 set mounting bracket with strain relief **TL-85-01** | **Mounting Bracket** |



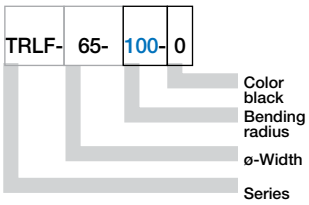




## "TRLF" - a light version with snap lock mechanism

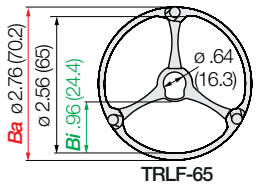
| Series | Inner height | | max. cable ø | | Outer width | | Bending radii | |
|---|---|---|---|---|---|---|---|---|
| | *Bi 1* | | *d1* | | *Ba* | | *R* | |
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| TRLF-65-100-0 | .96 | (24.4) | .87 | (22) | 2.76 | (70.2) | 3.94 | (100) |
| TRLF-85-135-0 | 1.29 | (32.8) | 1.18 | (30) | 3.72 | (94.5) | 5.31 | (135) |
| TRLF-100-145-0 | 1.48 | (37.5) | 1.40 | (35.5) | 4.25 | (108) | 5.71 | (145) |

| Part No. | Pitch | | Weight | | Links | |
|---|---|---|---|---|---|---|
| | in. | (mm) | lbs/ft | (kg/m) | links/ft | links/ m |
| TRLF-65- | .91 | (23.1) | ≈ 0.53 | ≈ 0.79 | 13.2 | (44) |
| TRLF-85- | 1.20 | (30.6) | ≈ 0.97 | ≈ 1.45 | 10.0 | (33) |
| TRLF-100- | 1.36 | (34.5) | ≈ 1.28 | ≈ 1.90 | 8.8 | (29) |

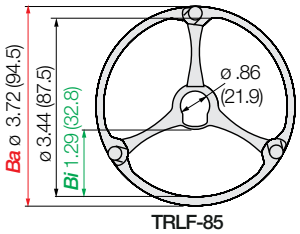
Part No. structure



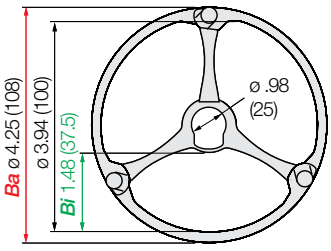

## Series TRL - Dimensions



TRLF-65



TRLF-85



TRLF-100

Snap lock mechanism for quick filling

| | |
|---|---|
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ Chapter 1

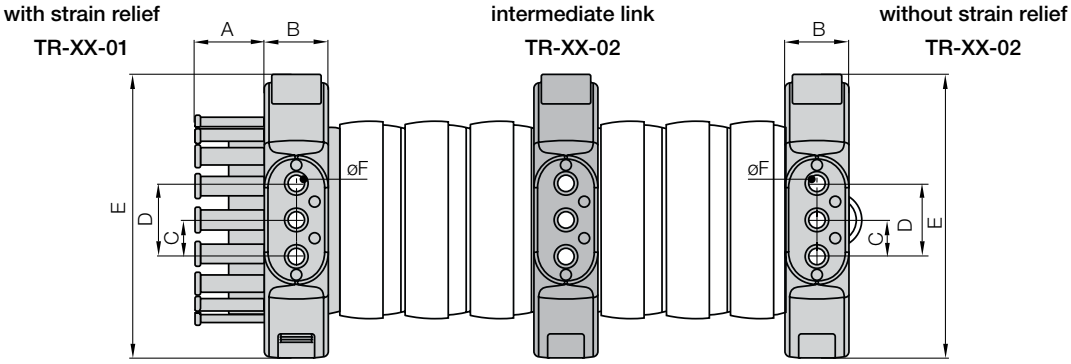
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Standard Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Standard mounting brackets

- Quick and easy installation
- Short downtimes when swapping a harnessed Triflex® R system
- Mounting bracket ❶ with strain relief available
- Mounting bracket also as ❷ intermediate link
- Quick assembly by means of snap lock
- Bracket holes for common robot types
- Can be attached at the ends or anywhere in between



### Mounting bracket with strain relief

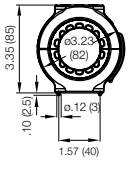
| Ø Index | A | B | C | D | E | ø F |
|---|---|---|---|---|---|---|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| -40- ➤ TR-40-01-M6[1)] | .70 (17.8) | .83 (21) | .53 (13.5) | 1.06 (27) | 3.35 (85) | .26 (6.5) |
| -60- ➤ TR-60-01-M8[1)] | .98 (25) | 1.38 (35) | .79 (20) | 1.57 (40) | 4.96 (126) | .35 (9) |
| -70- ➤ TR-70-01-M8[1)] | .98 (25) | 1.38 (35) | .79 (20) | 1.57 (40) | 4.96 (126) | .35 (9) |
| -85- ➤ TR-85-01-M8[2)] | 1.57 (40) | 1.38 (35) | .79 (20) | 1.57 (40) | 6.02 (153) | .35 (9) |
| -100- ➤ TR-100-01-M8[2)] | 1.50 (38) | 1.38 (35) | .79 (20) | 1.57 (40) | 6.02 (153) | .35 (9) |

### Mounting bracket without strain relief or as intermediate link

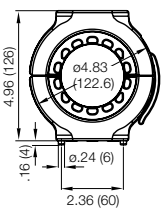
| Ø Index | A | B | C | D | E | ø F |
|---|---|---|---|---|---|---|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| -40- ➤ TR-40-02-M6[1)] | .70 (17.8) | .83 (21) | .53 (13.5) | 1.06 (27) | 3.35 (85) | .26 (6.5) |
| -60- ➤ TR-60-02-M8[1)] | .98 (25) | 1.38 (35) | .79 (20) | 1.57 (40) | 4.96 (126) | .35 (9) |
| -70- ➤ TR-70-02-M8[1)] | .98 (25) | 1.38 (35) | .79 (20) | 1.57 (40) | 4.96 (126) | .35 (9) |
| -85- ➤ TR-85-02-M8[2)] | 1.57 (40) | 1.38 (35) | .79 (20) | 1.57 (40) | 6.02 (153) | .35 (9) |
| -100- ➤ TR-100-02-M8[2)] | 1.50 (38) | 1.38 (35) | .79 (20) | 1.57 (40) | 6.02 (153) | .35 (9) |
| -125- ➤ TR-125-02-M8[2)] | — | 1.57 (40) | — | 2.52 (64) | 7.48 (190) | .35 (9) |

[1)] = ESD version available, [2)] = ESD version available on request. Call for delivery time.
Strain relief is possible on the moving end and/or the fixed end.
**Standard:** Trough holes in ØF - **Option:** with insert nuts, steel, M6/M8

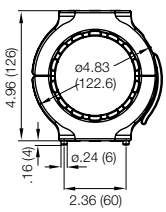
TR-40-XX



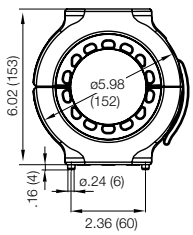

TR-60-XX



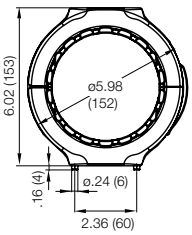

TR-70-XX



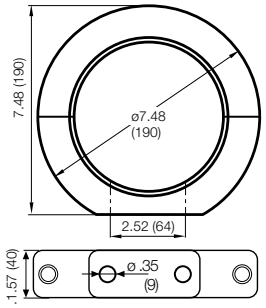

TR-85-XX




TR-100-XX

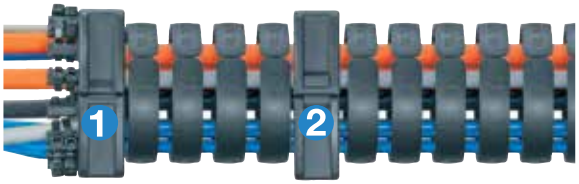


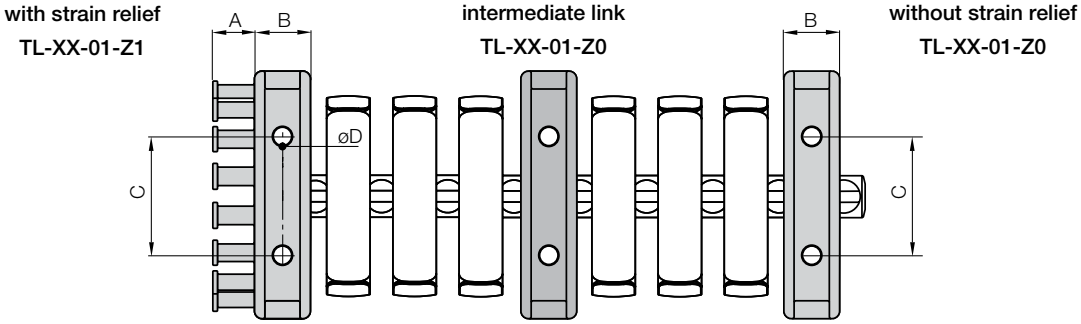

TR-125-XX



## Light mounting brackets

- Standard for TRL version, also compatible with all Triflex® R versions (TRC/TRE)
- Mounting bracket 1 with strain relief available
- Mounting bracket also as 2 intermediate link available
- Economical and light
- For simple 3D-movements and loads
- Consists of two halves - easy to assemble



### Mounting bracket with short or long strain relief

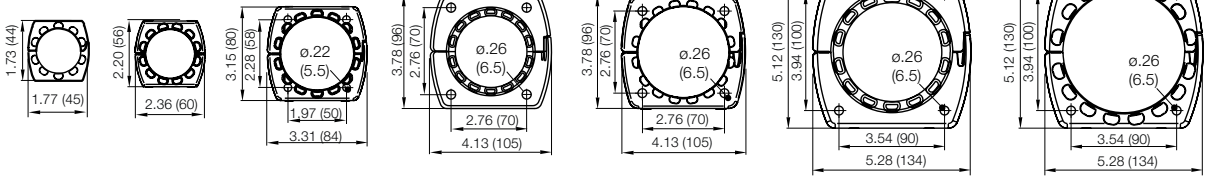
| Ø Index | With short strain relief | With long strain relief | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) |
|---|---|---|---|---|---|---|---|
| -30- ➤ | TL-30-01-Z1 | — | .51 (13) | .49 (12.5) | — | .94 (24) | .18 (4.5) |
| -40- ➤ | TL-40-01-Z1* | TL-40-01-Z2 | .55 (14) | .49 (12.5) | .79 (20) | 1.42 (36) | .23 (5.8) |
| -60- ➤ | TL-60-01-Z1* | TL-60-01-Z2 | .79 (20) | | | 1.89 (48) | .23 (5.8) |
| -65- ➤ | TL-65-01-Z1* | — | .67 (17) | .79 (20) | 1.89 (48) | .23 (5.8) | |
| -70- ➤ | TL-70-01-Z1* | TL-70-01-Z2 | 1.06 (27) | 2.52 (64) | .26 (6.5) | | |
| -85- ➤ | TL-85-01-Z1* | TL-85-01-Z1 | .69 (17.5) | 1.06 (27) | 2.52 (64) | .26 (6.5) | |
| -100- ➤ | TL-100-01-Z1* | TL-100-01-Z2 | 1.18 (30) | 2.52 (64) | .26 (6.5) | | |

### Mounting bracket without strain relief

| Ø Index | Without strain relief | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) |
|---|---|---|---|---|---|---|
| -30- ➤ | TL-30-01-Z0 | .51 (13) | .49 (12.5) | — | .94 (24) | .18 (4.5) |
| -40- ➤ | TL-40-01-Z0 | .55 (14) | .49 (12.5) | .79 (20) | 1.42 (36) | .23 (5.8) |
| -60- ➤ | TL-60-01-Z0 | .79 (20) | | | 1.89 (48) | .23 (5.8) |
| -65- ➤ | TL-65-01-Z0 | .67 (17) | .79 (20) | 1.89 (48) | .23 (5.8) | |
| -70- ➤ | TL-70-01-Z0 | 1.06 (27) | 2.52 (64) | .26 (6.5) | | |
| -85- ➤ | — | .69 (17.5) | 1.06 (27) | 2.52 (64) | .26 (6.5) | |
| -100- ➤ | TL-100-01-Z0 | 1.18 (30) | 2.52 (64) | .26 (6.5) | | |

*For moving end (ball) only suitable for Series TRL/TRLF

TL-30-XX TL-40-XX TL-60-XX TL-65-XX TL-70-XX TL-85-XX TL-100-XX




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

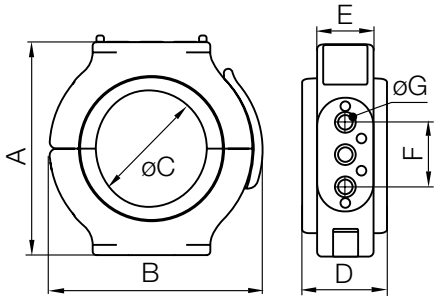
# E-Chain System® - Series Triflex® R
# Feed-Through Guides and Protectors
# For Series TRC and TRE

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

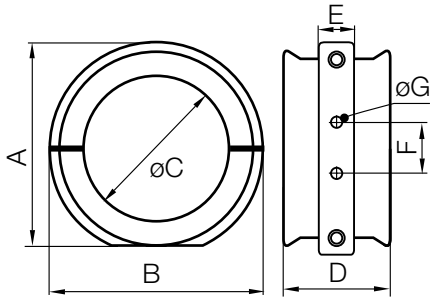
## Feed-Through Guides

- Feed through guides provide a flexible guide for the E-Chain®
- Not defined axially
- Combined with protectors to limit available range of motion
- For use with Triflex® Series TRC and TRE

**Feed-through guides without swivel bearing**
**TR-40-05 / TR-60-05**
**TR-70-05 / TR-85-05**




**Feed-through guides without swivel bearing**
**TR-100-05**
**TR-125-05**

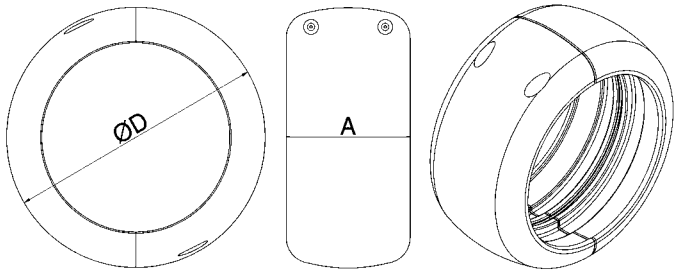


### Feed-through guides without swivel bearing

| Ø Index | without swivel bearing | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) | F in. (mm) | G in. (mm) |
|---|---|---|---|---|---|---|---|---|
| -40- ➤ | TR-40-05 | 3.35 (85) | 3.33 (84.5) | 1.81 (46) | 1.26 (32) | .83 (21) | 1.06 (27) | .26 (6.5) |
| -60- ➤ | TR-60-05 | 4.96 (126) | 4.96 (126) | 2.76 (70) | 1.97 (50) | 1.26 (32) | 1.57 (40) | .35 (9) |
| -70- ➤ | TR-70-05 | 6.02 (153) | 6.10 (155) | 3.39 (86) | 2.76 (70) | 1.38 (35) | 1.57 (40) | .35 (9) |
| -85- ➤ | TR-85-05 | 6.02 (153) | 6.10 (155) | 3.94 (100) | 3.31 (84) | 1.38 (35) | 1.57 (40) | .35 (9) |
| -100- ➤ | TR-100-05 | 6.40 (162.5) | 6.67 (169.5) | 4.53 (115) | 3.35 (85) | 1.10 (28) | 1.57 (40) | .33 (8.5) |
| -125- ➤ | TR-125-05 | 7.05 (179) | 7.48 (190) | 5.59 (142) | 3.31 (84) | 1.57 (40) | 2.52 (64) | .35 (9) |

## Protectors

- For long service life at high loads - can be optionally used as the contact locations
- Easy, fast assembly
- Dampening
- Lightweight
- Glides over edges with ease
- Can be positioned anywhere on two consecutive chain links
- Available with or without quick release



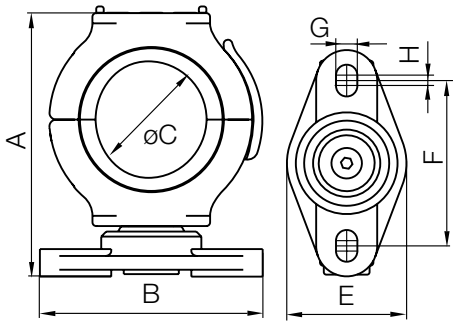
### Feed-through guides without swivel bearing

| Ø Index | Part No. with screw fastener | Part No. with Quick Release | A in. (mm) | D in. (mm) |
|---|---|---|---|---|
| -40- ➤ | TR-40-10 | TR-40-30 | 2.17 (55) | 1.06 (27) |
| -60- ➤ | TR-60-10 | TR-60-30 | 3.15 (80) | 1.57 (40) |
| -70- ➤ | TR-70-10 | TR-70-30 | 4.02 (102) | 1.97 (50) |
| -85- ➤ | TR-85-10 | TR-85-30 | 4.65 (118) | 2.32 (59) |
| -100- ➤ | TR-100-10 | TR-100-30 | 5.24 (133) | 2.64 (67) |
| -125- ➤ | TR-125-10 | — | 6.69 (170) | 3.22 (82) |

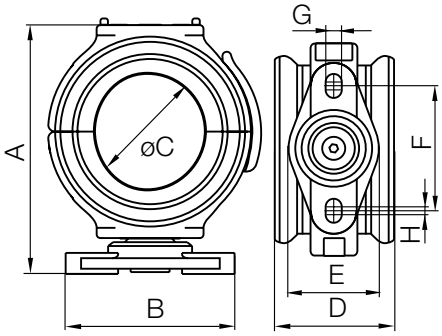
# E-Chain System® - Series Triflex® R
# Mounting bracket and Feed-Through Guides with Swivel Bearing

- Swivel bearing with maintenance-free igubal® spherical bearings
- Maximum range of motion on robots
- For use with Triflex® Series TRC and TRE

**Feed-through guides with swivel bearing**
**TR-40-07**




**Feed-through guides with swivel bearing**
**TR-60-07 / TR-70-07**
**TR-85-07**



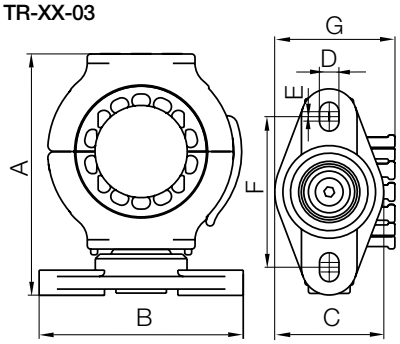
## Feed-through guides with swivel bearing

| Ø Index | | with swivel bearing | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) | F in. (mm) | G in. (mm) | H in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| -40- | ➤ | TR-40-07 | 4.25 (108) | 3.50 (89) | 1.81 (46) | 1.26 (32) | 1.85 (47) | 2.56 (65) | 0.33 (8.4) | 0.16 (4.1) |
| -60- | ➤ | TR-60-07 | 6.14 (156) | 4.65 (118) | 2.76 (70) | 1.97 (50) | 2.56 (65) | 3.44 (87.5) | 0.41 (10.5) | 0.22 (5.5) |
| -70- | ➤ | TR-70-07 | 7.20 (183) | 4.65 (118) | 3.39 (86) | 2.76 (70) | 2.56 (65) | 3.44 (87.5) | 0.41 (10.5) | 0.22 (5.5) |
| -85- | ➤ | TR-85-07 | 7.20 (183) | 4.65 (118) | 3.94 (100) | 3.31 (84) | 2.56 (65) | 3.44 (87.5) | 0.41 (10.5) | 0.22 (5.5) |

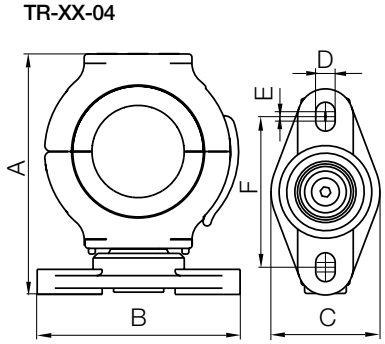
## Swivel Mounting Bracket with or without Strain Relief

- Swivel bearings are used to lessen the motion of the cables requiring guidance, while allowing for extreme twisting and bending. This relieves cables with highly sensitive bending radii (such as fiber optic cables) when following a robot's movements.
- Available in 2 designs (with or without strain relief)
- Pivoting bearing with a maintenance-free igubal® ball-and-socket joint
- Minimization of critical bending cycles
- Gentler motion
- For use with Triflex® Series TRC, TRE, TRL and TRLF

**Swivel Mounting bracket with strain relief**
**TR-XX-03**




**Swivel Mounting bracket without strain relief**
**TR-XX-04**



## Swivel mounting bracket with or without strain relief

| Ø Index | | with strain relief | without strain relief | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) | F in. (mm) | G* in. (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| -40- | ➤ | TR-40-03 | TR-40-04 | 4.13 (105) | 3.50 (89) | 1.85 (47) | 0.33 (8.4) | 0.16 (4.1) | 2.56 (65) | 2.04 (51.8) |
| -60- | ➤ | TR-60-03 | TR-40-04 | 5.98 (152) | 4.65 (118) | 2.56 (65) | 0.41 (10.5) | 0.22 (5.5) | 3.44 (87.5) | 2.89 (73.5) |
| -70- | ➤ | TR-70-03 | TR-40-04 | 5.98 (152) | 4.65 (118) | 2.56 (65) | 0.41 (10.5) | 0.22 (5.5) | 3.44 (87.5) | 2.89 (73.5) |
| -85-** | ➤ | TR-85-03 | TR-40-04 | 7.05 (179) | 4.65 (118) | 2.56 (65) | 0.41 (10.5) | 0.22 (5.5) | 3.44 (87.5) | 3.46 (88) |
| -100- | ➤ | TR-100-03 | TR-100-04 | 7.05 (179) | 4.65 (118) | 2.56 (65) | 0.41 (10.5) | 0.22 (5.5) | 3.44 (87.5) | 3.46 (88) |

* only for TR-XX-03
**Width -85 not for Triflex® Series TRL

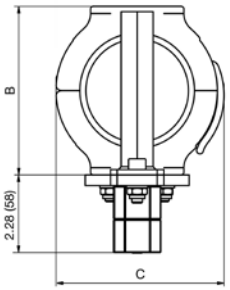
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

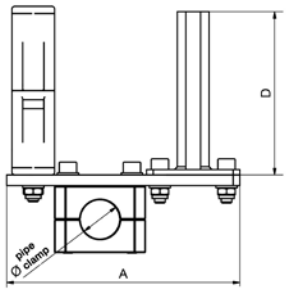
# E-Chain System® - Series Triflex® R
# Accessories - TRC, TRE

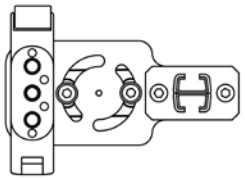
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Connections - for TRC·TRE

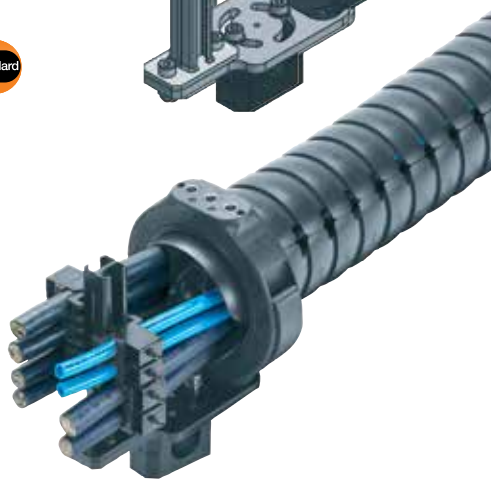
- For cables with large cross sections, or for heavy hydraulic hoses
- Optional: additional bending radius support for heavy-duty connections
- Double profile rail for igus® CFX clips
- igus® chainfix clamps made from stainless steel or steel can be used



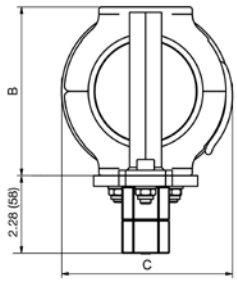
**Standard-connection** Standard

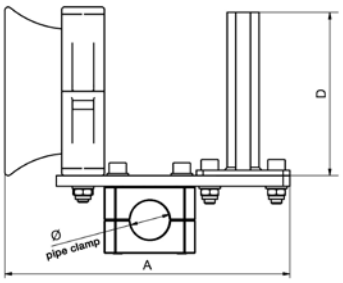


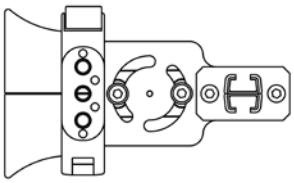
| Ø Series | | Connection standard Standard | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) |
|---|---|---|---|---|---|---|
| -60- | ➤ | TR-60-20-XX* | 6.89 (175) | 4.96 (126) | 4.96 (126) | 4.80 (122) |
| -70- | ➤ | TR-70-20-XX* | 6.89 (175) | 4.96 (126) | 4.96 (126) | 4.80 (122) |
| -85- | ➤ | TR-85-20-XX* | 6.89 (175) | 6.02 (153) | 6.02 (153) | 5.87 (149) |
| -100- | ➤ | TR-100-20-XX* | 6.89 (175) | 6.02 (153) | 6.02 (153) | 5.87 (149) |
| -125- | ➤ | TR-125-20-XX* | 7.09 (180) | 7.48 (190) | 7.48 (190) | 6.89 (175) |

* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-05-30**

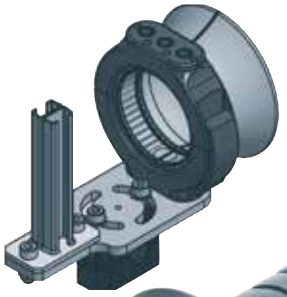
## Connection with Radius Support • for TRC·TRE

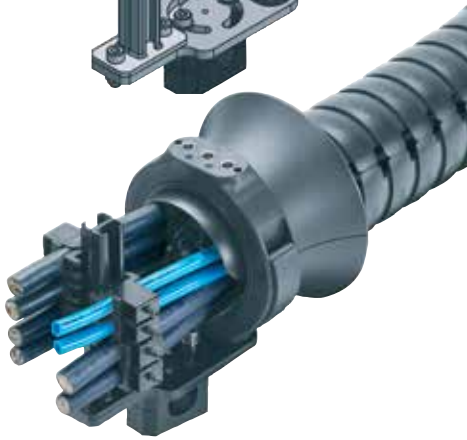


**Connection with radii support**



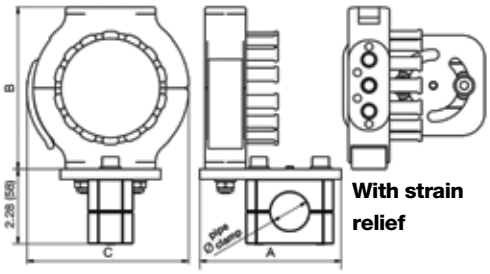


| Ø Series | | Connection standard | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) |
|---|---|---|---|---|---|---|
| -60- | ➤ | TR-60-23-XX* | 6.89 (175) | 4.96 (126) | 4.96 (126) | 4.80 (122) |
| -70- | ➤ | TR-70-23-XX* | 6.89 (175) | 4.96 (126) | 4.96 (126) | 4.80 (122) |
| -85- | ➤ | TR-85-23-XX* | 6.89 (175) | 6.02 (153) | 6.02 (153) | 5.87 (149) |
| -100- | ➤ | TR-100-23-XX* | 6.89 (175) | 6.02 (153) | 6.02 (153) | 5.87 (149) |
| -125- | ➤ | TR-125-23-XX* | 7.09 (180) | 7.48 (190) | 7.48 (190) | 6.89 (175) |

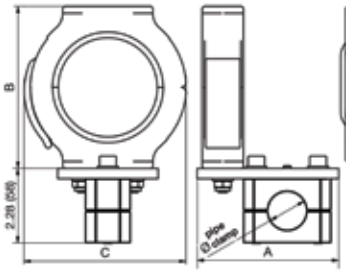
* Please add the appropriate pipe clamp diameter -XX. Available in 1.18“ (30 mm) as standard.
Also available in 1.26“ (32 mm) and 1.34“ (34 mm) upon request. **Example: TR-100-05-30**

## Pivot Bracket • for TRC·TRE

- Available in 2 versions per size (with/without strain relief)
- Reliable and simple securing of cables with cable ties
- Possible also with strain relief on the application




**With strain relief**



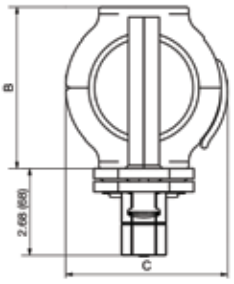

**Without strain relief**

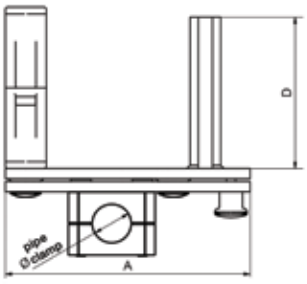
| Ø Series | | Pivot Bracket with strain relief | Pivot Bracket without strain relief | A in. (mm) | B in. (mm) | C in. (mm) |
|---|---|---|---|---|---|---|
| -40- | ➤ | TR-40-21-01-XX* | TR-40-21-02-XX* | 4.33 (110) | 3.35 (85) | 3.35 (85) |
| -60- | ➤ | TR-60-21-01-XX* | TR-60-21-02-XX* | 4.33 (110) | 4.96 (126) | 4.96 (126) |
| -70- | ➤ | TR-70-21-01-XX* | TR-70-21-02-XX* | 4.33 (110) | 4.96 (126) | 4.96 (126) |
| -85- | ➤ | TR-85-21-01-XX* | TR-85-21-02-XX* | 4.33 (110) | 6.02 (153) | 6.02 (153) |
| -100- | ➤ | TR-100-21-01-XX* | TR-100-21-02-XX* | 4.33 (110) | 6.02 (153) | 6.02 (153) |

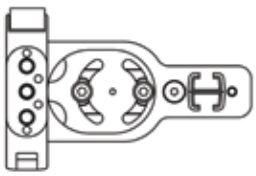
* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-21-01-30**

## Quick Exchange Unit • for TRC·TRE

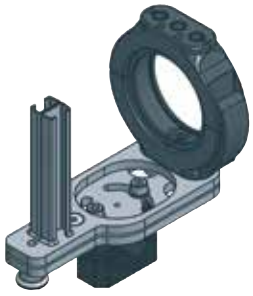
- Quickly replce in seconds
- One time alignment
- No realignment required when replacing the ReadyChain®
- Exchange of the Triflex® R unit including cables without tools



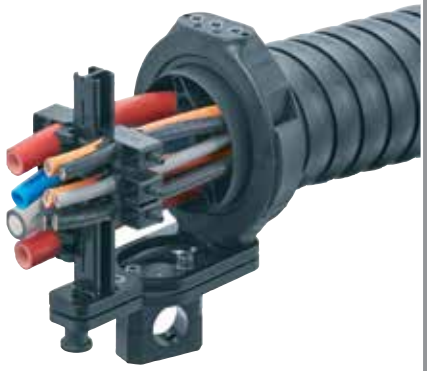



**Quick exchange unit**



| Ø Series | | Part No. Quick exchange unit | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) |
|---|---|---|---|---|---|---|
| -60- | ➤ | TR-60-22-XX* | 7.52 (191) | 4.96 (126) | 4.96 (126) | 4.72 (120) |
| -70- | ➤ | TR-70-22-XX* | 7.52 (191) | 4.96 (126) | 4.96 (126) | 4.72 (120) |
| -85- | ➤ | TR-85-22-XX* | 7.52 (191) | 6.02 (153) | 6.02 (153) | 4.72 (120) |
| -100- | ➤ | TR-100-22-XX* | 7.52 (191) | 6.02 (153) | 6.02 (153) | 4.72 (120) |

* Please add the appropriate pipe clamp diameter -XX. Available in -30 mm as standard.
Also available in -32 and -34 mm upon request. **Example: TR-100-22-30**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Accessories - TRC, TRE

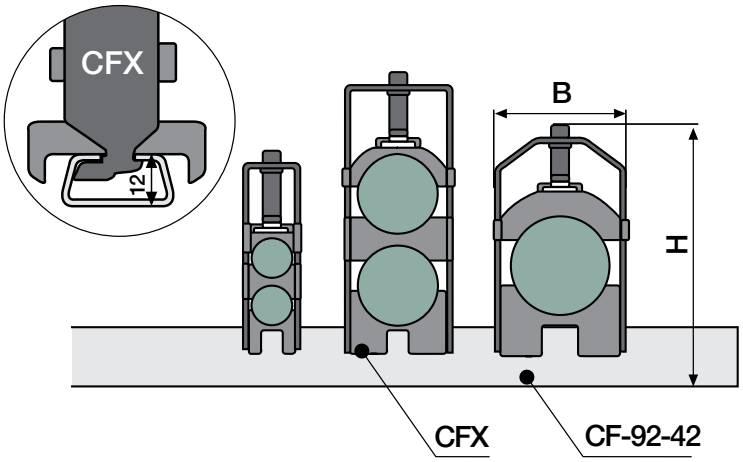


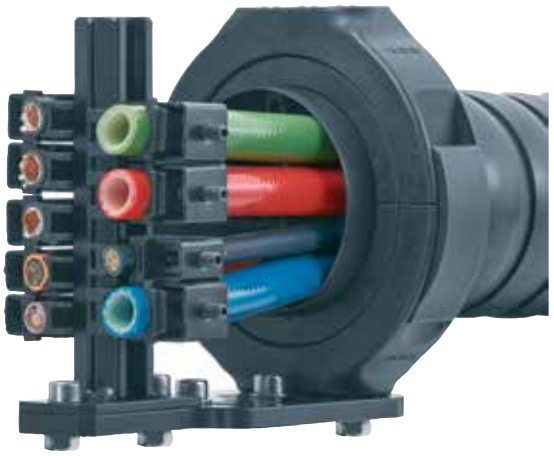
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Chainfix Clamps - Strain relief systems (only for TRC/TRE)
## Secure mounting of large cross sections with igus® standard Chainfix clamps

- A reliable strain relief is a basic requirement for a durable energy supply system. Chainfix clamps securely absorb push and tensile forces even with larger cable diameters
- Individual attachment also supports replacing specific cables
- Specifically recommended when using solid welding cables and rigid hydraulic hoses
- For use with heavy-duty connection **TR.XX.20** / **TR.XX.23** and quick release unit **TR.XX.22**



## Single clamp housing, including top/bottom saddle clamps

| Part No. Steel | Part No. Stainless Steel | in. | (ø mm) | B | H |
|---|---|---|---|---|---|
| CFX12-1 | CFX12-1E | .24 - .47 | (6 – 12) | .63 (16) | 1.57 (40) |
| CFX14-1 | CFX14-1E | .47-.55 | (12 – 14) | .71 (18) | 1.97 (50) |
| CFX16-1 | CFX16-1E | .55-.63 | (14 – 16) | .79 (20) | 2.05 (52) |
| CFX18-1 | CFX18-1E | .63-.71 | (16 – 18) | .87 (22) | 2.13 (54) |
| CFX20-1 | CFX20-1E | .71-.79 | (18 – 20) | .94 (24) | 2.20 (56) |
| CFX22-1 | CFX22-1E | .79-.87 | (20 – 22) | 1.02 (26) | 2.28 (58) |
| CFX26-1 | CFX26-1E | .87-1.02 | (22 – 26) | 1.18 (30) | 2.64 (67) |
| CFX30-1 | CFX30-1E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 2.80 (71) |
| CFX34-1 | CFX34-1E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 2.95 (75) |
| CFX38-1 | CFX38-1E | 1.34-1.50 | (34 – 38) | 1.65 (42) | 3.11 (79) |
| CFX42-1 | CFX42-1E | 1.50-1.65 | (38 – 42) | 1.81 (46) | 3.27 (83) |

igus® recommends strain relieving the moving end of a robotic application.

## Single clamp housing, including top/bottom saddle clamps and one stacker saddle clamp

| Part No. Steel | Part No. Stainless Steel | For cable diameters in. | (ø mm) | B+2 | H |
|---|---|---|---|---|---|
| CFX12-2 | CFX12-2E | .24-.47 | (6 – 12) | .63 (16) | 2.83 (72) |
| CFX14-2 | CFX14-2E | .47-.55 | (12 – 14) | .71 (18) | 2.91 (74) |
| CFX16-2 | CFX16-2E | .55-.63 | (14 – 16) | .79 (20) | 3.07 (78) |
| CFX18-2 | CFX18-2E | .63-.71 | (16 – 18) | .87 (22) | 3.23 (82) |
| CFX20-2 | CFX20-2E | .71-.79 | (18 – 20) | .94 (24) | 3.38 (86) |
| CFX22-2 | CFX22-2E | .79-.87 | (20 – 22) | 1.02 (26) | 3.54 (90) |
| CFX26-2 | CFX26-2E | .87-1.02 | (22 – 26) | 1.18 (30) | 4.29 (109) |
| CFX30-2 | CFX30-2E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 4.61 (117) |
| CFX34-2 | CFX34-2E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 4.92 (125) |

The dimensions given for H in the table is based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights.

## Protective Jacket

- Temperatures up to room temperature
- Basic structure: weave
- Coating: none
- Easy to replace due to hook and loop seal on the length side
- End sealed with rubber seals
- Silicone-free
- Standard lengths from stock

### TR-XX-16

| For Series | Part No. XX= Length of the protective cover - choose from the following standard lengths<br>Example: TR-40-16-0500 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| -40 | TR-40-16-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -60 | TR-60-16-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -70 | TR-70-16-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -85 | TR-85-16-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -100 | TR-100-16-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |

## Heat Resistant Protective Jacket

- Made from heat-resistant, wear-resistant Kevlar weave
- Short-term protection against welding and metal spatter, temperatures up to 540°C
- High abrasion resistance
- Very tight
- For rugged environments
- Easy to replace or retrofit with zipper closure
- Velcro straps at beginning and end
- Rugged (thick) design
- Silicone-free
- Asbestos-free
- Standard lengths from stock

### TR-XX-18

| For Series | Part No. XX= Length of the protective cover - choose from the following standard lengths<br>Example: TR-40-16-0500 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| -40 | TR-40-18-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -60 | TR-60-18-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -70 | TR-70-18-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -85 | TR-85-18-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -100 | TR-100-18-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |

## Abrasion Resistant Protective Jacket

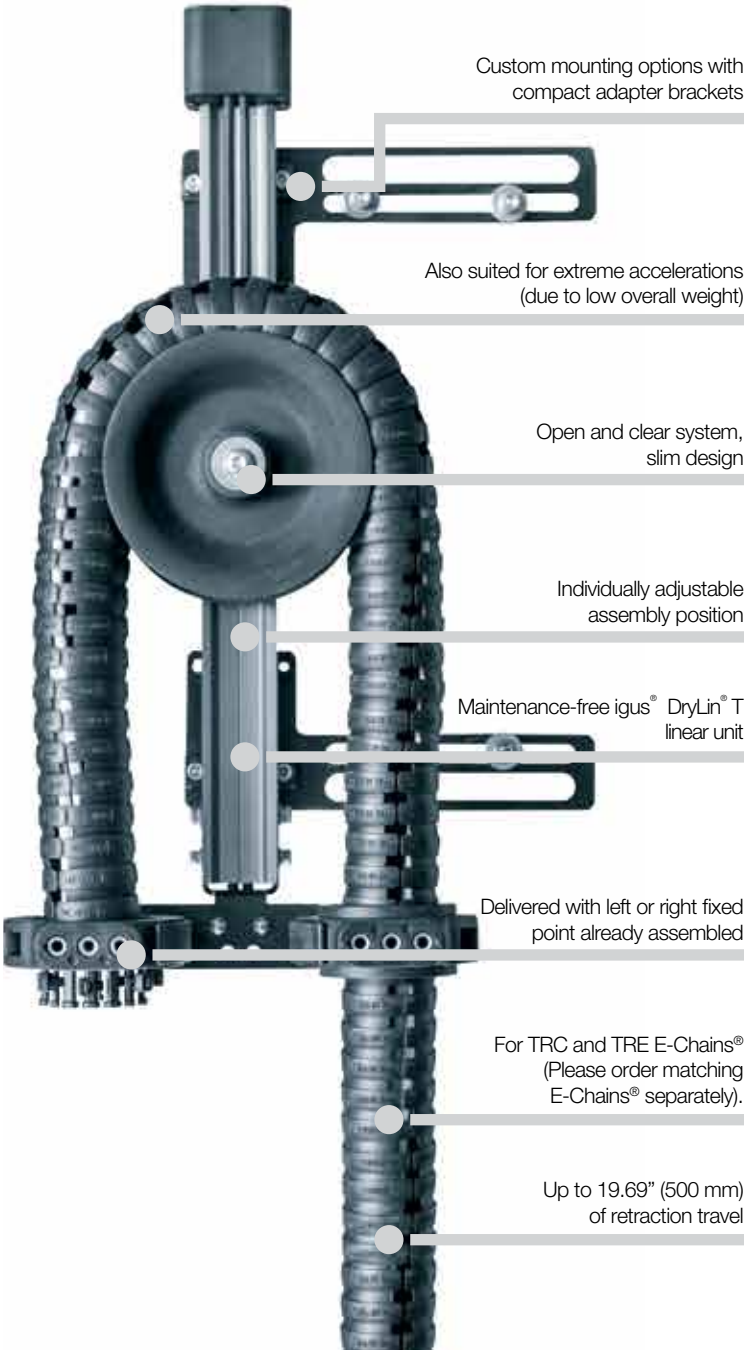
- Extremely high abrasion resistance
- Black leather
- For temperatures - 40°C to +100°C
- Very flexible
- Easy to replace or retrofit
- Silicone-free
- Asbestos-free
- Standard lengths from stock

### TR-XX-19

| For Series | Part No. XX= Length of the protective cover - choose from the following standard lengths<br>Example: TR-40-16-0500 | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| 40 | TR-40-19-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -60 | TR-60-19-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -70 | TR-70-19-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -85 | TR-85-19-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |
| -100 | TR-100-19-XX | 19.68 | (500) | 39.37 | (1000) | 59.06 | (1500) | 78.74 | (2000) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Triflex® RSE - Retraction System - Compact
# For low to medium loads




# RSE - Compact, lightweight retraction system for small-scale robotics

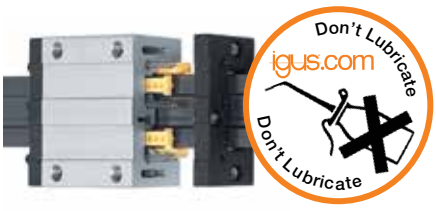
- RSE - specifically tailored to small-scale robotics
- Simple retraction system - cost effective solution to avoid loop formation
- Responds extremely fast, even on fast robot motions
- Low additional load on the robot results in no negative impact on robot handling capacity
- Universally adjustable assembly brackets
- Self-lubricating and maintenance-free igus® DryLin® T linear unit
- For maximum degrees of freedom
- Plenty of latitude for programmers
- For cable diameters up to (11 mm)

## Optional accessories - RSE Retraction System

Adapter brackets for customized mounting options

Mounting brackets - for installing directly on the tool

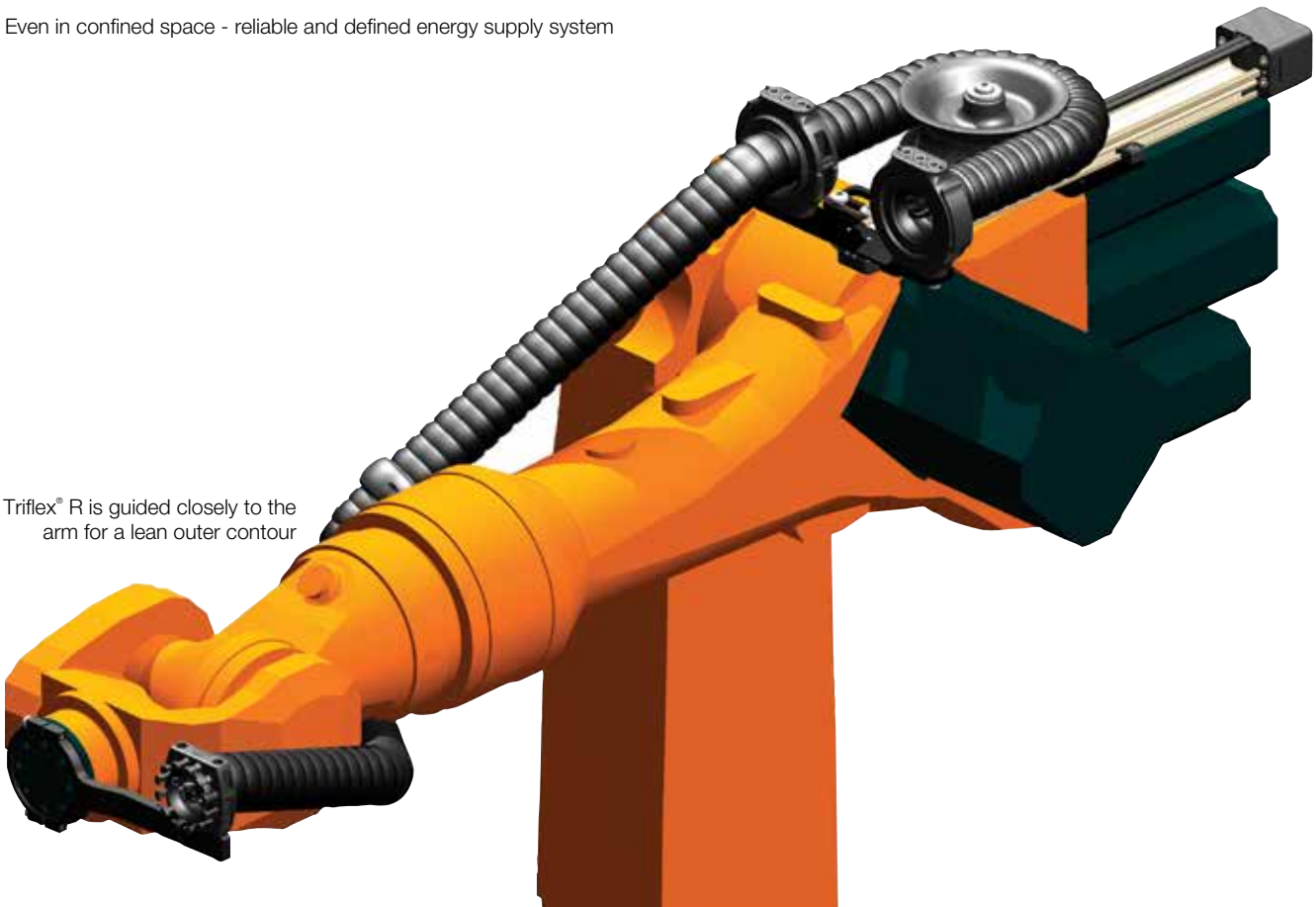
Clamps - axis 6 - for Triflex® R mounting bracket




Self-lubricating and maintenance-free igus® DryLin® T linear unit

# E-Chain System® - Series Triflex® R
# Triflex® RSE - Retraction System - Compact
# For low to medium loads

Even in confined space - reliable and defined energy supply system



Triflex® R is guided closely to the arm for a lean outer contour

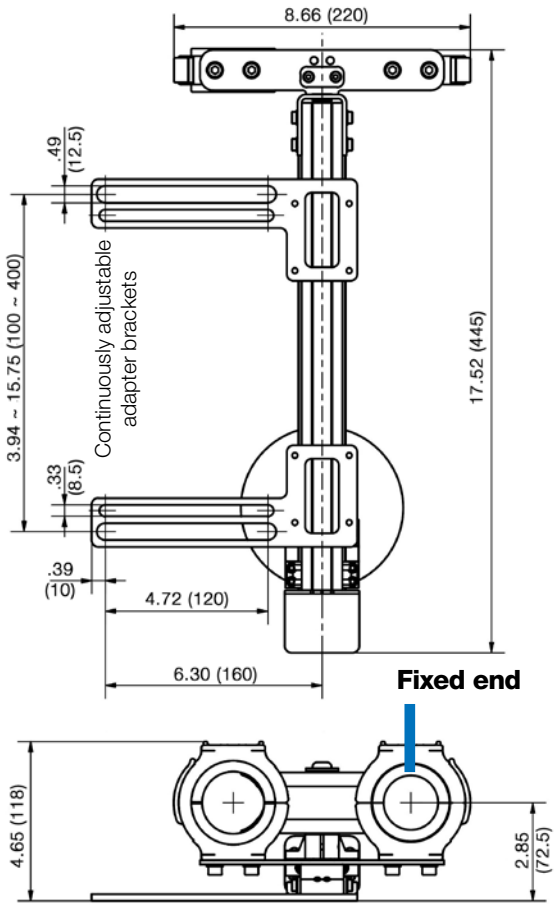
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Triflex® RSE - Retraction System - Compact
# Technical Data and Product Range

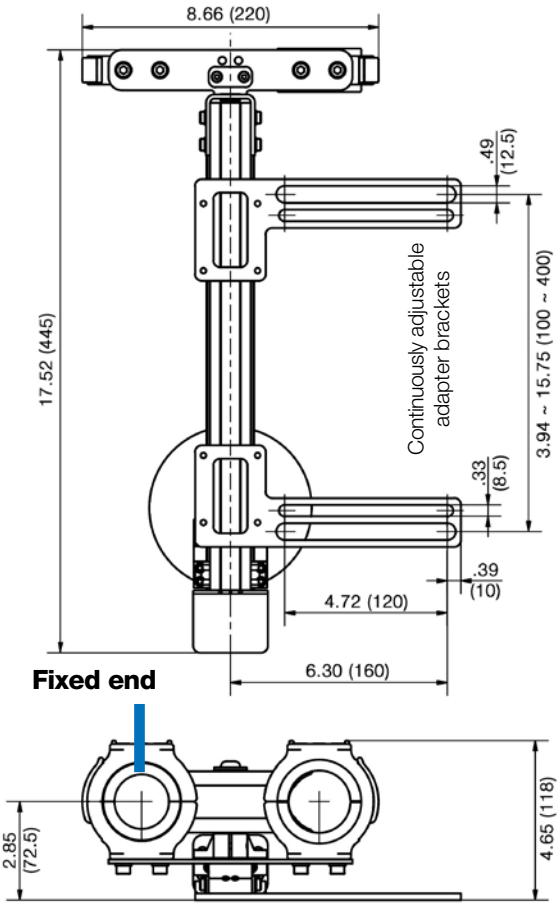
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec



**TR-RSE-40-L**



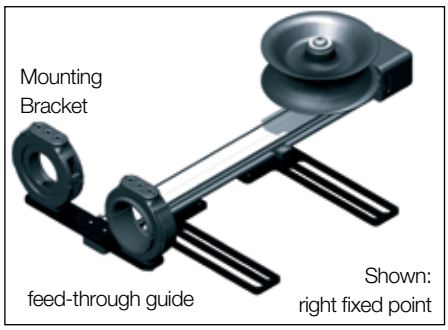

**TR-RSE-40-R**

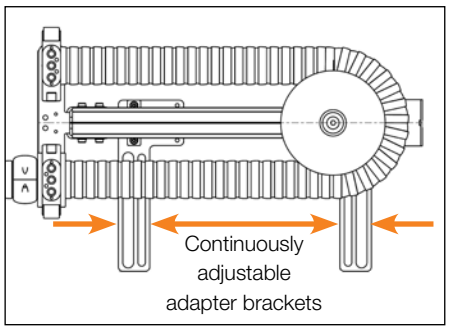



## RSE Retraction system for small-scale robotics - for TRC·TRE

| For Series ø | RSE Left fixed point Part No. | RSE Right fixed point Part No. | Retract travel max. (mm) [1] | Weight lb. | Weight (kg) |
|---|---|---|---|---|---|
| -40- ➤ | TR-RSE-40-L | TR-RSE-40-R | 500 | 3.53 | (1.6) |

1) These are maximum values. We do not recommend using more than 70% during normal operations to preserve a margin of error.
Please order matching Triflex® R E-Chain® separately.




**TR-RSE-40-L / R** Order code

- **R** = Right fixed end
- **L** = Left fixed end
- Series Ø
- System
- Triflex® series

# E-Chain System® - Series Triflex® R
# Triflex® RSE - Retraction System - Compact
# RSE Triflex® E-Chain® and Cable Length Calculations

Matching Triflex® E-Chains® for RSE
**TRC-RSE-40-058-LLLL-0**
**TRE-RSE-40-058-LLLL-0**

**Overall chain length** =
Additional length of the feed-through guide **LLLL** + the chain length within the system

RSE system (e-chain® not included)
**+** Mounting bracket
+ Feed-through guide =
**TR-RSE-40-L** or **TR-RSE-40-R**

## Product range - Matching Triflex® E-Chains® for RSE

| For Series ø | Part. No. **TRC** enclosed | Part. No. **TRE** "easy" design | Triflex® standard lengths (mm) | | | |
|---|---|---|---|---|---|---|
| -40- ➤ | TRC-RSE-40-058- LLLL-0 | TRE-RSE-40-058- LLLL-0 | 500 | 750 | 1000 | 1250 |

*Standard lengths (additional length from feed-through guide - outside of the system)

**Please add the standard-length (measured from the feed-through guide) based on the robot arm length from axis 3.**

**Example: TRC-RSE-40-058-500-0**

## Calculating the overall chain length and ordering code - RSE Triflex® E-Chains®

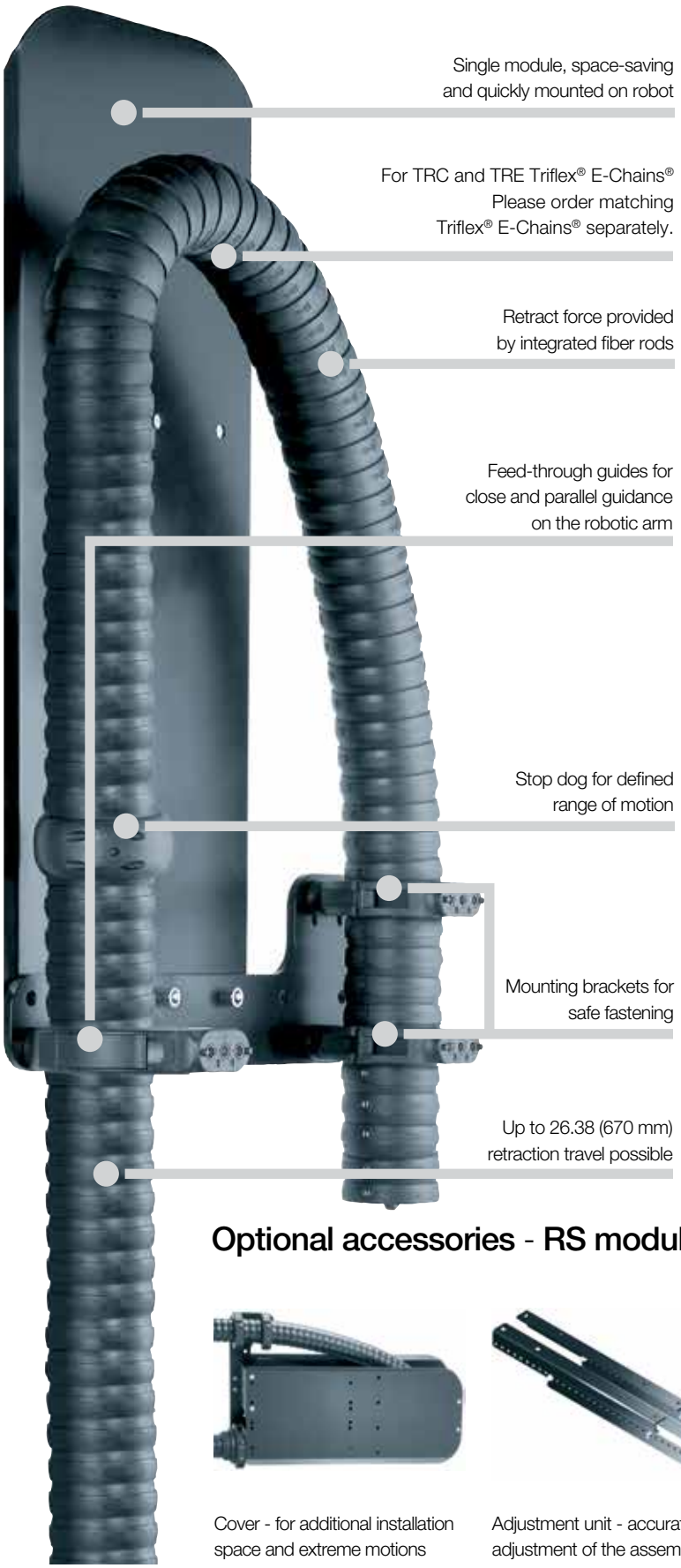
| For Series ø | Radius *R* mm | Chain length within the system mm | Number of chain links | Overall chain length in. (mm) |
|---|---|---|---|---|
| -40- ➤ | 058 | 904 | 65 | LLLL + 904 |

**Order code**

TRC-RSE-40-058-LLLL-0

- Standard color - black
- Additional length
- *R* Bending radius
- Series Ø
- System
- Triflex® series

# E-Chain System® - Series Triflex® R
# Triflex® RS - Retraction System - Universal
# For medium to large loads




## RS - Universal, modular Retraction System

Triflex® RS is a retraction system for robots with medium and high load-bearing capacity. The Triflex® RS is used as a space-saving guide for the multi-dimensionally moving Triflex® R in parallel to the robot arm. Integrated fiber rods generate a directed camber to prevent undesirable loops from forming in the working space of the robot. This permits applications with very tight installation space to be realized as well. Triflex® RS provides the option to reliably implement the energy supply system to the tool, without placing stress on the cable, therefore making a key contribution to minimizing downtimes.

- Saves space - low interfering contours, closely routed on the robotic arm
- System solution tested by the tens of thousands
- Universally applicable
- Integrated fiber rods - no external mechanical components such as springs or steel wires needed!

## Optional accessories - RS modular retraction system



Cover - for additional installation space and extreme motions

Adjustment unit - accurate adjustment of the assembly position

Adapter brackets for customized mounting options

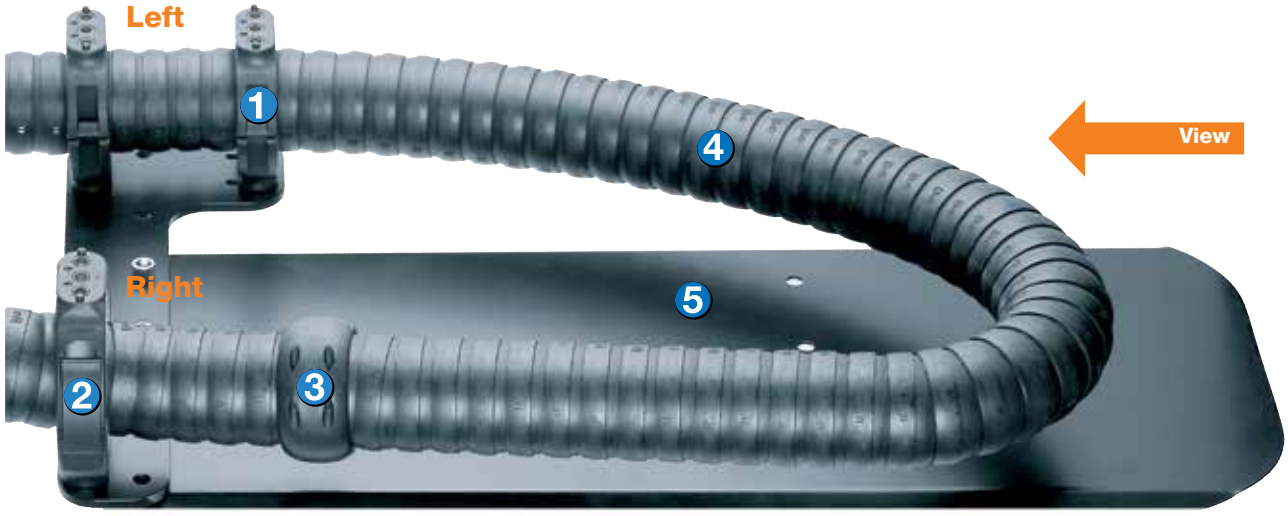
Clamps - axis 6 - for Triflex® R mounting bracket

# E-Chain System® - Series Triflex® R
# Triflex® RS - Retraction System - Universal
# For medium to large loads

Triflex® RS for a lean chain guide. The Triflex® RS is used as a space-saving guide for the multi-dimensionally moving Triflex® R in parallel to the robot arm. Video at ➤ www.igus.com/triflexr

Optional: Triflex® RS with cover - creates additional installation space on the robot

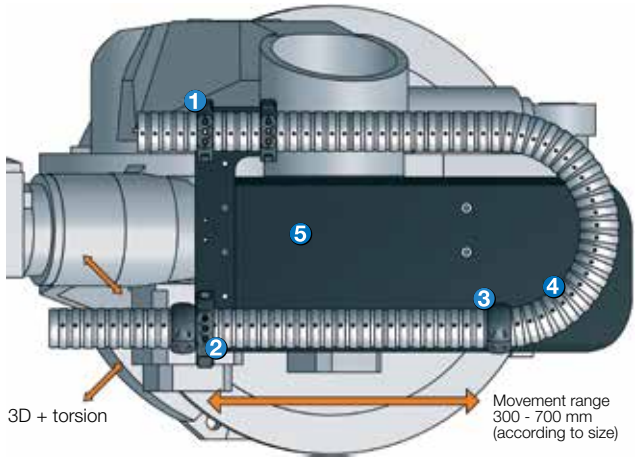
# E-Chain System® - Series Triflex® R
# Triflex® RS - Retraction System - Universal
# Technical Data and Product Range




## RS Assembly

Triflex® RS is a very compact universal assembly that is mounted to installation points available on the robot. Thanks to the low profile and the Triflex® R chain guide parallel to the robotic arm, applications with extremely low installation space can be achieved. Triflex® RS can be installed parallel to the robotic arm. Triflex® RS with integrated spring mechanism allows efficient energy supply to the robotic head without stress on the cables. The Triflex® R kit offers all advantages of proven Triflex® accessories, such as the FlexBar, universal assembly kit and fiber rod module in one system. All Triflex® R features are also included in the universal Triflex® RS module.

- One package for all applications, immediately installable
- Integrated fiber rods to retract cables
- First choice for robotic applications with narrow installation space
- Saves space through low installation height and close routing on the robotic arm
- Excellent service life
- Universally applicable



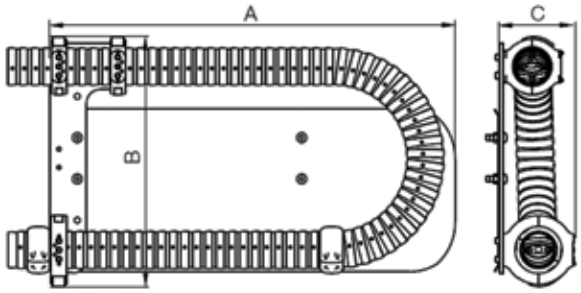

1. Mounting brackets for safe fastening
2. Glide lead-through for a close and parallel guidance on the robotic arm
3. Limit stop dog for a defined free movement
4. Integrated recuperating spring prevents loop formations
5. Single module, space-saving and quickly mounted on robot

**Triflex® RS - Extremely flat design, guides close to the robotic arm**

**Integrated recuperating spring prevents loop formations**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

# E-Chain System® - Series Triflex® R
# Triflex® RS - Retraction System - Universal
# RS Triflex® E-Chain® and Cable Length Calculations




**Triflex® RS - Fastening point, right**

| Universal module TRS for Series | Part No. | A in. (mm) | B in. (mm) | C in. (mm) |
|---|---|---|---|---|
| TRC-40/TRE-40 | ➤ TRC/TRE-RS-40-R | 24.41 (620) | 11.85 (301) | 3.74 (95) |
| TRC-60/TRE-60 | ➤ TRC/TRE-RS-60-R | 34.84 (885) | 20.79 (528) | 5.91 (150) |
| TRC-70/TRE-70 | ➤ TRC/TRE-RS-70-R | 34.84 (885) | 21.46 (545) | 6.57 (167) |
| TRC-85/TRE-85 | ➤ TRC/TRE-RS-85-R | 34.84 (885) | 22.24 (565) | 6.57 (167) |
| TRC-100/TRE-100 | ➤ TRC/TRE-RS-100-R | 35.93 (912.5) | 24.17 (614) | 6.57 (167) |

**Triflex® RS - Fastening point, right, with cover**

| Universal module TRS for Series | Part No. | A in. (mm) | B in. (mm) | C in. (mm) |
|---|---|---|---|---|
| TRC-40/TRE-40 | ➤ TRC/TRE-RS-40-RC | 24.41 (620) | 11.85 (301) | 3.74 (95) |
| TRC-60/TRE-60 | ➤ TRC/TRE-RS-60-RC | 34.84 (885) | 20.79 (528) | 5.91 (150) |
| TRC-70/TRE-70 | ➤ TRC/TRE-RS-70-RC | 34.84 (885) | 21.46 (545) | 6.57 (167) |
| TRC-85/TRE-85 | ➤ TRC/TRE-RS-85-RC | 34.84 (885) | 22.24 (565) | 6.57 (167) |
| TRC-100/TRE-100 | ➤ TRC/TRE-RS-100-RC | 35.93 (912.5) | 24.17 (614) | 6.57 (167) |

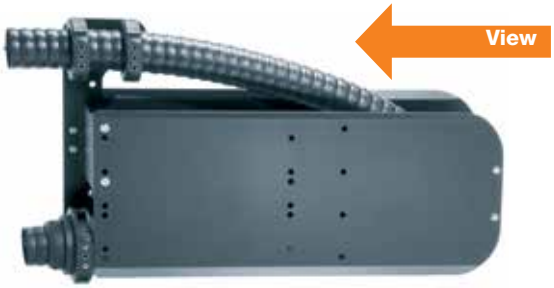
**Triflex® RS - Fastening point, left**

| Universal module TRS for Series | Part No. | A in. (mm) | B in. (mm) | C in. (mm) |
|---|---|---|---|---|
| TRC-40/TRE-40 | ➤ TRC/TRE-RS-40-L | 24.41 (620) | 11.85 (301) | 3.74 (95) |
| TRC-60/TRE-60 | ➤ TRC/TRE-RS-60-L | 34.84 (885) | 20.79 (528) | 5.91 (150) |
| TRC-70/TRE-70 | ➤ TRC/TRE-RS-70-L | 34.84 (885) | 21.46 (545) | 6.57 (167) |
| TRC-85/TRE-85 | ➤ TRC/TRE-RS-85-L | 34.84 (885) | 22.24 (565) | 6.57 (167) |
| TRC-100/TRE-100 | ➤ TRC/TRE-RS-100-L | 35.93 (912.5) | 24.17 (614) | 6.57 (167) |

**Triflex® RS - Fastening point, left, with cover**

| Universal module TRS for Series | Part No. | A in. (mm) | B in. (mm) | C in. (mm) |
|---|---|---|---|---|
| TRC-40/TRE-40 | ➤ TRC/TRE-RS-40-LC | 24.41 (620) | 11.85 (301) | 3.74 (95) |
| TRC-60/TRE-60 | ➤ TRC/TRE-RS-60-LC | 34.84 (885) | 20.79 (528) | 5.91 (150) |
| TRC-70/TRE-70 | ➤ TRC/TRE-RS-70-LC | 34.84 (885) | 21.46 (545) | 6.57 (167) |
| TRC-85/TRE-85 | ➤ TRC/TRE-RS-85-LC | 34.84 (885) | 22.24 (565) | 6.57 (167) |
| TRC-100/TRE-100 | ➤ TRC/TRE-RS-100-LC | 35.93 (912.5) | 24.17 (614) | 6.57 (167) |

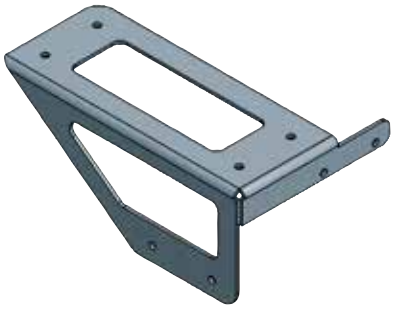
**Fastening point, right**




Triflex® R-Set with cover for the additional support of switch cabinets or valve terminals

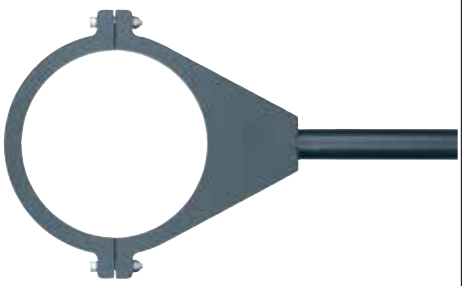
### Triflex® R-Set with cover (barrier)

- Creates more mounting space on robots - e.g. for switch cabinets or valve terminals
- For upside down applications
- Enables the use of Triflex® RS in applications with extreme movements



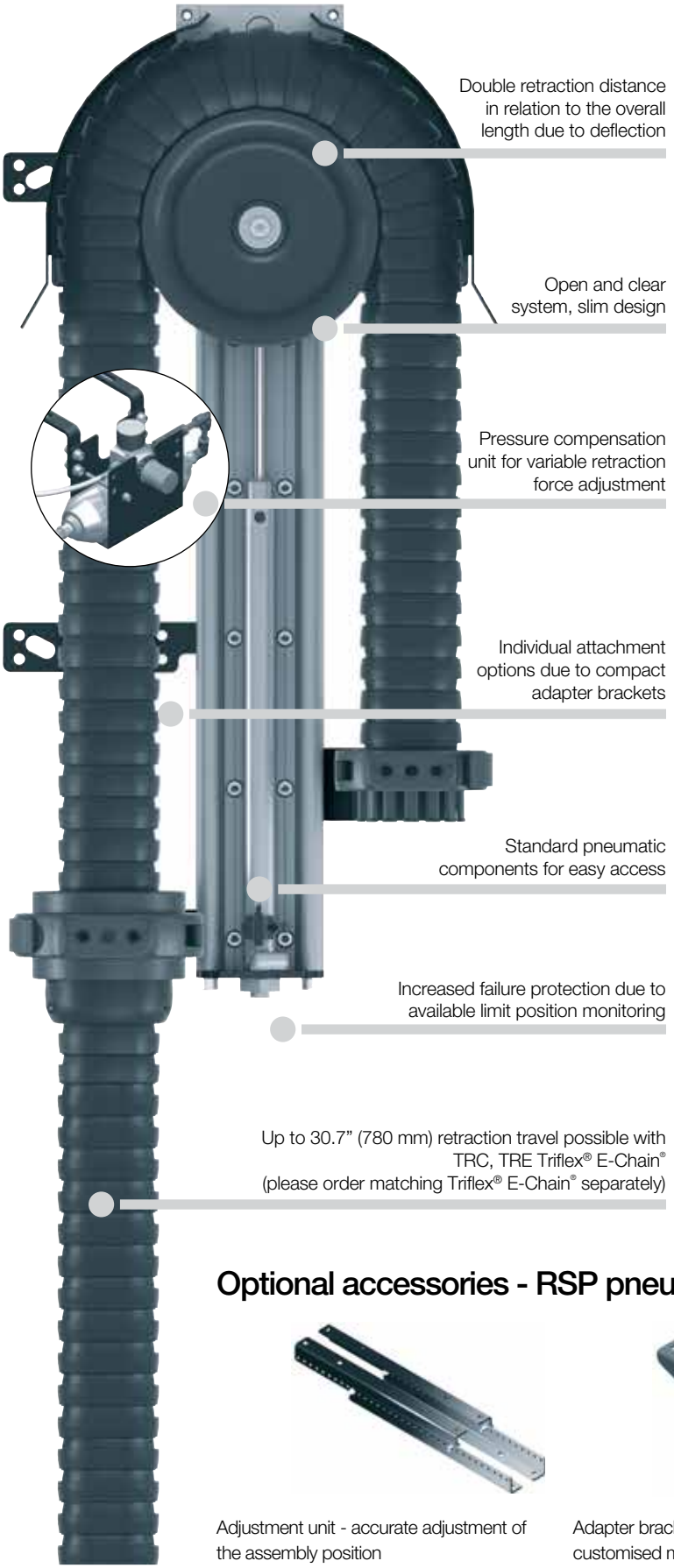
### 43 Adapter brackets for robots from stock

- 43 adapter bracket types from stock for many different robots
- For all Triflex® RS modules
- For assembly to the side or on top



### Triflex® R installed on axis 6
### Part No. TR-907-667-Inner Ø

- One axis diameter (Ø30 mm) for all robots
- Easy and fast assembly
- For Triflex® R mounting bracket with CFX clamps (TR-XX-20-30)
- For Triflex® R mounting bracket with profile rail (TR-XX-21-30)
- For TR-XX-22-30 Quick exchange kit




# RSP - Pneumatic Retraction System

Prevent creation of loops on robot hand with continuously adjustable retraction force - Triflex® RSP. Pneumatic retraction system for multi-axis robot applications. Deployment lengths of up to 30.7“ (780 mm) facilitate reliable guidance of cables and hoses, even on large robots with complex motions. The use of a pneumatic cylinder allows the retraction forces to be adjustable. Ranging from light or heavy fillings, long or short robot arms - the RSP retraction system can always be adjusted for the retraction force needed by the specific application.

- **Even larger E-Chains®** diameters up to 4.92“ (125 mm) can be guided reliably
- Almost constant force path over the complete travel, even with heavy fillings
- The limit position can be monitored, thus preventing damage during malfunctions
- Greater retraction forces than RS system
- Attachment options for a wide range of robot types and manufacturers with adapter brackets
- Developed for axis 3-6 on industrial robots
- Almost no energy consumption due to integrated compressed air accumulator

## Optional accessories - RSP pneumatic retraction system



Adjustment unit - accurate adjustment of the assembly position

Adapter brackets for customised mounting options

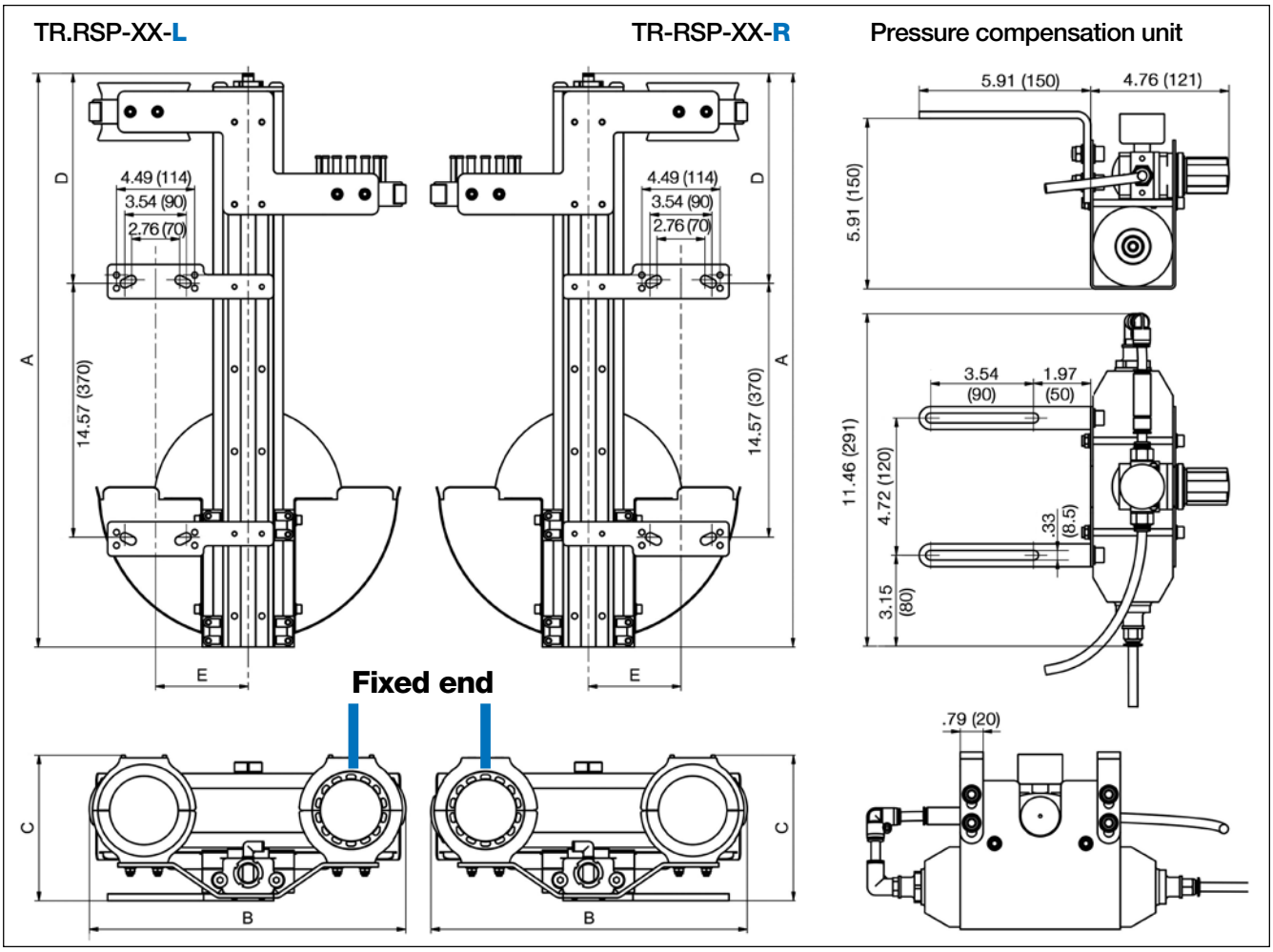
Clamps - axis 6 - for Triflex® R mounting bracket

Pneumatic Retraction System Triflex® RSP - prevents loops from forming in the operating space of the robot

Triflex RSP system on a six axis robot

# E-Chain System® - Series Triflex® R
# Triflex® RSP - Retraction System - Pneumatic
# Technical Data and Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec



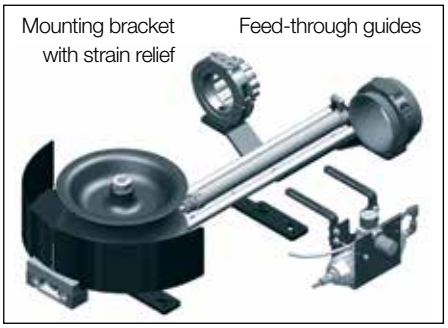

## Product range - RSP Pneumatic Retraction System - for TRC TRE

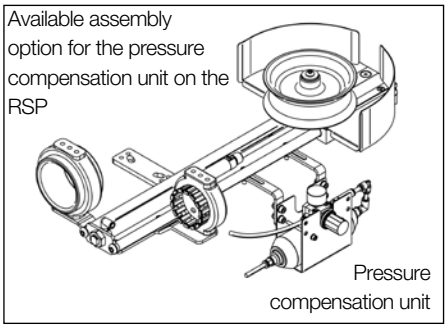
| For Series ø | RSP Left fixed point Part. No. | RSP Right fixed point Part. No. | Retract travel maximum in. (mm) 1) | Dimension A in. (mm) | Dimension B in. (mm) | Dimension C in. (mm) | Dimension D in. (mm) | Dimension E in. (mm) | Weight lb. (kg) |
|---|---|---|---|---|---|---|---|---|---|
| -60- ➤ | TR-RSP-60-L | TR-RSP-60-R | 22.83 (580) | 31.18 (792) | 15.59 (396) | 6.97 (177) | 10.91 (277) | 5.31 (135) | 35.49 (16.1) |
| -70- ➤ | TR-RSP-70-L | TR-RSP-70-R | 22.83 (580) | 31.18 (792) | 15.59 (396) | 6.97 (177) | 10.91 (277) | 5.31 (135) | 35.71 (16.2) |
| -85- ➤ | TR-RSP-85-L | TR-RSP-85-R | 24.41 (620) | 32.91 (836) | 18.15 (461) | 8.39 (213) | 12.05 (306) | 5.31 (135) | 42.77 (19.4) |
| -100- ➤ | TR-RSP-100-L | TR-RSP-100-R | 24.41 (620) | 33.27 (845) | 18.39 (467) | 8.39 (213) | 12.05 (306) | 5.31 (135) | 42.99 (19.5) |
| -125- ➤ | TR-RSP-125-L | TR-RSP-125-R | 30.71 (780) | 41.06 (1043) | 22.44 (570) | 9.65 (245) | 15.94 (405) | 5.31 (135) | 53.13 (24.1) |

Pressure compensation unit, mounting bracket, and feed-through guides are included.

Please order matching Triflex® E-Chain® separately.

1) These are maximum values. We do not recommend using more than 70% during normal operations to preserve a margin of error.




**Order code**

TR- RSP-XX -L / R

- **R** = Right fixed end
- **L** = Left fixed end
- Series Ø
- System
- Triflex® series

# E-Chain System® - Series Triflex® R
# Triflex® RSP - Retraction System - Pneumatic
# RSP E-Chain® and Cable Length Calculations

Matching Triflex® R E-Chains® for RSP
**TRC-RSP-XX-*R*-LLLL-0**
**TRE-RSP-XX-*R*-LLLL-0**

**Overall chain length** =
Additional length of the gliding feed-through **LLLL** + the chain length within the system

RSP system (without E-Chain®)
+ pressure compensation unit
+ mounting bracket
+ gliding feed-through =
**TR-RSP-XX-L** or **TR-RSP-XX-R**

## Product range - Matching Triflex® E-Chains® for RSP

| For Series ø | Part. No. **TRC** enclosed | Part. No. **TRE** "easy" design | E-Chains® Standard lengths (mm) | | | |
|---|---|---|---|---|---|---|
| -60- ➤ | TRC-RSP-60-087- LLLL-0 | TRE-RSP-60-087- LLLL-0 | 500 | 1000 | 1500 | 2000 |
| -70- ➤ | TRC-RSP-70-110- LLLL-0 | TRE-RSP-70-110- LLLL-0 | 500 | 1000 | 1500 | 2000 |
| -85- ➤ | TRC-RSP-85-135- LLLL-0 | TRE-RSP-85-135- LLLL-0 | 500 | 1000 | 1500 | 2000 |
| -100- ➤ | TRC-RSP-100-145- LLLL-0 | TRE-RSP-100-145- LLLL-0 | 500 | 1000 | 1500 | 2000 |
| -125- ➤ | TRC-RSP-125-182- LLLL-0 | TRE-RSP-125-182- LLLL-0 | 500 | 1000 | 1500 | 2000 |

*Standard lengths (additional length from feed-through guide - outside of the system) - Custom lengths on request.
**Please add the standard-length (measured from the feed-through guide) based on the robot arm length from axis 3.**
**Example: TRC-RSP-60-087-500-0**

## Calculating the overall chain length and ordering code - RSP Triflex® E-Chains®

| For Series ø | Radius *R* mm | Chain length within the system mm | Number of chain links | Overall chain length in. (mm) |
|---|---|---|---|---|
| -60- ➤ | 087 | 1489 | 73 | LLLL + 1489 |
| -70- ➤ | 110 | 1484 | 58 | LLLL + 1484 |
| -85- ➤ | 135 | 1622 | 53 | LLLL + 1622 |
| -100- ➤ | 145 | 1656 | 48 | LLLL + 1656 |
| -125- ➤ | 182 | 1940 | 44 | LLLL + 1940 |

**TRC-RSP-XX-*R*-LLLL-0**
**TRE-RSP-XX-*R*-LLLL-0**

**Order code**

- Standard color - black
- Additional length
- *R* Bending radius
- Series ø
- System
- Triflex® series

Telephone 1-800-521-2747
Fax 1-401-438-7270

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email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

# E-Chain System® - Series Triflex® R
# Triflex® RS & RSP Accessories

## Connection to axis 6

**Clamps**

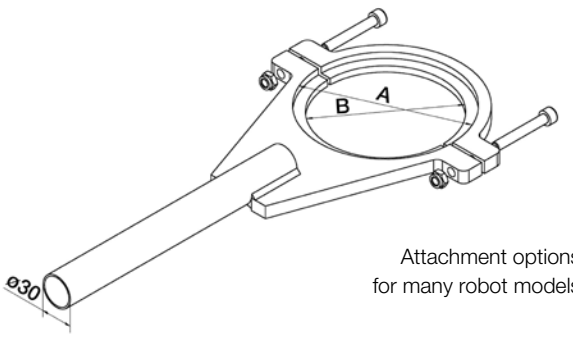
- Easy and fast alignment of the fixed point relative to the tool position
- **Depending on robot design, with or without circumferential keyway**
- **Used together with:**

- Heavy-duty connection **TR-XX-20... / TR-XX-23...**
- Swivel retainers **TR-XX-21...**
- Quick exchange unit **TR-XX-22...**

| Part No. | Example for robot type | Flange | Dim. A (mm) | Dim. B (mm) | Weight (lb) |
|---|---|---|---|---|---|
| TR-907-857 | KUKA KR 30-3 (HA) | yes | 130 | 115 | 4.2 |
| | KUKA KR 60-3 (HA) | yes | 130 | 115 | 4.2 |
| | KUKA KR 60 L45-3 (HA) | yes | 130 | 115 | 4.2 |
| | KUKA KR 60 L30-3 (HA) | yes | 130 | 115 | 4.2 |
| TR-907-901 | KUKA Quantec, large flange | yes | 205 | 190 | 5.5 |
| | KUKA KR 125/3 | yes | 205 | 190 | 5.5 |
| | KUKA KR 150/3 | yes | 205 | 190 | 5.5 |
| | KUKA KR 200/3 | yes | 205 | 190 | 5.5 |
| | KUKA KR 360/1 | yes | 205 | 190 | 5.5 |
| | KUKA KR 500/1 | yes | 205 | 190 | 5.5 |
| | KUKA KR 150/2 Series 2000 | yes | 205 | 190 | 5.5 |
| | KUKA KR 150/2 Series 2000 | yes | 205 | 190 | 5.5 |
| | KUKA KR 180/2 Series 2000 | yes | 205 | 190 | 5.5 |
| | KUKA KR 210/2 Series 2000 | yes | 205 | 190 | 5.5 |
| TR-908-115 | KUKA KR 1000 Titan | yes | 250 | 242 | 6.7 |
| TR-907-992 | Fanuc R-2000iB | yes | 165 | 160 | 5.3 |
| | Fanuc R-2000iA | yes | 165 | 160 | 5.3 |
| | Reis RV 130 | yes | 165 | 160 | 5.3 |
| TR-908-065 | Fanuc M-710iC 50 | yes | 130 | 124 | 4.9 |
| | Fanuc M-710iC 70 | yes | 130 | 124 | 4.9 |
| TR-909-387 | Motoman UP 50 | yes | 125 | 100 | 4.2 |
| | Motoman HP 50 | yes | 125 | 100 | 4.2 |
| | Motoman MH 50 | yes | 125 | 100 | 4.2 |
| TR-910-544 | Reis RV60-60 | yes | 145 | 125 | 4.2 |
| | Reis RV60-40 | yes | 145 | 125 | 4.2 |
| | Stäubli TX200 | yes | 145 | 125 | 4.2 |

Other sizes available on request!

## Clamp product range




Attachment options
for many robot models

| Part No. | Example for robot type | Flange | Dim. A (mm) | Dim. B (mm) | Weight (lb) |
|---|---|---|---|---|---|
| TR-907-667-125 | for custom flange | no | 125 | = A | 4.6 |
| TR-907-667-140 | KUKA Quantec small flange | no | 140 | = A | 10.8 |
| TR-907-667-142 | Hyundai HX 165 | no | 142 | = A | 5.0 |
| TR-907-667-150 | Comau NJ 130 | no | 150 | = A | 5.3 |
| TR-907-667-160 | ABB IRB 6400 | no | 160 | = A | 5.4 |
| | Fanuc R2000 | no | 160 | = A | 5.4 |
| | Fanuc S420 | no | 160 | = A | 5.4 |
| Tr-907-667-180 | for custom flange | no | 180 | = A | 5.6 |
| Tr-907-667-190 | Comau NH3 | no | 190 | = A | 5.7 |
| Tr-907-667-200 | KUKA KR 125/1 | no | 200 | = A | 6.0 |
| | KUKA KR 150/1 | no | 200 | = A | 6.0 |
| | KUKA KR 200/1 | no | 200 | = A | 6.0 |
| | ABB IRB 6640 | no | 200 | = A | 6.0 |
| | ABB IRB 6620 | no | 200 | = A | 6.0 |
| | ABB IRB 6650 | no | 200 | = A | 6.0 |
| Tr-907-667-220 | KUKA KR 360-2 | no | 220 | = A | 6.2 |
| | KUKA KR 500-2 | no | 220 | = A | 6.2 |
| Tr-907-667-223 | ABB IRB 7600-340 | no | 223 | = A | 7.7 |
| | ABB IRB 7600-500 | no | 223 | = A | 7.7 |
| Tr-907-667-230 | KUKA KR 360 Series 2000 | no | 230 | = A | 6.4 |
| | KUKA KR 500 Series 2000 | no | 230 | = A | 6.4 |
| Tr-907-667-250 | Fanuc M900iA 350 | no | 250 | = A | 7.1 |
| | Fanuc M900iA 260L | no | 250 | = A | 7.1 |
| Tr-907-667-275 | Fanuc M900iA 200P | no | 275 | = A | 7.5 |
| Tr-907-667-315 | Fanuc M900iA 600 | no | 315 | = A | 7.9 |
| | Fanuc M900iA 400L | no | 315 | = A | 7.9 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Triflex® RS & RSP Accessories - Adapter Brackets

## Adjustment unit - for RSP·RS

Broad adjustment range of ± 260 mm

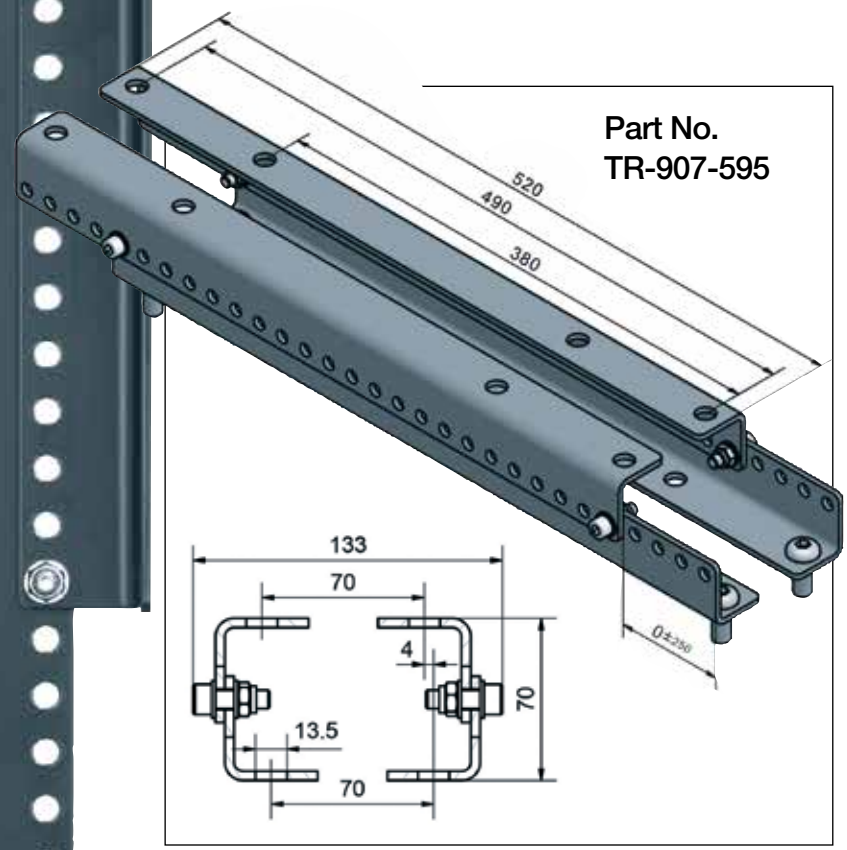
Can be combined with igus® adapter brackets

Simplifies alignment in small robot cells

**TR-907-595**
weight: 11 lb

## Adjustment unit - for RS & RSP

The optionally available adjustment unit is installed between the robot arm and the retraction system, and supports accurate adjustments of the assembly position of our igus® retraction systems on the robot arm. Particularly recommended when various large robots will be equipped with a uniform cable package.

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QuickSpec/RFQ: http://www.igus.com/quickspec

# From stock for many robot types | for RSE, RS & RSP

43 brackets from stock for many robot types

For all Triflex® RSE-, RS and RSP modules

Also for robots with lateral assembly positions

3D CAD data available online for download

## Adapter bracket - for RSE, RS & RSP

As attachment mechanism to robots, our RS and RSP retraction systems provide the widely used drill patterns: 380 x 70 mm and 490 x 90 mm (in Ø12.5 mm). We also supply a wide range of manufacturer and model-dependent adapters (from stock) to adapt to attachment options on robots that vary from these. For instance, many robot models are equipped by the factory only with lateral assembly positions - in these cases, our adapter product range also supports reliable assembly of the retraction systems without additional design-engineering effort. Product range for many robot types

▶ next page

Application example with RS system on ABB Series 6600



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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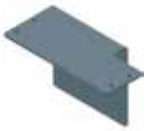
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

# E-Chain System® - Series Triflex® R
# Triflex® RS & RSP Accessories - Adapter Brackets

## Adapter bracket product range - for RSE, RS & RSP

| Adapter bracket | Part No. | For manufacturer | Example for robot type | Weight (lb) |
|---|---|---|---|---|
| | TR-907-347 | **ABB** | IRB 6600<br>IRB 6640<br>IRB 6650 | 8.8 |
|  | TR-907-468 | **ABB** | IRB 6400 | 21.6 |
| | TR-907-448 | **ABB** | IRB 4400 | 11 |
| | TR-907-381 | **ABB** | IRB 2400/10<br>IRB 2400/16 | 11.5 |
| | TR-907-905 | **ABB** | IRB 6620 | 6.2 |
| | TR-908-494 | **ABB** | IRB 4600<br>IRB 2600 | 6.4 |
| | TR-907-374 | **Comau** | NH1 130-2.6<br>NH3 165-2.7<br>NH3 220-2.7<br>NJ 110-3.0<br>NJ 110-2.6<br>SMART5 NJ 165 3.0 | 10.4 |
| | TR-907-447 | **Comau** | NM 45-2.0<br>NM 16-3.1 | 7.5 |
| | TR-908-493 | **Comau** | Smart six | 4.9 |
| | TR-907-327 | **Motomann** | UP 20<br>UP 50<br>UP 130<br>UP 165<br>ES 165<br>ES 200<br>ES 280<br>HP 20<br>HP 50<br>MH6<br>HP 165 | 1.9 |
| | TR-909-641 | **Motomann** | | 4.4 |

More adapeter brackets on request. CAD data online.

## From stock for many robot types

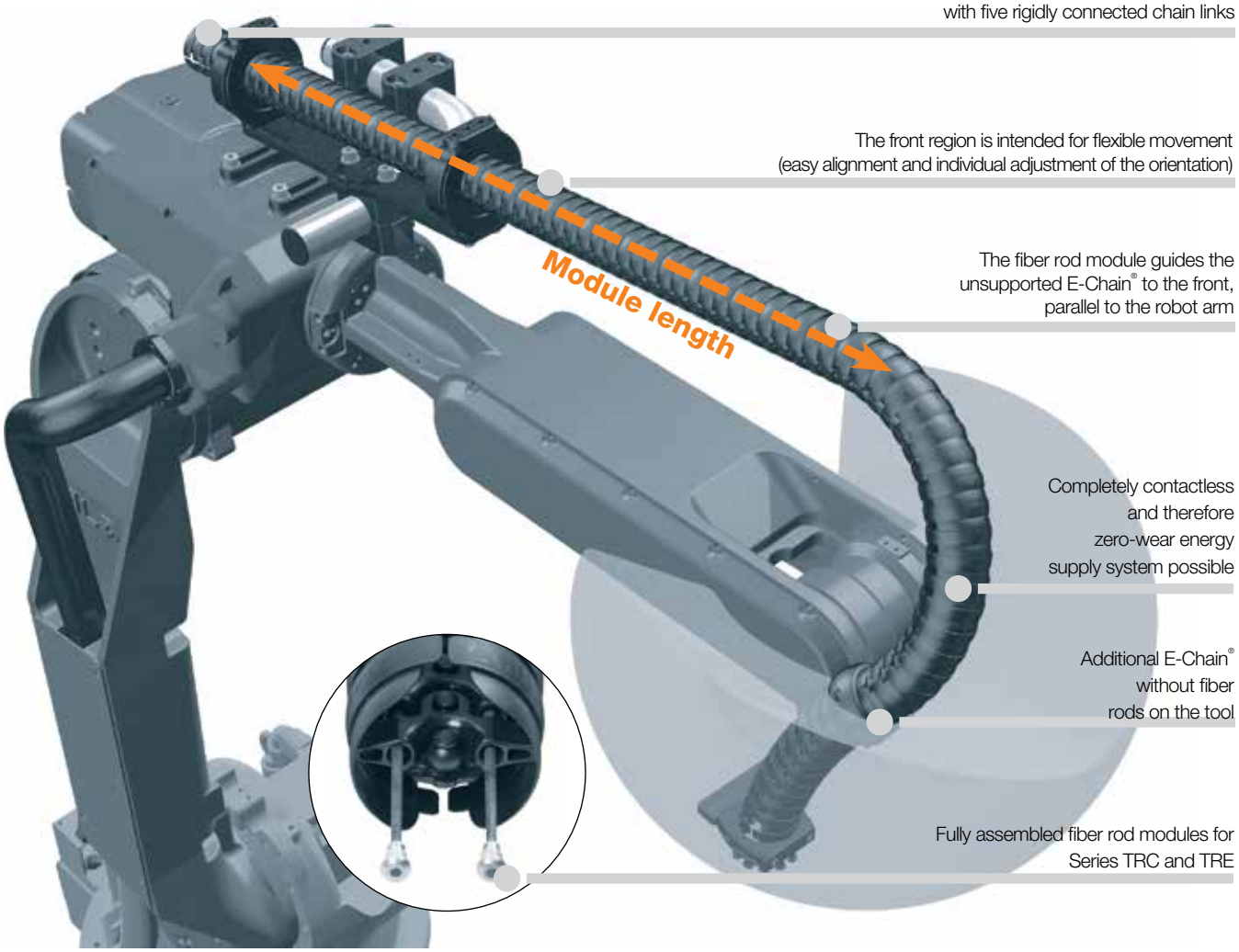
| Adapter bracket | Part No. | For manufacturer | Example for robot type | | Weight (lb) |
|---|---|---|---|---|---|
| | TR-911-220 | **Fanuc** | M-710iC 50<br>M-710iC 70 | | 4.4 |
| | TR-908-973 | **Fanuc** | M-710iB 45 | | 2.4 |
| | TR-907-270 | **Fanuc** | R-2000iB<br>R-2000iA<br>R-1000iA | S 430<br>S 420 | 9.9 |
| | TR-907-470-12 | **Fanuc** | M-900iA 260L<br>M-900iA 350 | | 15.0 |
| | TR-907-902-12 | **Fanuc** | M-900iA 600 | | 19.6 |
| | TR-910-876 | **Fanuc** | M900-IB700 | | 10.1 |
| | TR-907-599 | **Kuka** | KR5<br>KR5arc<br>KR6<br>KR16 | | 5.5 |
| | TR-908-113 | **Kuka** | KR-1000 | | 11.5 |
| | TR-908-014 | **Kuka** | KR 60 (HA)<br>KR 30 (HA) | | 9.5 |
| | TR-907-706 | **Reis** | RV30-26<br>RV10-16<br>RV20-16<br>RV60-16 | RV60-26<br>RV60-40<br>RV60-60<br>RV130 | 9.5 |
| | Spacer pin<br>TR-911-223 | **Kuka Series Quantec** | 4 piece kit | | 1.3 |

More adapeter brackets on request. CAD data online.

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® - Series Triflex® R
# Triflex® R Accessories - Fiber Rods

## Fiber rod modules and universal assembly kits




## Fiber rod modules for a directional camber of the E-Chain® - for TRC & TRE

We supply fully assembled fiber rod modules for Triflex® R E-Chain®, Series TRC and TRE. The integrated fiber rods generate a directional camber of the e-chain®. This system creates a unique choice of combinations for the energy supply system on manual axis of industrial robots. The fiber rod module guides the unsupported E-Chain® to the front, parallel to the robot arm. The bending properties of the modules depends on the installation orientation: only the front area is designed for flexible movement (accordingly, align with moving tool during assembly). The five rear chain links are rigidly connected and compensate the relative movement of the integrated fiber rods. A fully contactless and therefore zero-wear energy supply system can be realized, particularly for moderate movements with limited pivot motion of the axis. An additional E-Chain® without fiber rods for the hand area needs to be ordered separately.

Integrated fiber rods prevent loop formation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Product range - Fiber rods (Universal assembly kit below sold separately)

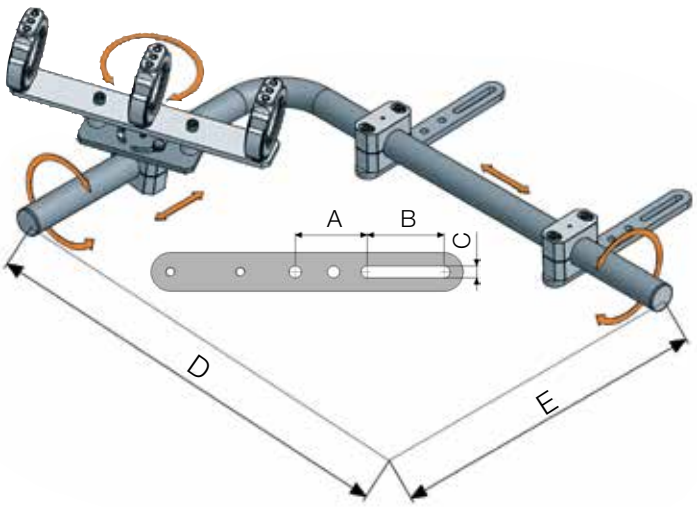
| Part- No- fiber rod modules for TRC / TRE | | Approx. length (m) |
|---|---|---|
| **TRC-40** | **TRE-40** | |
| TRCF.**40**.1000.1.0 | TREF.**40**.1000.1.0.B | 1.0 |
| TRCF.**40**.0900.1.0 | TREF.**40**.0900.1.0.B | 0.9 |
| TRCF.**40**.0800.1.0* | TREF.**40**.0800.1.0.B* | 0.8 |
| TRCF.**40**.0700.1.0 | TREF.**40**.0700.1.0.B | 0.7 |
| TRCF.**40**.0600.1.0 | TREF.**40**.0600.1.0.B | 0.6 |
| TRCF.**40**.0500.1.0 | TREF.**40**.0500.1.0.B | 0.5 |
| TRCF.**40**.0400.1.0 | TREF.**40**.0400.1.0.B | 0.4 |
| **TRC-60** | **TRE-60** | |
| TRCF.**60**.1400.1.0 | TREF.**60**.1400.1.0.B | 1.4 |
| TRCF.**60**.1200.1.0 | TREF.**60**.1200.1.0.B | 1.2 |
| TRCF.**60**.1000.1.0* | TREF.**60**.1000.1.0.B* | 1.0 |
| TRCF.**60**.0800.1.0 | TREF.**60**.0800.1.0.B | 0.8 |
| TRCF.**60**.0600.1.0 | TREF.**60**.0600.1.0.B | 0.6 |
| TRCF.**60**.0400.1.0 | TREF.**60**.0400.1.0.B | 0.4 |
| **TRC-70** | **TRE-70** | |
| TRCF.**70**.1800.1.0 | TREF.**70**.1800.1.0.B | 1.8 |
| TRCF.**70**.1600.1.0 | TREF.**70**.1600.1.0.B | 1.6 |
| TRCF.**70**.1400.1.0 | TREF.**70**.1400.1.0.B | 1.4 |
| TRCF.**70**.1200.1.0* | TREF.**70**.1200.1.0.B* | 1.2 |
| TRCF.**70**.1000.1.0 | TREF.**70**.1000.1.0.B | 1.0 |
| TRCF.**70**.0800.1.0 | TREF.**70**.0800.1.0.B | 0.8 |

| Part- No- fiber rod modules for TRC / TRE | | Approx. length (m) |
|---|---|---|
| **TRC-85** | **TRE-85** | |
| TRCF.**85**.2000.1.0 | TREF.**85**.2000.1.0.B | 2.0 |
| TRCF.**85**.1800.1.0 | TREF.**85**.1800.1.0.B | 1.8 |
| TRCF.**85**.1600.1.0 | TREF.**85**.1600.1.0.B* | 1.6 |
| TRCF.**85**.1400.1.0* | TREF.**85**.1400.1.0.B* | 1.4 |
| TRCF.**85**.1200.1.0 | TREF.**85**.1200.1.0.B | 1.2 |
| TRCF.**85**.1000.1.0 | TREF.**85**.1000.1.0.B | 1.0 |
| TRCF.**85**.0800.1.0 | TREF.**85**.0800.1.0.B | 0.8 |
| **TRC-100** | **TRE-100** | |
| TRCF.**100**.2000.1.0 | TREF.**100**.2000.1.0.B | 2.0 |
| TRCF.**100**.1800.1.0 | TREF.**100**.1800.1.0.B | 1.8 |
| TRCF.**100**.1600.1.0 | TREF.**100**.1600.1.0.B | 1.6 |
| TRCF.**100**.1400.1.0* | TREF.**100**.1400.1.0.B | 1.4 |
| TRCF.**100**.1200.1.0 | TREF.**100**.1200.1.0.B | 1.2 |
| TRCF.**100**.1000.1.0 | TREF.**100**.1000.1.0.B | 1.0 |
| **TRC-125** | **TRE-125** | |
| TRCF.**125**.2000.1.0 | TREF.**125**.2000.1.0.C | 2.0 |
| TRCF.**125**.1800.1.0 | TREF.**125**.1800.1.0.C | 1.8 |
| TRCF.**125**.1600.1.0 | TREF.**125**.1600.1.0.C* | 1.6 |
| TRCF.**125**.1400.1.0* | TREF.**125**.1400.1.0.C* | 1.4 |
| TRCF.**125**.1200.1.0 | TREF.**125**.1200.1.0.C | 1.2 |
| TRCF.**125**.1000.1.0 | TREF.**125**.1000.1.0.C | 1.0 |

***Maximum recommended length for fiber rod modules**

## Universal assembly kit - for TRC, TRE

Stainless steel angle tube with attachment brackets and module retainer. Freely positionable. The energy supply system can be quickly and easily adapted to the new programming sequences of the robot. Sizes 40 / 60 with 2 mounting brackets - with 3 mounting brackets starting at size 70



Assembly example on axis 3 (of the robot)

### Product range - Universal mounting kit

| For Series ø | | Part No. | A (mm) | B (mm) | D (mm) | E (mm) | C (mm) | Weight (lb) |
|---|---|---|---|---|---|---|---|---|
| 40- | ➤ | **TR-40-80** | 40 | 30 | 475 | 325 | 8.4 | 7.9 |
| 60- | ➤ | **TR-60-80** | 40 | 30 | 475 | 325 | 8.4 | 9.5 |
| 70- | ➤ | **TR-70-80** | 75 | 80 | 875 | 575 | 12.5 | 13.0 |
| 85- | ➤ | **TR-85-80** | 75 | 80 | 875 | 575 | 12.5 | 13.9 |
| 100- | ➤ | **TR-100-80** | 75 | 80 | 875 | 575 | 12.5 | 6.3 |

Size index 123 available upon request.

# E-Chain System® - Series Triflex® R
## Triflex® R - Selection and Filling

Space-saving integrated strain relief at the connection point

When filling Triflex® R, sufficient clearance needs to be provided for all electric cables, pneumatic and media hoses, in order to compensate for forces from relative motion between the cables and hoses.

As a rule of thumb, the following values apply:

- The total of cable/hose diameters must not exceed 60% of the total cross section of their Triflex® R component.
- A clearance of at least 10% (min. 1 mm) between any two cables/hoses
- Cables/hoses need to be able to move freely inside the Triflex® R.

Please refer to the chart on this page for an overview of available cross sections for Triflex® R.

### Example:
### Cross Section Calculation

$$A_{conduit} = \frac{d^2 \times \pi}{4}$$

Examples:

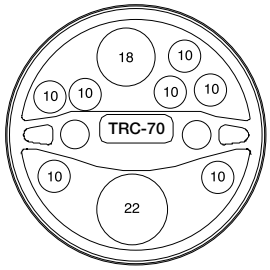
$A_1$ = 10 mm x 10 mm x π/4
= 78.5 mm² x 7 (number of conduits)
= 549.50 mm²

$A_2$ = 18 mm x 18 mm x π/4
= 254.34 mm²

$A_3$ = 22 mm x 22 mm x π/4
= 379.94 mm²

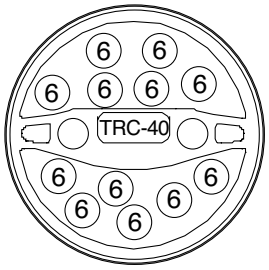
$A_{conduit} = A_1 + A_2 + A_3 = 1183.7$ mm²

### Filling Example: TRC-70




The smaller the relation between usable cross section and the total of cable/hose diameters, the less the stress of the cables.

### Filling Example: TRC-40




| Series | Usable Cross Section |
|---|---|
| TRC/TRE-30 | .48 inch² (313.0 mm²) |
| TRC/TRE-40 | .78 inch² (508.0 mm²) |
| TRC/TRE-60 | 1.77 inch² (1144.6 mm²) |
| TRC/TRE-70 | 2.77 inch² (1788.0 mm²) |
| TRC/TRE-85 | 3.77 inch² (2431.0 mm²) |
| TRC/TRE-100 | 4.92 inch² (3177.0 mm²) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Customer-specific special cable for robotic and torsion applications

- Control, motor, servo, bus and data cables
- Shielded and unshielded
- Outer jacket material: PVC, PUR, TPE
- Torsion area according to requirement
- Sectors: Robotic and 3D applications

The service life of cables in torsion applications depend disproportionately on the exact progression of the angle of torsion and the cable length of the exact application. As a single test facility is often insufficient, Chainflex® cables are tested on various constructional systems. Your torsion cables are tested as realistic as possible for your application. For this purpose, igus® uses up to 8 different test facilities in the in-house laboratory.

## Torsionable Chainflex® robotic cables for +/-180° angle of twist per meter length

**Chainflex® CFROBOT9 - PUR-Hybrid cable, torsionable**

**Chainflex® CFROBOT8 - PUR-Bus cable, torsionable**

**Chainflex® CFROBOT6 - PUR-Motor cable, torsionable**

**Chainflex® CFROBOT7 - PUR-Motor cable, torsionable, shielded**

**Chainflex® CFROBOT5 - TPE-Fiber optic cable, torsionable**

**Chainflex® CFROBOT - Single-core TPE robotic cable**

## Triflex® R - Tests in the igus® lab

**Testing facility at the igus® laboratory**

**Torsion test of CF-ROBOT**

## Triflex® R - Chainflex® Robot Cable Package

**Robot cables and other conduits are delivered as harnessed kits.**

Triflex® R - ReadyChain® - Chainflex® cable/hose Packages
Turnkey harnessed ReadyChain® cable and hose packages, equipped with Chainflex® cables for use on robots. Delivered complete with cables, hoses, connectors and accessories. ReadyChain® minimizes setup time and reduces downtime. Cable and hose packages for robotic applications can be customized with Chainflex® products or other special items. Robot cables and other conduits are delivered as complete harnessed systems.
Under the igus® CFRobot range, control, data, servo- and motor cables are available.

# E-Chain System® - Series Triflex® R
# Application Examples

igus® E-Chain System®

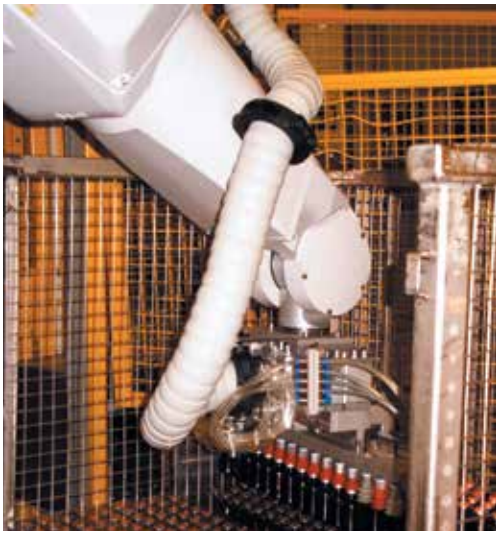
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

TRC-100-145-0 with cable handling package

Handling robot for the glass industry

Laser cutting machine

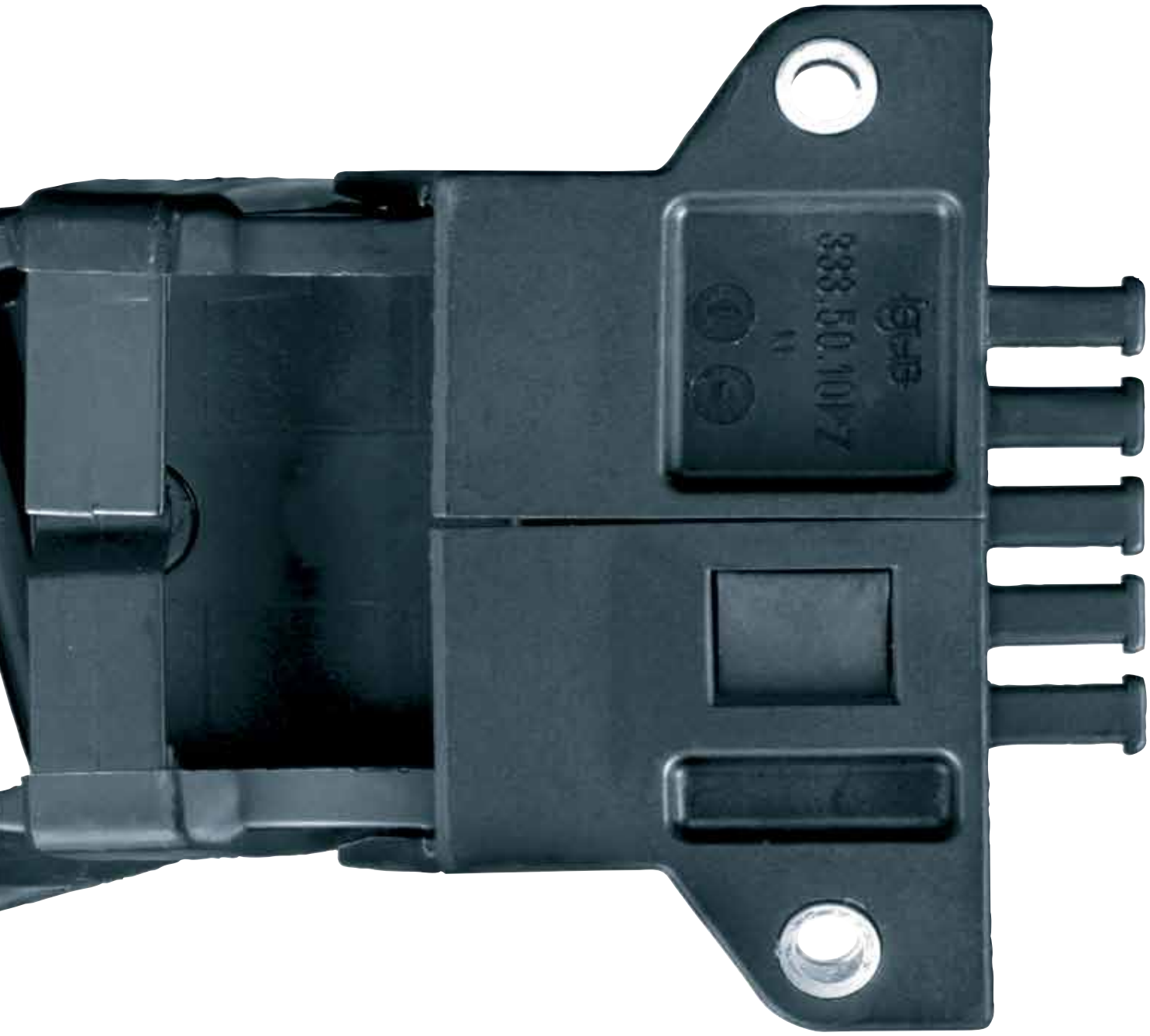


Triflex® R in the pharmaceutical industry

igus® E2 E-Tube and Triflex® R in a processing machine

igus® System E6 and Triflex® R TRE in a Y/Z-gantry

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



igus®

# E-Z Triflex®

# E-Z Triflex® - for 2D and 3D movements, easy access to cable from both sides

The Triflex® series has been developed to safely guide cables through a 3D movement. With E-Z Triflex®, the installation of cables and hoses is easy. Cables can be inserted into the E-Chain® from the top or bottom through an opening along the length of the chain. The unique modular design of Triflex® enables very complex movements through all three axes.

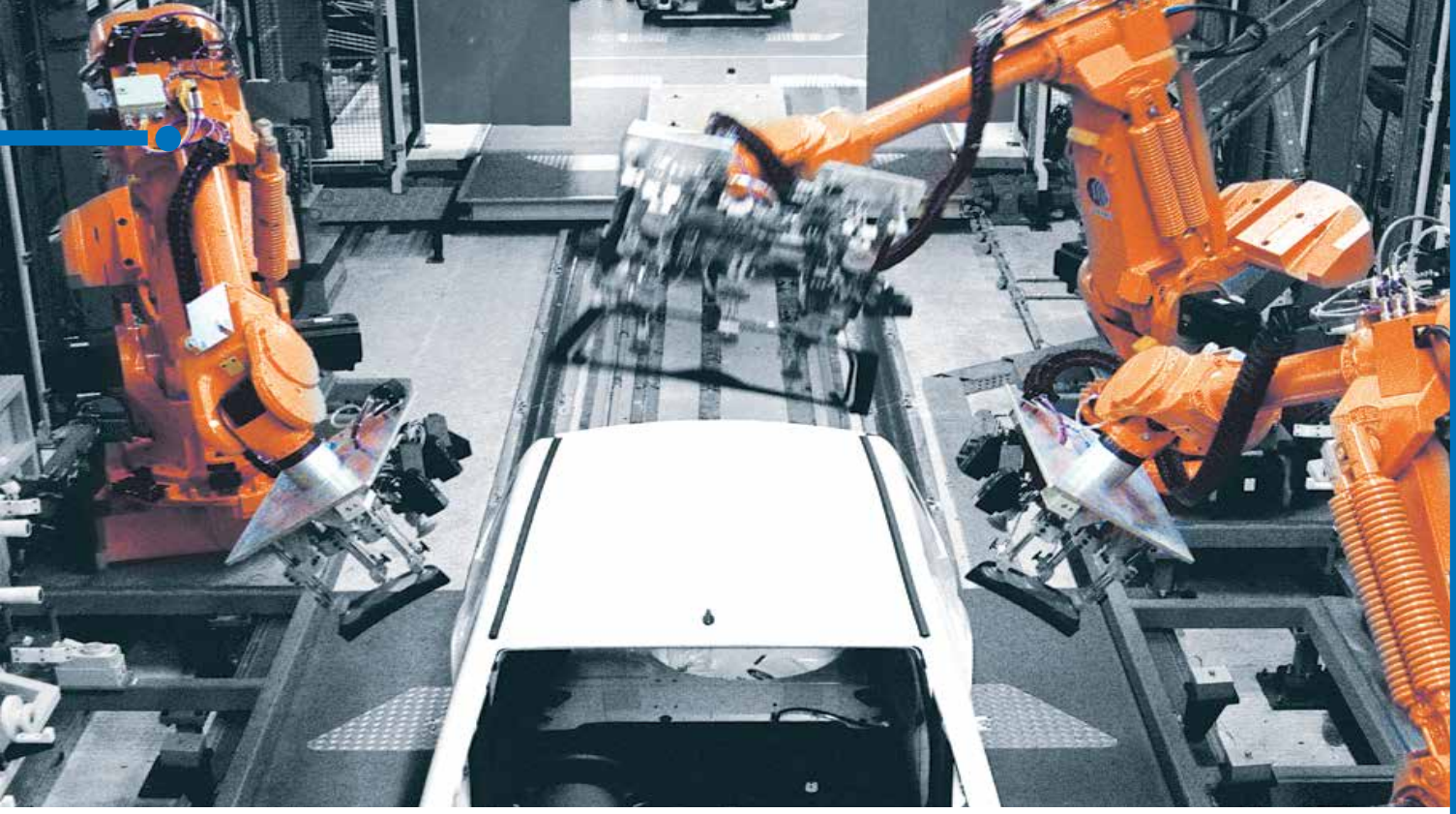
**Typical industries and applications**

- Machine Tools
- Robots
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- General machinery
- Medical equipment

iF-Design awards for Easy Triflex®-design

Torsional motion possible

UL94-V2 classifications



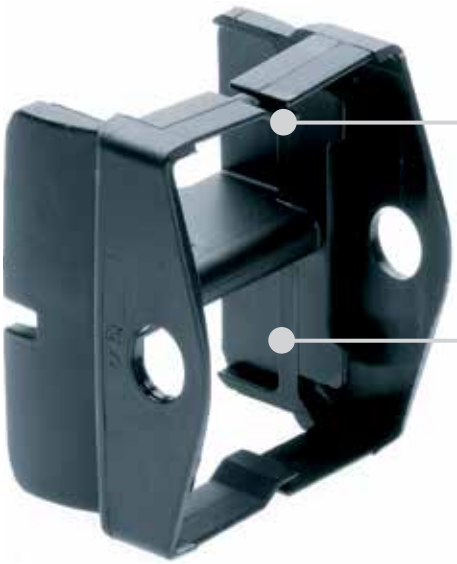
Robots with igus® E-Z Triflex® E-Chains® on an assembly line

E-Z Triflex® E-Chains® for multi-dimensional movements on a production line

E-Z Triflex® E-Chains® also for easy applications - here an aesthetic application

## E-Z Triflex® - The Solution for Your Office

Dangling lines are risky and unaesthetic. The new solution: E-Z Triflex® and Triflex® E-Chains® with special connector elements for your desk. They offer reliable, movable and elegant protection for lines, are quickly installed and are available in many variations. Naturally they can be installed at any time as retrofits. Simply press the lines from two sides. This is possible at any point desired.




## Select this modular E-Chain System® for:

- 3-axis motions in all kinds of machinery
- Some robotics applications
- Very fast cable assembly with “E-Z” design
- Simple filling from two sides
- Where rectangular shapes fit better
- Combination of different bending radii and movement directions
- Lengthen and shorten anywhere
- KMA mounting brackets with integrated strain relief
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Selection table

### Single-axis and double-axis movement:

| Series | Inner Height *Bi 1/Bi 2* | | Inner Width *Bi 3* | | Outer height/Outer Width ☐ *Ba* | | Bending Radii *R* | |
|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E331-25** | .51 | (13) | .98 | (25) | 1.34 | (34) | 1.89 - 7.87 | (048 - 200) |
| **E331-32** | .69 | (17.5) | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **E331-50** | 1.02 | (26) | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **E331-75** | 1.52 | (38.5) | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

### Single-axis and double-axis movement:

| Series | Inner Height *Bi 1/Bi 2* | | Inner Width *Bi 3* | | Outer height/Outer Width ☐ *Ba* | | Bending Radii *R* | |
|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E332-25** | .51 | (13) | .98 | (25) | 1.34 | (34) | 1.89 - 7.87 | (048 - 200) |
| **E332-32** | .69 | (17.5) | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **E332-50** | 1.02 | (26) | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **E332-75** | 1.52 | (38.5) | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

### Triple-axis movement

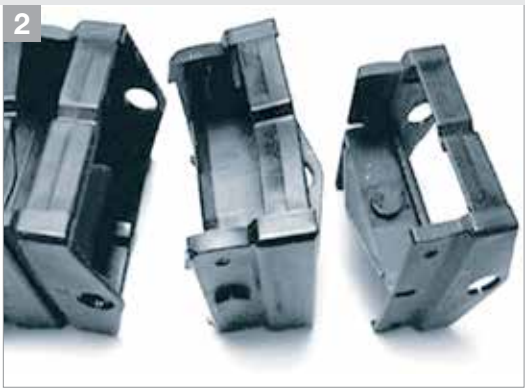
| Series | Inner Height *Bi 1/Bi 2* | | Inner Width *Bi 3* | | Outer height/Outer Width ☐ *Ba* | | Bending Radii *R* | |
|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **E333-25** | .51 | (13) | .98 | (25) | 1.34 | (34) | 1.89 - 7.87 | (048 - 200) |
| **E333-32** | .69 | (17.5) | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **E333-50** | 1.02 | (26) | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **E333-75** | 1.52 | (38.5) | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

## E-Z Triflex® Series - Assembling

1

Twist and snap in

2



Shorten and lengthen
at any given point

## E-Z Triflex® Series - Separating

1

Lever the E-Z Triflex®
side link with screwdriver

2

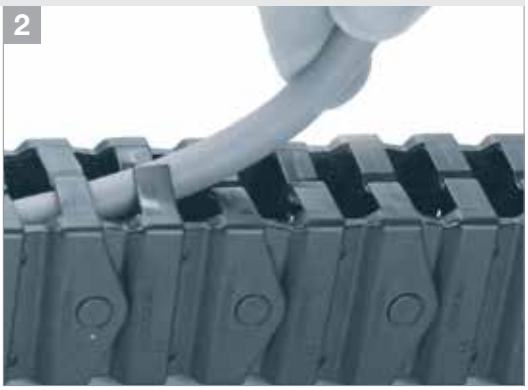
Twist and separate - For Series E333
you have to separate the “middle” pin

## E-Z Triflex® Series - Filling

1

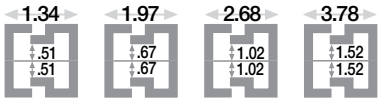
Easy to fill - simply press cables in...

2



...and easy to take the cables out

# E-Chain System®
# E-Z Triflex® Series




## Price Index

Flammability Class
VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

## Assembly Tips

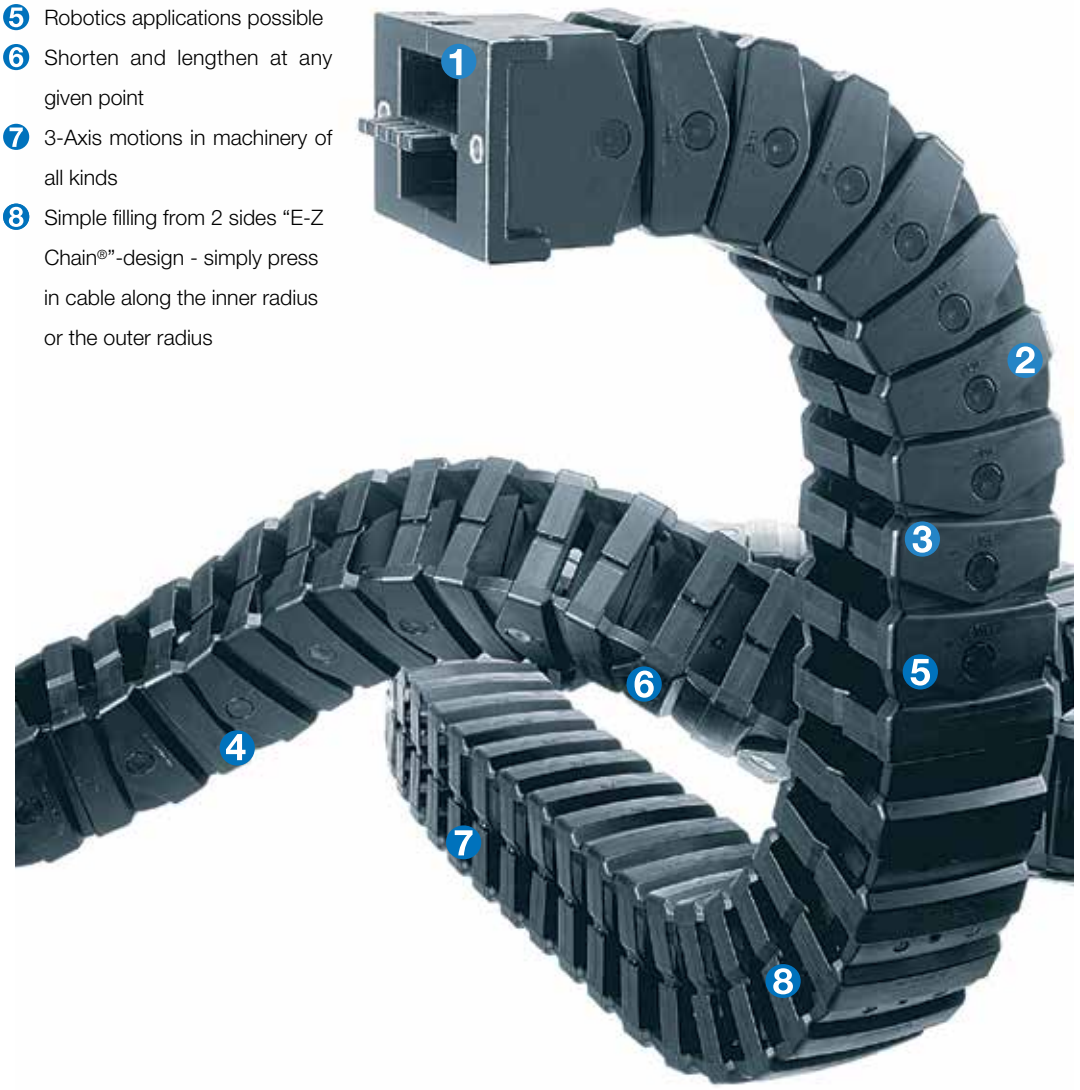
Easy to fill - simply press cables in

- If simple cable installation is required with complex movements
- If simple cable installation from both sides with complex movements is required
- For repair and supplementation of existing Triflex® Systems

- For circular movements with high loads
  ➤ TwisterChain® System, from **Chapter 8**
- If chip protection is necessary
  ➤ Triflex® System, from **Chapter 8**

## Features & Benefits

1. KMA split-open mounting bracket with integrated strain relief
2. Patented “push-button-design”
3. iF-Design Award Winner
4. Different bending radii and directions can be combined
5. Robotics applications possible
6. Shorten and lengthen at any given point
7. 3-Axis motions in machinery of all kinds
8. Simple filling from 2 sides “E-Z Chain®”-design - simply press in cable along the inner radius or the outer radius




## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

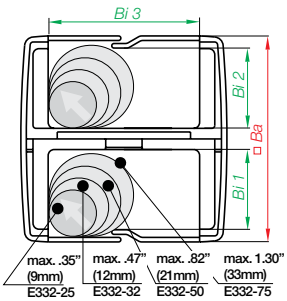
| | |
|---|---|
| 6.56 ft (2 m) **E333-50-100/100-0** | **E-Chain®** |
| 1 Set **333-50-12PZ** | **Mounting Bracket** |

## Technical Data

| | |
|---|---|
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

Details of material properties
➤ **Chapter 1**

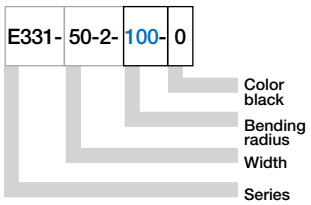
## Single Axis Movement, Series E331



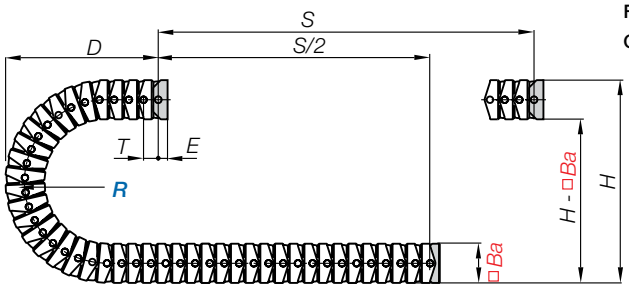
| Part No. | Bi 1 | Bi 2 | Bi 3 | □ Ba |
|---|---|---|---|---|
| E331-25-2-[ ]-0 | .51 (13) | .51 (13) | .98 (25) | 1.34 (34) |
| E331-32-2-[ ]-0 | .69 (17.5) | .69 (17.5) | 1.26 (32) | 1.97 (50) |
| E331-50-2-[ ]-0 | 1.02 (26) | 1.02 (26) | 1.97 (50) | 2.68 (68) |
| E331-75-2-[ ]-0 | 1.52 (38.5) | 1.52 (38.5) | 2.95 (75) | 3.78 (96) |

Supplement part number with required radius from below
for example E331-50-2-[100]-0

Part No. structure




## Installation dimensions for single-axis movement




For center mount applications:
Chain length = $_{S}/_{2}$ + K

**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
*K* = π • *R* + *"safety buffer"*

### Series E331-25-2-[XXX]-0

| R | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) |
|---|---|---|---|---|---|---|---|
| H | 5.12 (130) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.15 (385) | 17.13 (435) |
| D | 3.74 (95) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| K | 7.68 (195) | 11.02 (280) | 14.17 (360) | 17.32 (440) | 20.28 (515) | 23.43 (595) | 26.57 (675) |

**Pitch =** .57 (14.5 mm)
**Links/ft (m) =** 21.03 (69)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.34 (34 mm)

### Series E331-32-2-[XXX]-0

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.12 (130) | 6.10 (155) | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) |
| K | 12.01 (305) | 15.15 (385) | 18.30 (465) | 21.46 (545) | 27.56 (700) | 34.06 (865) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series E331-50-2-[XXX]-0

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 17.13 (435) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series E331-75-2-[XXX]-0

| R | 5.51 (140) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|
| H | 14.96 (380) | 17.71 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| D | 9.45 (240) | 10.83 (275) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 21.65 (550) | 25.98 (660) | 29.13 (740) | 35.43 (900) | 41.73 (1060) |

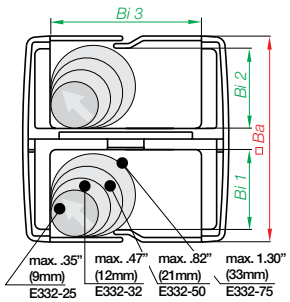
**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# E-Z Triflex® Series - Double Axis Movement

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

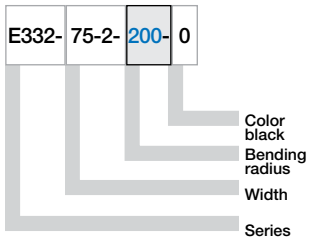
## Double Axis Movement, Series E332



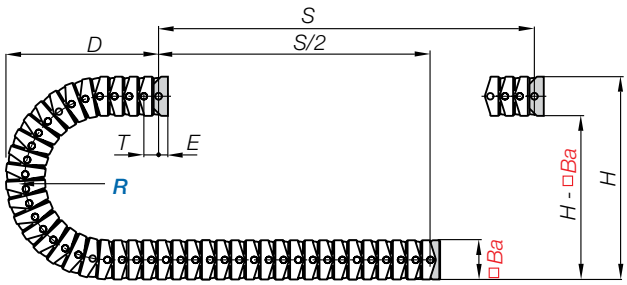
| Part No. | Bi 1 | Bi 2 | Bi 3 | □ Ba |
|---|---|---|---|---|
| E332-25-2-[ ]-0 | .51 (13) | .51 (13) | .98 (25) | 1.34 (34) |
| E332-32-2-[ ]-0 | .69 (17.5) | .69 (17.5) | 1.26 (32) | 1.97 (50) |
| E332-50-2-[ ]-0 | 1.02 (26) | 1.02 (26) | 1.97 (50) | 2.68 (68) |
| E332-75-2-[ ]-0 | 1.52 (38.5) | 1.52 (38.5) | 2.95 (75) | 3.78 (96) |

Supplement part number with required radius from below
for example, E332-75-2-[200]-0

Part No. structure




## Installation dimensions for double-axis movement




For center mount applications:
Chain length = $_{S}/_{2}$ + K

**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *"safety buffer"*

### Series E332-25-2-[XXX]-0

| R | 1.89 (048) | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) |
|---|---|---|---|---|---|---|---|
| H | 5.12 (130) | 7.28 (185) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.15 (385) | 17.13 (435) |
| D | 3.74 (95) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| K | 7.68 (195) | 11.02 (280) | 14.17 (360) | 17.32 (440) | 20.28 (515) | 23.43 (595) | 26.57 (675) |

**Pitch =** .57 (14.5 mm)
**Links/ft (m) =** 21.03 (69)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.34 (34 mm)

### Series E332-32-2-[XXX]-0

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.12 (130) | 6.10 (155) | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) |
| K | 12.01 (305) | 15.15 (385) | 18.30 (465) | 21.46 (545) | 27.56 (700) | 34.06 (865) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series E332-50-2-[XXX]-0

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 17.13 (435) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

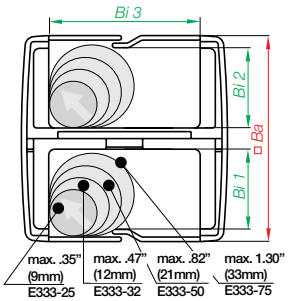
**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series E332-75-2-[XXX]-0

| R | 5.51 (140) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|
| H | 14.96 (380) | 17.71 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| D | 9.45 (240) | 10.83 (275) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 21.65 (550) | 25.98 (660) | 29.13 (740) | 35.43 (900) | 41.73 (1060) |

**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

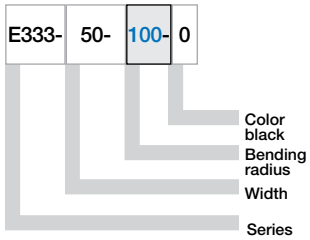
## Triple Axis Movement, Series E333



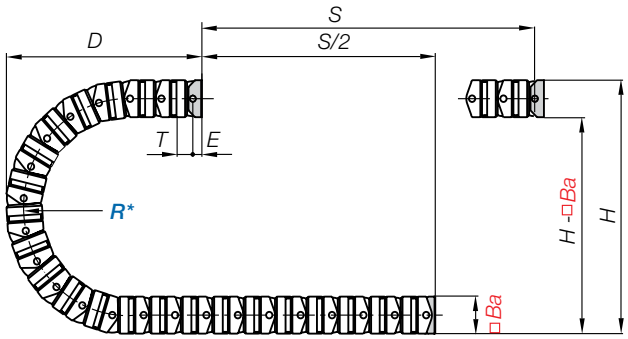
| Part No. | Bi 1 | Bi 2 | Bi 3 | □ Ba |
|---|---|---|---|---|
| E333-25-□-0 | .51 (13) | .51 (13) | .98 (25) | 1.34 (34) |
| E333-32-□-0 | .69 (17.5) | .69 (17.5) | 1.26 (32) | 1.97 (50) |
| E333-50-□-0 | 1.02 (26) | 1.02 (26) | 1.97 (50) | 2.68 (68) |
| E333-75-□-0 | 1.52 (38.5) | 1.52 (38.5) | 2.95 (75) | 3.78 (96) |

Supplement part number with required radius from above
for example, E333-32-100-0

Part No. structure




## Installation dimensions for triple-axis movement




**For center mount applications:**
**Chain length =** $_{S}/_{2}$ + K

* The bending radii are doubled in the case of the **Series E333** E-Chain®

**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *"safety buffer"*

### Series E333-25-XXX -0

| R | 3.78 (096) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
|---|---|---|---|---|---|---|---|
| H | 9.06 (230) | 13.19 (335) | 17.13 (435) | 21.06 (535) | 25.00 (635) | 28.94 (735) | 32.87 (835) |
| D | 5.71 (145) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) |
| K | 13.78 (350) | 20.28 (515) | 26.57 (675) | 32.68 (830) | 38.98 (990) | 45.28 (1150) | 51.18 (1300) |

**Pitch =** .57 (14.5 mm)
**Links/ft (m) =** 21.03 (69)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.34 (34 mm)

### Series E333-32-XXX -0

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|---|
| H | 13.78 (350) | 17.72 (450) | 21.65 (550) | 25.59 (650) | 33.46 (850) | 41.33 (1050) |
| D | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 17.91 (455) | 21.85 (555) |
| K | 21.46 (545) | 27.56 (700) | 33.86 (860) | 40.16 (1020) | 51.18 (1300) | 63.19 (1605) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series E333-50-XXX -0

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|
| H | 18.50 (470) | 22.44 (570) | 26.38 (670) | 34.25 (870) | 42.13 (1070) |
| D | 11.61 (295) | 13.58 (345) | 15.55 (395) | 19.49 (495) | 23.42 (595) |
| K | 29.53 (750) | 35.83 (910) | 42.13 (1070) | 54.33 (1380) | 66.54 (1690) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series E333-75-XXX -0

| R | 11.02 (280) | 13.78 (350) | 15.75 (400) | 19.69 (500) | 23.62 (600) |
|---|---|---|---|---|---|
| H | 25.98 (660) | 31.50 (800) | 35.43 (900) | 43.31 (1100) | 51.18 (1300) |
| D | 14.96 (380) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| K | 38.98 (990) | 47.64 (1210) | 55.12 (1400) | 66.93 (1700) | 78.74 (2000) |

**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# E-Z Triflex® Series



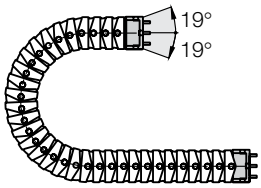
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Mounting Brackets

### Option 1: KMA

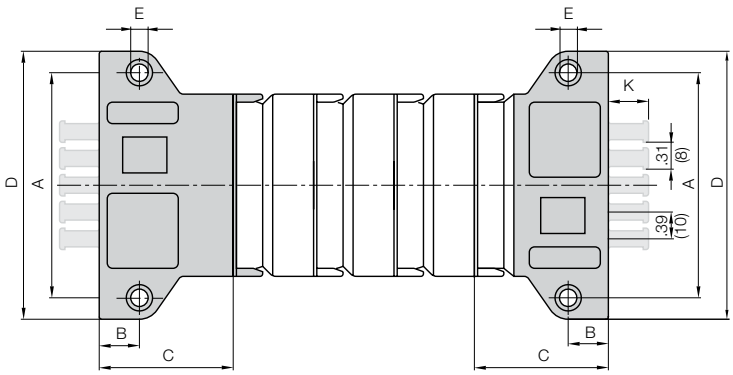
- Corrosion resistant
- Strain relief with tiewrap plate




**333-50-1PZB**
**Moving end**
with tiewrap plate

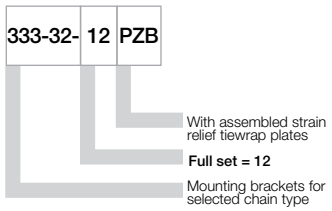
**333-50-2PZB**
**Fixed end**
(with tiewrap plate **333-50-ZB**)

**333-50-1PZ** **333-50-2PZB**




**For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.**

**Part No. structure**




**Full set, for both ends:**
333- 32-12 PZB +tiewrap plate

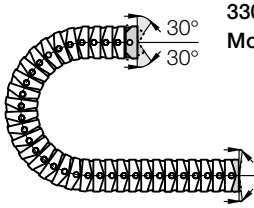
**Single-part order:**
333- 32- 1 PZB +tiewrap plate
Mounting bracket **with bore**
333- 32- 2 PZB +tiewrap plate
Mounting bracket **with pin**

| Series | Part No. without tie-wrap plate | Part No. with tie-wrap plate | A | B | C | D | E | K | N No. of Teeth |
|---|---|---|---|---|---|---|---|---|---|
| E331-25/E332-25-2/E333-25 | 333-25-12PZ | 333-25-12PZB | 1.69 (43) | .28 (7) | .87 (22) | 2.04 (52) | .18 (4.5) | – | – |
| E331-32/E332-32-2/E333-32 | 333-32-12PZ | 333-32-12PZB | 2.60 (66) | .59 (15) | 1.81 (46) | 3.23 (82) | .26 (6.5) | .59 (15) | 3 |
| E331-50/E332-50-2/E333-50 | 333-50-12PZ | 333-50-12PZB | 3.31 (84) | .59 (15) | 1.97 (50) | 3.94 (100) | .26 (6.5) | .59 (15) | 5 |
| E331-75/E332-75-2/E333-75 | 333-75-12PZ | 333-75-12PZB | 4.29 (109) | .59 (15) | 2.17 (55) | 4.92 (125) | .26 (6.5) | .59 (15) | 7 |

## Mounting Brackets

### Option 2: flange

- Galvanized steel
- Electrically conductive
- Flush mounting

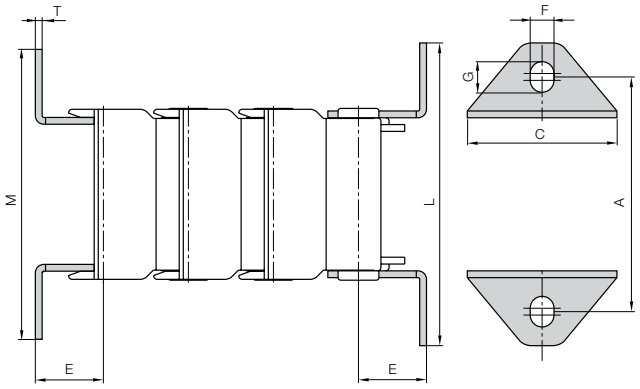



330-25-1 – 330-75-1
Moving end

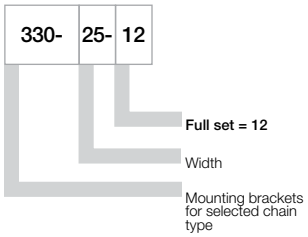
330-25-2 – 330-75-2
Fixed end

330-25-2 – 330-75-2

330-25-1 – 330-75-1




Part No. structure

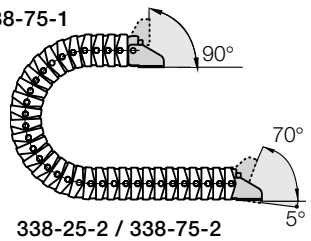



Full set, 4 parts
2 with pin / 2 with bore:
330-25-12
Single-part order:
330-25-1
Mounting bracket **with bore**
330-25-2
Mounting bracket **with pin**

| Series | Part No. | A | M | C | L | T | E | F | G |
|---|---|---|---|---|---|---|---|---|---|
| E331-25/E332-25-2 /E333-25 | 330-25-12 | 1.73 (44) | 2.17 (55) | 1.14 (29) | 2.17 (55) | .06 (1.5) | .41 (10.5) | .26 (6.5) | .35 (9) |
| E331-32/E332-32-2 /E333-32 | 330-32-12 | 2.60 (66) | 3.31 (84) | 1.73 (44) | 3.46 (88) | .08 (2) | .79 (20) | .28 (7) | .35 (9) |
| E332-50/E332-50-2 /E333-50 | 330-50-12 | 3.31 (84) | 4.02 (102) | 2.44 (62) | 4.17 (106) | .08 (2) | .98 (25) | .28 (7) | .35 (9) |
| E331-75/E332-75-2 /E333-75 | 330-75-12 | 4.29 (109) | 5.00 (127) | 3.54 (90) | 5.16 (131) | .08 (2) | .98 (25) | .28 (7) | .35 (9) |

### Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine

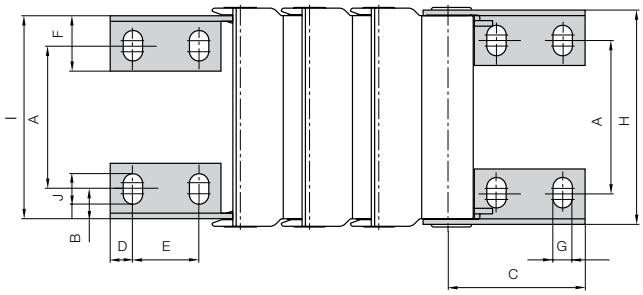



338-25-1/ 338-75-1
Moving end

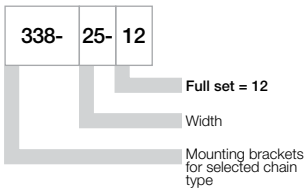
338-25-2 / 338-75-2
Fixed end

338-25-2 / 338-75-2

338-25-1 / 338-75-1




Part No. structure




Full set, 4 parts
2 with pin / 2 with bore:
338-25-12
Single-part order:
338-25-1
Mounting bracket **with bore**
338-25-2
Mounting bracket **with pin**

| Series | Part No. | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|---|
| E331-25/E332-25-2/E333-25 | 338-25-12 | .67 (17) | .25 (6.25) | 1.10 (28) | .24 (6) | .63 (16) | .55 (14) | .22 (5.5) | 1.33 (33.8) | 1.22 (31) | .33 (8.5) |
| E331-25/E332-32-2/E333-32 | 338-32-12 | .94 (24) | .22 (5.5) | 1.85 (47) | .31 (8) | .94 (24) | .79 (20) | .28 (7) | 1.93 (49) | 1.77 (45) | .43 (11) |
| E331-25/E332-50-2/E333-50 | 338-50-12 | 1.65 (42) | .22 (5.5) | 3.03 (77) | .47 (12) | 1.38 (35) | .94 (24) | .35 (9) | 2.64 (67) | 2.44 (62) | .59 (15) |
| E331-25/E332-75-2/E333-75 | 338-75-12 | 2.56 (65) | .22 (5.5) | 3.03 (77) | .47 (12) | 1.38 (35) | .94 (24) | .35 (9) | 3.74 (95) | 3.54 (90) | .59 (15) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# igus®
# Triflex®

# Triflex® - fully enclosed, for 2D and 3D applications

The Triflex® series has been developed to safely guide cables during a 3D movement. In this case, the flexibility of a hose is combined with the stability of an E-Chain® with a fixed, defined radius. This unique modular range enables very complex movements. As example: Combination of chain links moving in single, double and triple axes in an E-Chain®.

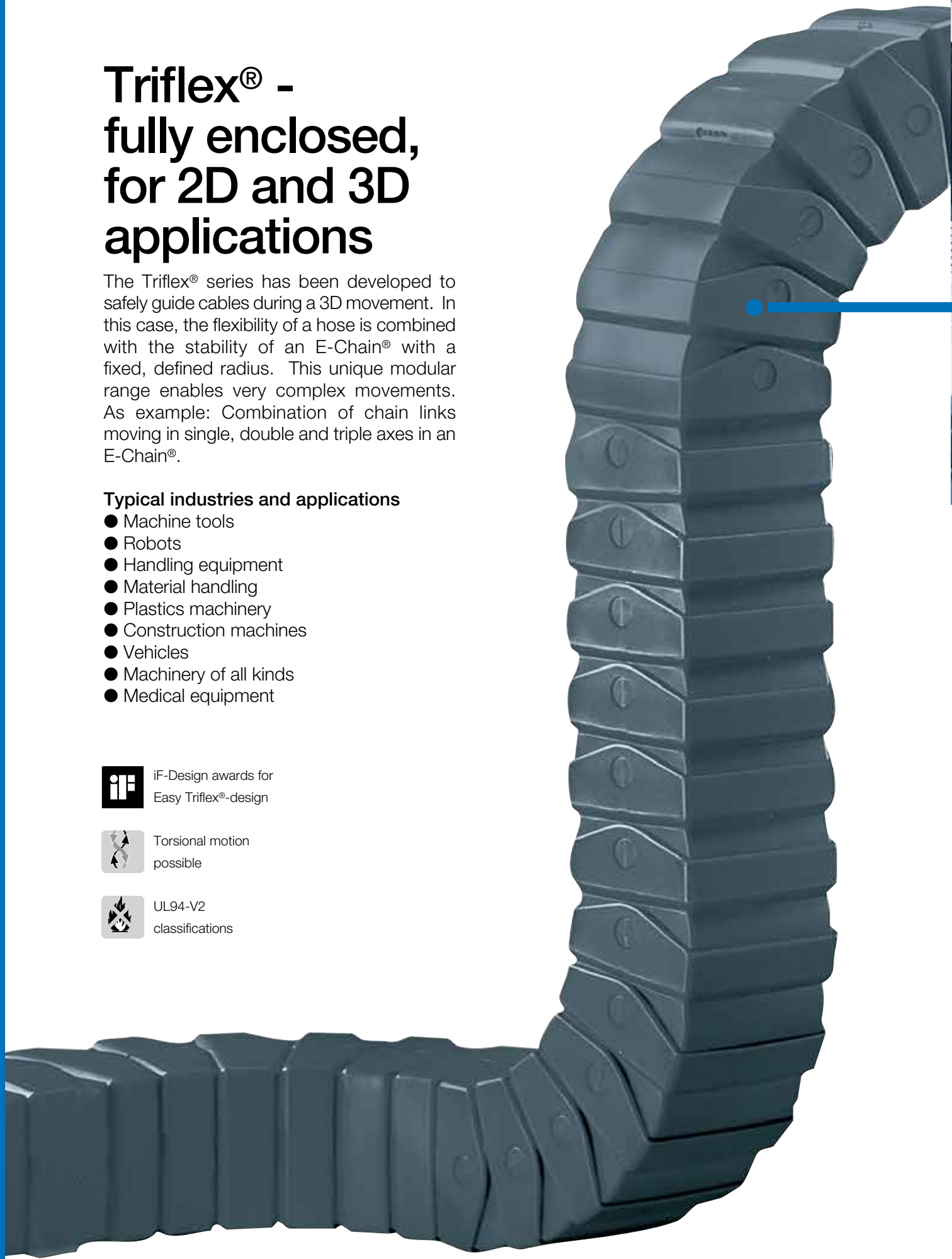
**Typical industries and applications**

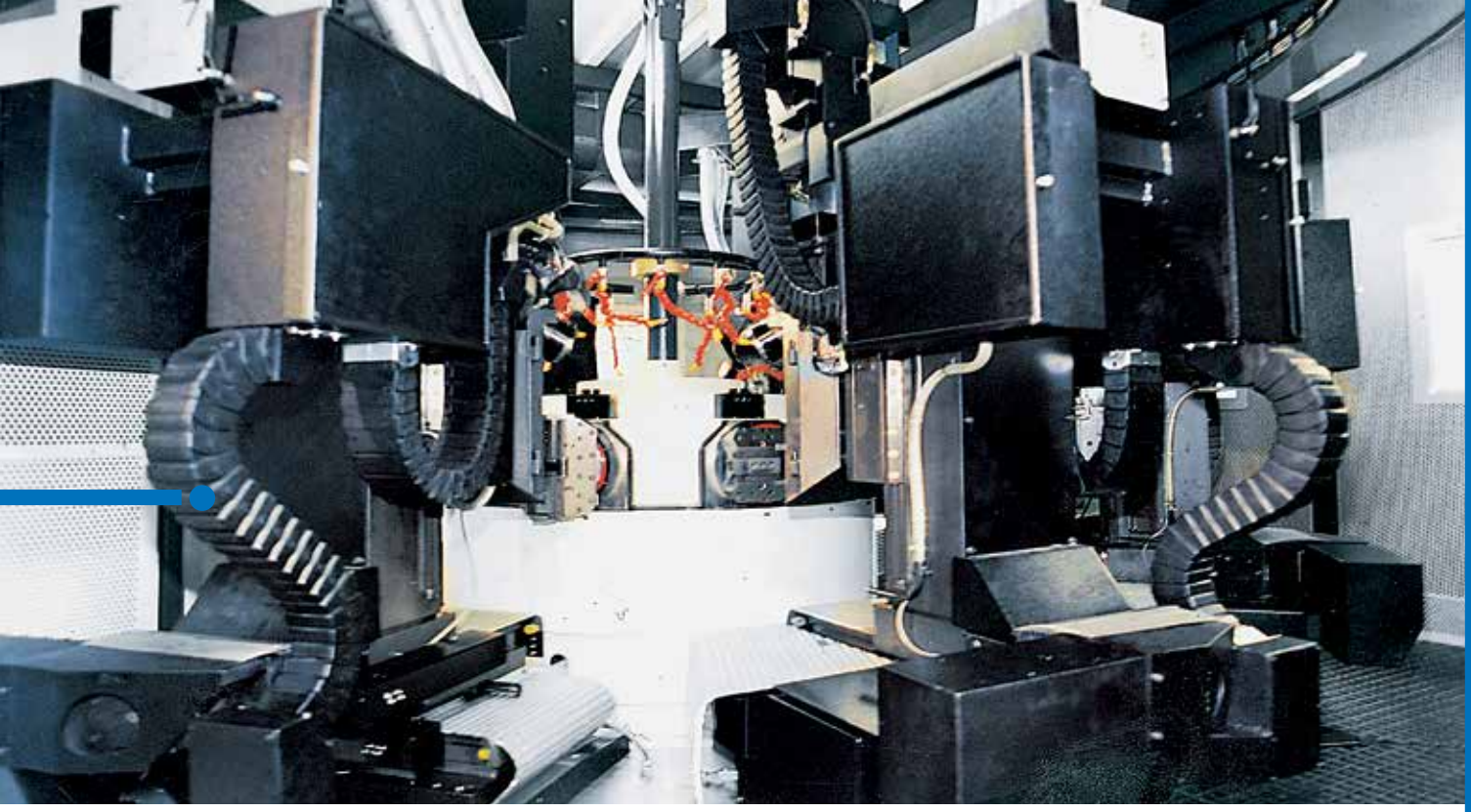
- Machine tools
- Robots
- Handling equipment
- Material handling
- Plastics machinery
- Construction machines
- Vehicles
- Machinery of all kinds
- Medical equipment

iF-Design awards for Easy Triflex®-design

Torsional motion possible

UL94-V2 classifications



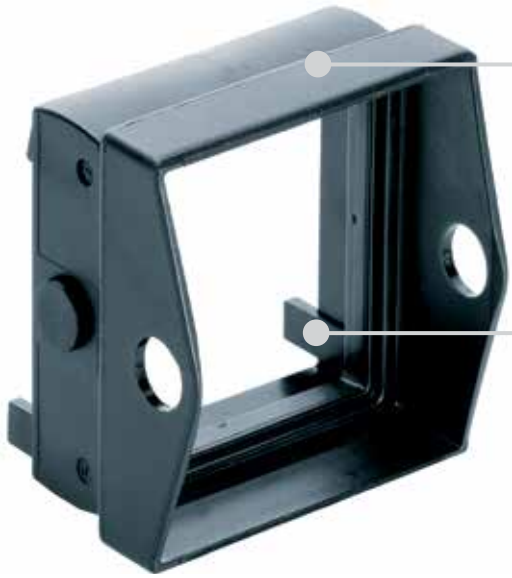


Various Triflex® tubes on the inside of a machining center

Triflex® for 3 movement directions combined
with Triflex® for 1 movement direction

Triflex® 332 as unsupported link
from machines to control desk

# E-Chain System®
# Triflex® Series
# Selection Guide




## Select this modular, robust, Energy chain system® for:

- 3-axis motions in machinery of all kinds
- Dirty environments
- High tensile strength
- Where rectangular shapes fit better
- Side-mounted unsupported
- Completely enclosed - protection against dirt and chips
- Combinations of varying bending radii and moving axes
- Connecting and separating possible at every link
- Flanged mounting brackets or mounting brackets angle, galvanized steel
- Series 352 and 353 snap-open
- Combination Series 353/333 possible
- Cost-effective design for complex movements
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, Chapter 1**

## Selection table

### Single-axis movement:

| Series | Inner height/Inner width ☐ *Bi* | | Outer width/Outer height ☐ *Ba* | | Bending radii *R* | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) |
| **331-16** | .63 | (16) | 1.02 | (26) | 1.50 - 3.94 | (038 - 100) |
| **331-32** | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **331-50** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **331-75** | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

### Double-axis movement:

| Series | Inner height/Inner width ☐ *Bi* | | Outer width/Outer height ☐ *Ba* | | Bending radii *R* | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) |
| **332-16** | .63 | (16) | 1.02 | (26) | 1.50 - 3.94 | (038 - 100) |
| **332-32** | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **332-50** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **332-75** | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

### Triple-axis movement:

| Series | Inner height/Inner width ☐ *Bi* | | Outer width/Outer height ☐ *Ba* | | Bending radii *R* | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) |
| **333-16** | .63 | (16) | 1.02 | (26) | 1.50 - 3.94 | (038 - 100) |
| **333-32** | 1.26 | (32) | 1.97 | (50) | 2.95 - 9.84 | (075 - 250) |
| **333-50** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **333-75** | 2.95 | (75) | 3.78 | (96) | 5.51 - 11.81 | (140 - 300) |

### Snap-open Series:

| Series | Inner height/Inner width ☐ *Bi* | | Outer width/Outer height ☐ *Ba* | | Bending radii *R* | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) |
| **351-50 Single** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **352-50 Double** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |
| **353-50 Triple** | 1.97 | (50) | 2.68 | (68) | 3.94 - 9.84 | (100 - 250) |

# E-Chain System®
# Triflex® Series
# Assembly Instructions



## Triflex® Series - Assembling

Twist and snap in

Snap in pin “push-button-design”

## Triflex® Series - Separating

Release side link

Twist and separate

## Triflex® Series 352 and 353 - Filling

To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

# E-Chain System® Triflex® Series
# Series 331/332/333
# Series 351/352/353 (Snap-Open)

.63 | 1.26 | 1.97 | 2.95 | 1.97

## Price Index

Series 332/333 Series 352/353

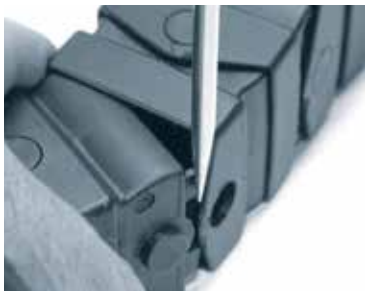
## Special Options Available

Flammability Class VDE 0304 IIC UL94 V2

Torsion motion possible

iF-Design Award Winner

## Assembly Tips



Release side link, twist and separate

To open Series 352 and Series 353 only - Insert screwdriver into slot on top of lid and push down

## Usage Guidelines

- For applications that move within two or three axes (combined rotary and circular movements)
- If chip protection is required

- If every link must open on both sides
  ➤ TwisterChain® system, **Chapter 8**
- For gliding applications
  ➤ System E4, **Chapter 6**
- For rotary movements only
  ➤ TwisterChain® system, **Chapter 8**

## Features & Benefits

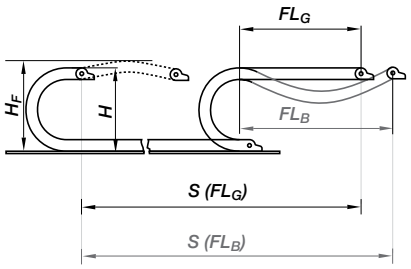
1. KMA, flanged and angled mounting brackets available
2. Combinations of varying bending radii and moving axes
3. Completely enclosed
4. Combination of Series 353 and Series 333 possible
5. Series 352 and 353 snap-open
6. Protection against dirt and chips
7. High tensile strength
8. Cost-effective design for complex movements
9. Assembling and separating at any given point

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **332-50-100/100-0** | **E-Chain®** |
| With 2 separators **351** assembled every 2nd link | **Interior Separation** |
| 1 Set **338-50-12** | **Mounting Bracket** |

# E-Chain System® Triflex® Series
# Series 331/332/333
# Series 351/352/353 (Snap-Open)




**Short travel, unsupported length**

● $FL_B$ = unsupported with permitted sag

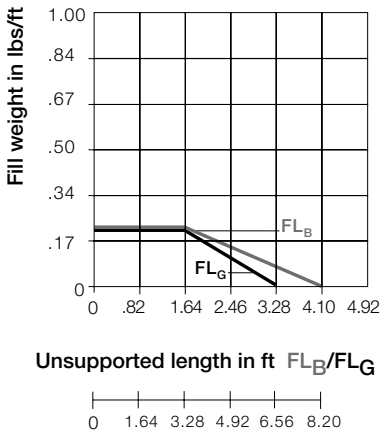
● $FL_G$ = unsupported with straight upper run

Further information ➤ Design, Chapter 1

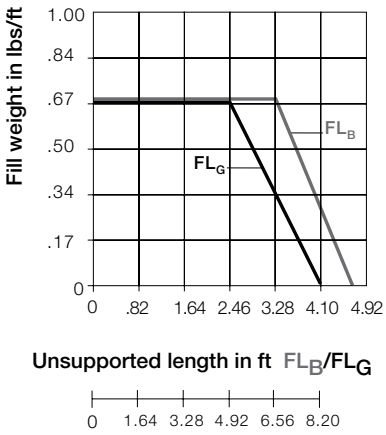
**Legend**

S = Length of travel
R = Bending radius
H = Nominal clearance height
D = Overlength E-Chain® radius in final position
K = π • R + *"safety buffer"*
$H_F$ = Required clearance height

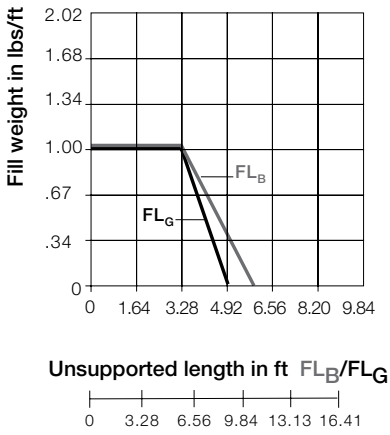
**Unsupported length 331/332-16**



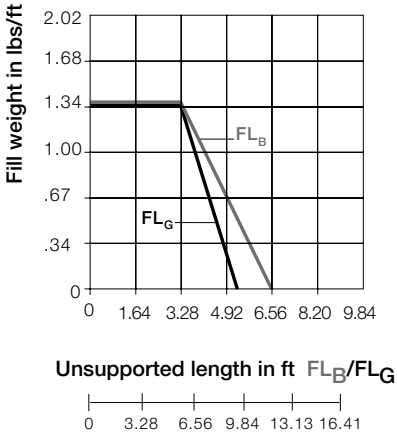

**Unsupported length 331/332-32**




**Unsupported length 331/332-50**




**Unsupported length 331/332-75**




**Technical Data**

| | |
|---|---|
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 V2 |

Details of material properties
➤ Chapter 1

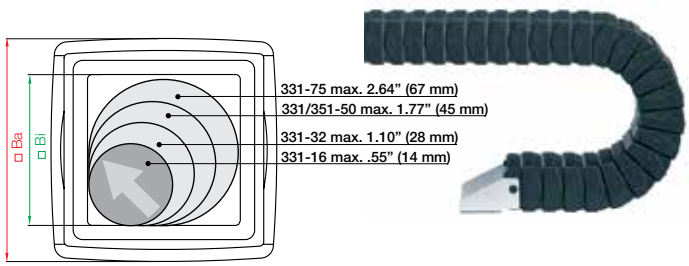


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

# E-Chain System® Triflex® Series
# Single Axis Movement

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

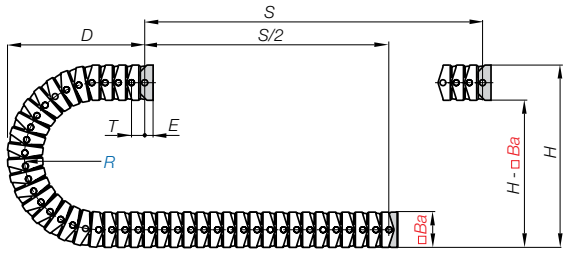
## Single Axis Movement, Series 331/351




| Part No. | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| 331-16- | .63 (16) | 1.02 (26) | ≈ 0.22 (.33) |
| 331-32- | 1.26 (32) | 1.97 (50) | ≈ 0.60 (.90) |
| 331-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |
| 331-75- | 2.95 (75) | 3.78 (96) | ≈ 1.58 (2.35) |
| Snap-open | | | |
| 351-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |

**Supplement part number with required radius from below.**
**for example 331-50-100-0**

## Installation dimensions for single-axis movement




**For center mount applications:**
**Tube length =** $_{S}/_{2} + K$

**Part No. structure**

| 332- | 50- | 100- | 0 |
|---|---|---|---|

Color black
Bending radius
Width
series

### Series 331-16

| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) |
|---|---|---|---|---|
| H | 4.13 (105) | 4.92 (125) | 7.09 (180) | 9.06 (230) |
| D | 2.76 (70) | 3.15 (80) | 4.13 (105) | 5.12 (130) |
| K | 7.87 (200) | 9.06 (230) | 12.40 (315) | 15.75 (400) |

**Pitch =** .52 (13.3 mm)
**Links/ft (m) =** 23.08 (76)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.02 (26 mm)

### Series 331-32

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.12 (130) | 6.10 (155) | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) |
| K | 12.01 (305) | 15.15 (385) | 18.30 (465) | 21.46 (545) | 27.56 (700) | 34.06 (865) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series 331-50

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 17.13 (435) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series 331-75

| R | 5.51 (140) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|
| H | 14.96 (380) | 17.71 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| D | 9.45 (240) | 10.83 (275) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 21.65 (550) | 25.98 (660) | 29.13 (740) | 35.43 (900) | 41.73 (1060) |

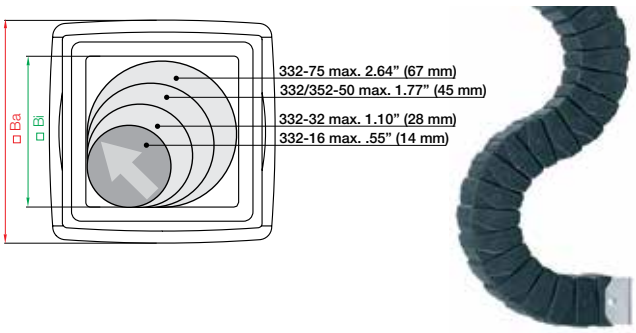
**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

### Series 351-50 (Snap-Open)

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 17.13 (435) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

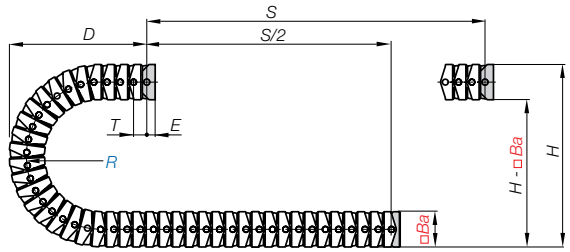
## Double Axis Movement, Series 332/352




| Part No. | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| 332-16- | .63 (16) | 1.02 (26) | ≈ 0.22 (.33) |
| 332-32- | 1.26 (32) | 1.97 (50) | ≈ 0.60 (.90) |
| 332-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |
| 332-75- | 2.95 (75) | 3.78 (96) | ≈ 1.58 (2.35) |
| Snap-open | | | |
| 352-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |

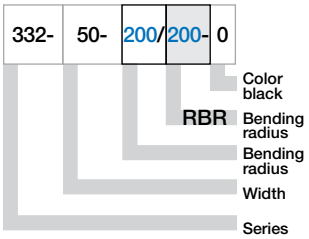
Supplement part number with required radius from below
for example, 332-75-2-200-0

## Installation dimensions for double-axis movement




For center mount applications:
Tube length = $\frac{S}{2}$ + K

Part No. structure




### Series 332-16

| R | 1.50 (038) | 1.89 (048) | 2.95 (075) | 3.94 (100) |
|---|---|---|---|---|
| H | 4.13 (105) | 4.92 (125) | 7.09 (180) | 9.06 (230) |
| D | 2.76 (70) | 3.15 (80) | 4.13 (105) | 5.12 (130) |
| K | 7.87 (200) | 9.06 (230) | 12.40 (315) | 15.75 (400) |

**Pitch =** .52 (13.3 mm)
**Links/ft (m) =** 23.08 (76)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.02 (26 mm)

### Series 332-32

| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|
| H | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 17.72 (450) | 21.65 (550) |
| D | 5.12 (130) | 6.10 (155) | 7.09 (180) | 8.07 (205) | 10.04 (255) | 12.01 (305) |
| K | 12.01 (305) | 15.15 (385) | 18.30 (465) | 21.46 (545) | 27.56 (700) | 34.06 (865) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series 332-50

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 10.63 (270) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 7.68 (195) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 17.13 (435) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series 332-75

| R | 5.51 (140) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|
| H | 14.96 (380) | 17.71 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| D | 9.45 (240) | 10.83 (275) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| K | 21.65 (550) | 25.98 (660) | 29.13 (740) | 35.43 (900) | 41.73 (1060) |

**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

### Series 352-50 (Snap-Open)

| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|
| H | 14.96 (380) | 12.60 (320) | 14.76 (375) | 18.50 (470) | 22.44 (570) |
| D | 9.45 (240) | 8.66 (220) | 9.65 (245) | 11.61 (295) | 13.58 (345) |
| K | 21.65 (550) | 20.47 (520) | 23.23 (590) | 29.53 (750) | 35.83 (910) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

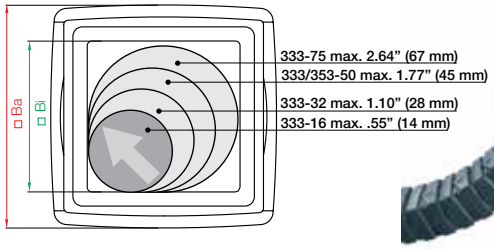
# E-Chain System® Triflex® Series
# Triple Axis Movement

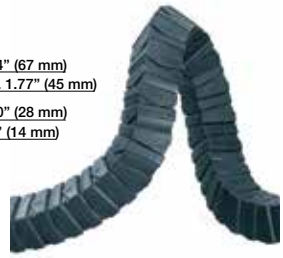


Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Triple Axis Movement, Series 333/353 (Snap-Open)

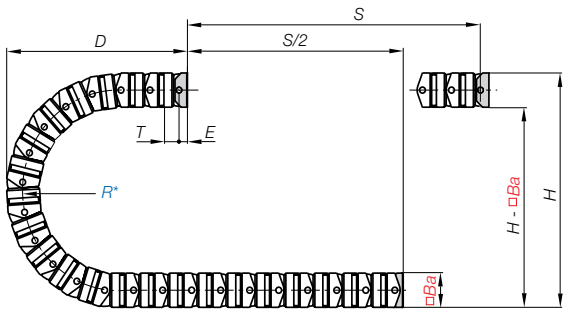


| Part No. | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| 333-16- | .63 (16) | 1.02 (26) | ≈ 0.22 (.33) |
| 333-32- | 1.26 (32) | 1.97 (50) | ≈ 0.60 (.90) |
| 333-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |
| 333-75- | 2.95 (75) | 3.78 (96) | ≈ 1.58 (2.35) |
| Snap-open | | | |
| 353-50- | 1.97 (50) | 2.68 (68) | ≈ 0.94 (1.40) |

**Supplement part number with required radius from above for example, 333-32-100-0**

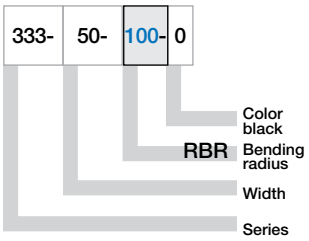
## Installation dimensions for triple-axis movement




**For center mount applications:**
**Tube length =** $\frac{S}{2} + K$

* The bending radii are doubled in the case of the **Series 333** E-Chain®

**Part No. structure**




### Series 333-16

| R | (076) | 3.78 (096) | 5.91 (150) | 7.87 (200) |
|---|---|---|---|---|
| H | 7.09 (180) | 8.66 (220) | 12.99 (330) | 16.93 (430) |
| D | 4.13 (105) | 4.92 (125) | 7.09 (180) | 9.06 (230) |
| K | 12.60 (320) | 14.96 (380) | 21.65 (550) | 27.95 (710) |

**Pitch =** .52 (13.3 mm)
**Links/ft (m) =** 23.08 (76)
**Dimensions E =** .39 (10 mm)
**Ba =** 1.02 (26 mm)

### Series 333-32

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|---|
| H | 13.78 (350) | 17.72 (450) | 21.65 (550) | 25.59 (650) | 33.46 (850) | 41.33 (1050) |
| D | 8.07 (205) | 10.04 (255) | 12.01 (305) | 13.98 (355) | 17.91 (455) | 21.85 (555) |
| K | 21.46 (545) | 27.56 (700) | 33.86 (860) | 40.16 (1020) | 51.18 (1300) | 63.19 (1605) |

**Pitch =** .98 (25 mm)
**Links/ft (m) =** 12.24 (40)
**Dimensions E =** .79 (20 mm)
**Ba =** 1.97 (50 mm)

### Series 333-50

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|
| H | 18.50 (470) | 22.44 (570) | 26.38 (670) | 34.25 (870) | 42.13 (1070) |
| D | 11.61 (295) | 13.58 (345) | 15.55 (395) | 19.49 (495) | 23.43 (595) |
| K | 29.53 (750) | 35.83 (910) | 42.13 (1070) | 54.33 (1380) | 66.54 (1690) |

**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

### Series 333-75

| R | 11.02 (280) | 13.78 (350) | 15.75 (400) | 19.69 (500) | 23.62 (600) |
|---|---|---|---|---|---|
| H | 25.98 (660) | 31.50 (800) | 35.43 (900) | 43.31 (1100) | 51.18 (1300) |
| D | 14.96 (380) | 17.72 (450) | 19.69 (500) | 23.62 (600) | 27.56 (700) |
| K | 38.98 (990) | 47.64 (1210) | 55.12 (1400) | 66.93 (1700) | 78.74 (2000) |

**Pitch =** 1.42 (36 mm)
**Links/ft (m) =** 8.45 (28)
**Dimensions E =** .98 (25 mm)
**Ba =** 3.78 (96 mm)

### Series 353-50 (Snap-Open)

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|
| H | 18.50 (470) | 22.44 (570) | 26.38 (670) | 34.25 (870) | 42.13 (1070) |
| D | 11.61 (295) | 13.58 (345) | 15.55 (395) | 19.49 (495) | 23.43 (595) |
| K | 29.53 (750) | 35.83 (910) | 42.13 (1070) | 54.33 (1380) | 66.54 (1690) |

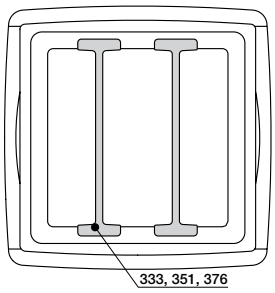
**Pitch =** 1.18 (30 mm)
**Links/ft (m) =** 10.17 (34)
**Dimensions E =** .98 (25 mm)
**Ba =** 2.68 (68 mm)

## Interior Separation

Modular separators are available as interior shelving for the igus® Triflex® System. They can be used for both vertical and horizontal sub-division. If the separators are assembled every other link and turned 90°, the tube can be sub-divided into four segments. We recommend ordering the tube pre-assembled, as subsequent assembly of separators is only possible after dismantling the tube. Please note that assembled separators have a different part number than unassembled separators.

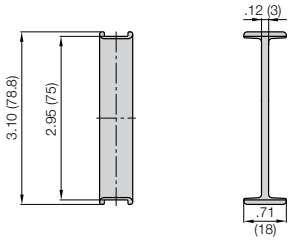
Horizontal sub-division

Vertical sub-division



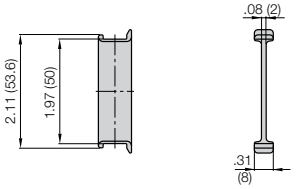

333, 351, 376

### 331/332/333-75



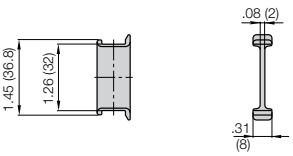

| Separator | |
|---|---|
| Unassembled | **Part No. 375** |
| Assembled | **Part No. 376** |

### 331/332/333-50
### 351/352/353-50




| Separator | |
|---|---|
| Unassembled | **Part No. 350** |
| Assembled | **Part No. 351** |

### 331/332/333-32




| Separator | |
|---|---|
| Unassembled | **Part No. 332** |
| Assembled | **Part No. 333** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

# E-Chain System® Triflex® Series
# Mounting Brackets

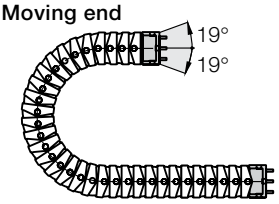
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

Standard

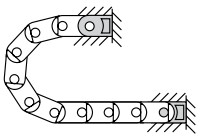
**Option 1: KMA**

- Corrosion resistant
- Strain relief with tiewrap plate

**333-50-1PZ**
**Moving end**

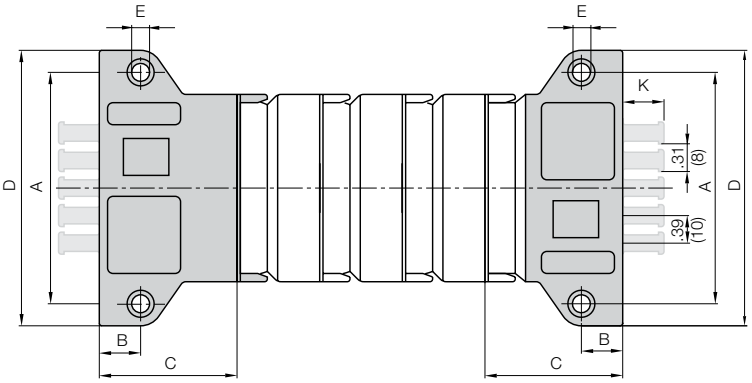



**333-50-2PZB**
**Fixed end**
(with tiewrap plate **333-50-ZB**)



Possible installation configurations -

**333...1PZ(B)**

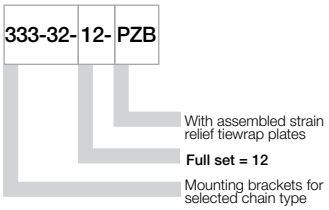



**333...2PZ(B)**




**For high loads we recommend screwing the mounting brackets to the chain. If you have any questions, please give us a call.**

**Part No. structure**




**Full set, for both ends:**
333-32-12PZB +tiewrap plate

**Single-part order:**
333-32-1PZB +tiewrap plate
Mounting bracket **with bore**
333-32-2PZB +tiewrap plate
Mounting bracket **with pin**

| Series | Part No. Full Set with tiewrap plate | Part No. Full Set without tiewrap plate | A in. (mm) | B in. (mm) | C in. (mm) | D in. (mm) | E in. (mm) | K in. (mm) | N No. of Teeth |
|---|---|---|---|---|---|---|---|---|---|
| 331/332/333-32 | 333-32-12PZB | 333-32-12-PZ | 2.60 (66) | .59 (15) | 1.81 (46) | 3.23 (82) | .26 (6.5) | .59 (15) | 3 |
| 331/332/333-50 | 333-50-12PZB | 333-50-12-PZ | 3.31 (84) | .59 (15) | 1.97 (50) | 3.94 (100) | .26 (6.5) | .59 (15) | 5 |
| 331/332/333-75 | 333-75-12PZB | 333-75-12-PZ | 4.29 (109) | .59 (15) | 2.17 (55) | 4.92 (125) | .26 (6.5) | .59 (15) | 7 |
| Snap-open series | | | | | | | | | |
| 351/352/353-50 | 333-50-12PZB | 333-50-12-PZ | 3.31 (84) | .59 (15) | 1.97 (50) | 3.94 (100) | .26 (6.5) | .59 (15) | 5 |

## Tiewrap plate as individual part

### Special tiewrap plates for Triflex® E-Chains®

- Single-piece for installation inside switch cabinets or machine assembly
- Accessory for igus® E-Chain Systems®
- Easy to assemble, no need for screws

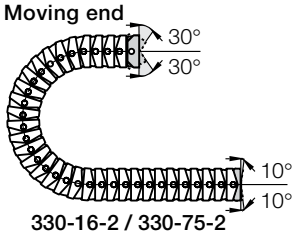
| Part No. Tiewrap plate | Width in. (mm) | Number of teeth | For Series | |
|---|---|---|---|---|
| 333-32-ZB | 1.57 (40) | 3 | 331/332/333-32 | |
| 333-50-ZB | 2.28 (58) | 5 | 331/332/333-50 | 351/352/353-50 |
| 333-75-ZB | 3.27 (83) | 7 | 331/332/333-75 | |

# E-Chain System® Triflex® Series
# Mounting Brackets

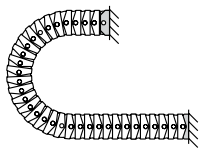
## Option 2: pivoting steel flange

- Galvanized steel
- Electrically conductive
- Flush mounting

330-16-1 / 330-75-1
Moving end

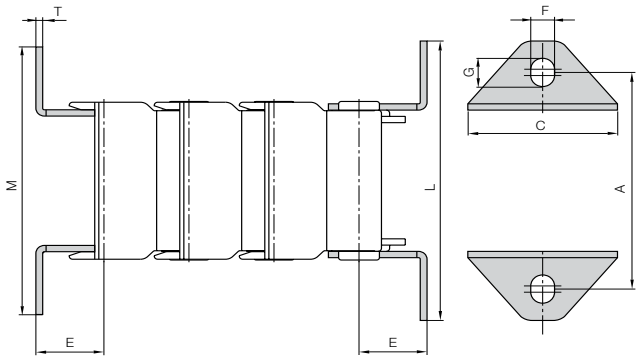



330-16-2 / 330-75-2
Fixed end



Possible installation configurations -

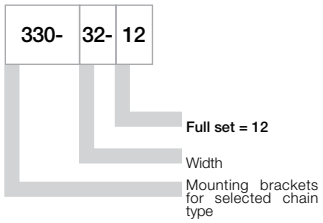
330-26-2 / 330-75-2




330-16-1 / 330-75-1




Part No. structure



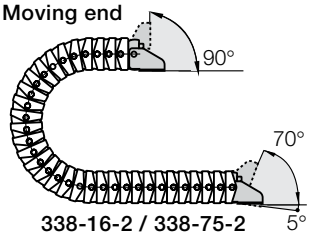

**Full set, 4 parts**
**2 with pin / 2 with bore:**
330-32-12
**Single-part order:**
330-32-1
Mounting bracket **with bore**
330-32-2
Mounting bracket **with pin**

| Series | Part No. | A | M | C | L | T | E | F | G |
|---|---|---|---|---|---|---|---|---|---|
| 331/332/333-16 | 330-16-12 | 1.38 (35) | 2.09 (53) | .83 (21) | 2.24 (57) | .04 (1) | .39 (10) | .18 (4.5) | .24 (6) |
| 331/332/333-32 | 330-32-12 | 2.60 (66) | 3.31 (84) | 1.73 (44) | 3.46 (88) | .08 (2) | .79 (20) | .28 (7) | .35 (9) |
| 331/332/333-50 | 330-50-12 | 3.31 (84) | 4.02 (102) | 2.44 (62) | 4.17 (106) | .08 (2) | .98 (25) | .28 (7) | .35 (9) |
| 331/332/333-75 | 330-75-12 | 4.29 (109) | 5.00 (127) | 3.54 (90) | 5.16(131) | .08 (2) | .98 (25) | .28 (7) | .35 (9) |

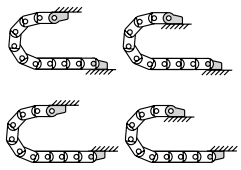
## Option 3: angle

- Galvanized steel
- Electrically conductive
- Can be attached to top or bottom of the machine

338-16-1/ 338-75-1
Moving end

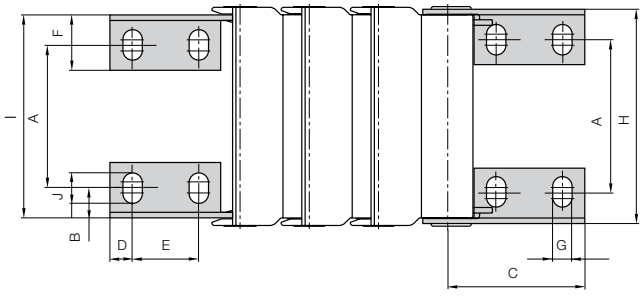



338-16-2 / 338-75-2
Fixed end



Possible installation configurations -

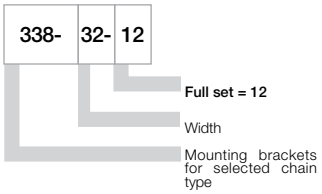
338-16-2 / 338-75-2




338-16-1 / 338-75-1




Part No. structure




**Full set, 4 parts**
**2 with pin / 2 with bore:**
338-32-12
**Single-part order:**
338-32-1
Mounting bracket **with bore**
338-32-2
Mounting bracket **with pin**

| Series | Part No. | A | B | C | D | E | F | G | H | I | J |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 331/332/333-16 | 338-16-12 | .47 (12) | .12 (3) | .98 (25) | .20 (5) | .39 (10) | .43 (11) | .18 (4,5) | .98 (25) | .91 (23) | .24 (6) |
| 331/332/333-32 | 338-32-12 | .94 (24) | .22 (5.5) | 1.85 (47) | .31 (8) | .94 (24) | .79 (20) | .28 (7) | 1.93 (49) | 1.77 (45) | .43 (11) |
| 331/332/333-50 | 338-50-12 | 1.65 (42) | .22 (5.5) | 3.03 (77) | .47 (12) | 1.38 (35) | .94 (24) | .35 (9) | 2.64 (67) | 2.44 (62) | .59 (15) |
| 331/332/333-75 | 338-75-12 | 2.56 (65) | .22 (5.5) | 3.03 (77) | .47 (12) | 1.38 (35) | .94 (24) | .35 (9) | 3.74 (95) | 3.54 (90) | .59 (15) |
| Snap-open | | | | | | | | | | | |
| 351/352/353-50 | 338-50-12 | 1.65 (42) | .22 (5.5) | 3.03 (77) | .47 (12) | 1.38 (35) | .94 (24) | .35 (9) | 2.64 (67) | 2.44 (62) | .59 (15) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains-pdfs
RoHS info: www.igus.com/RoHS

igus®

# TwisterChain®

## NEW

## Second Generation: robust, low-noise, for high loads

# TwisterChain® New - robust, low-noise, for high loads

Higher loads and smoother running igus® new generation of TwisterChain® circular E-Chains® significantly improved smoothness, stability and strength. The TwisterChain® New has a modular construction for width, height and radius and therefor provides very flexible use in applications where rotating movements up to 540° are required.

- Sturdier through intermediate link - more additional load possible
- 25% less weight than TwisterChain® Classic
- Rotary speeds up to 6.56 ft/s (2 m/s) and more
- Rotary/spiral movements up to 540°
- Highly dynamic and smoother running (with a new guide trough)
- Cable-friendly, smooth interior
- Crossbars snap-open along inner radius
- Over 1 million cycles tested successfully in the igus® laboratory

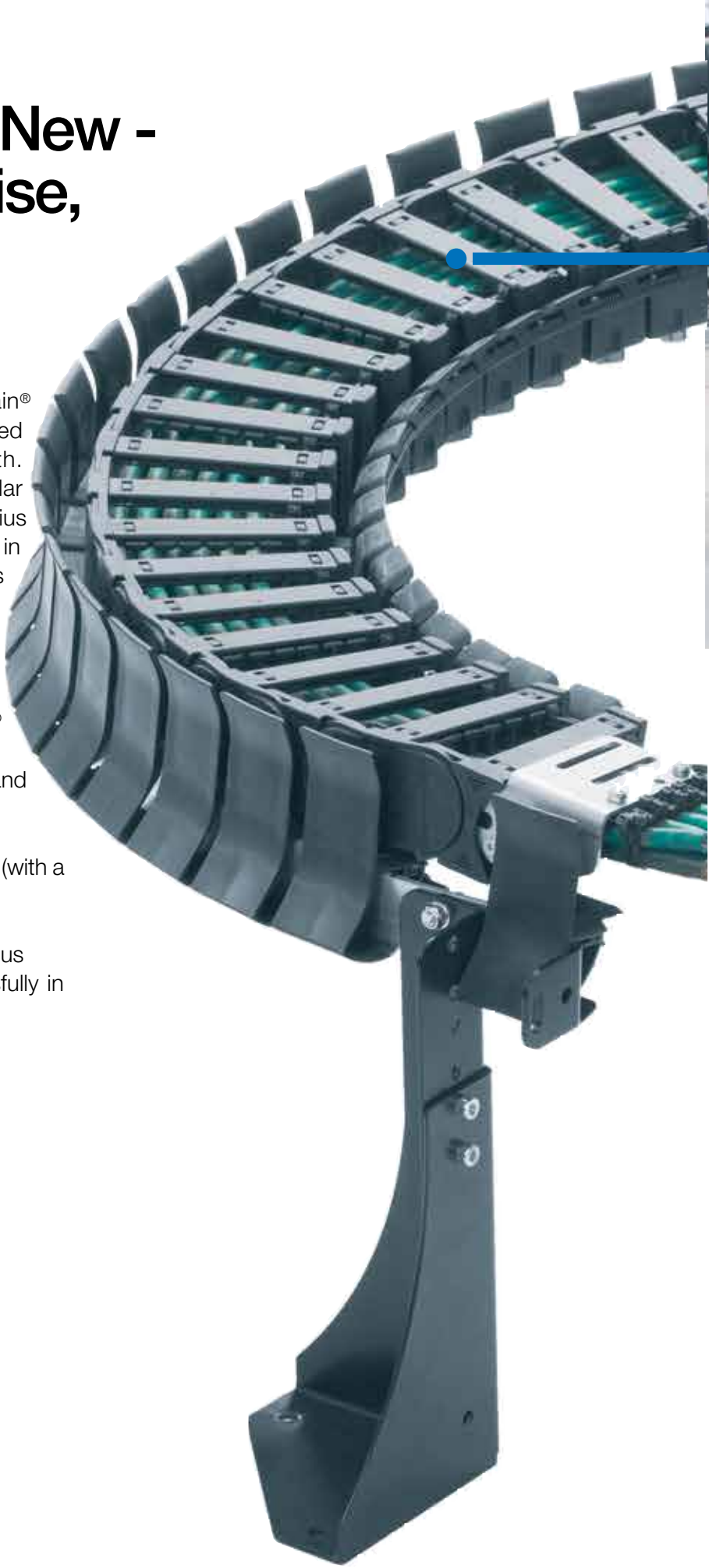
**Typical industries and applications**

- Robots, handling machines
- Packaging machines
- Glass machines
- General mechanical engineering etc.

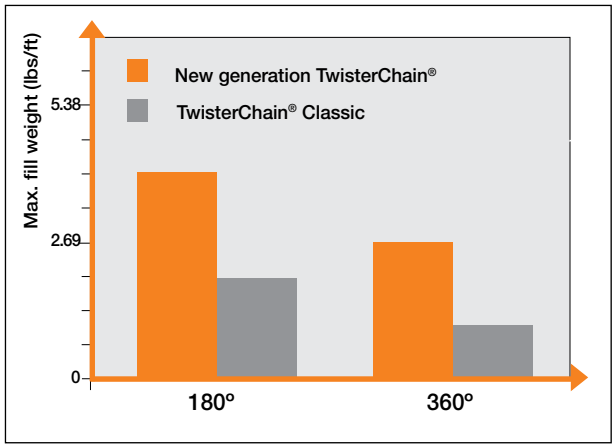
Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

New Guide Trough System available



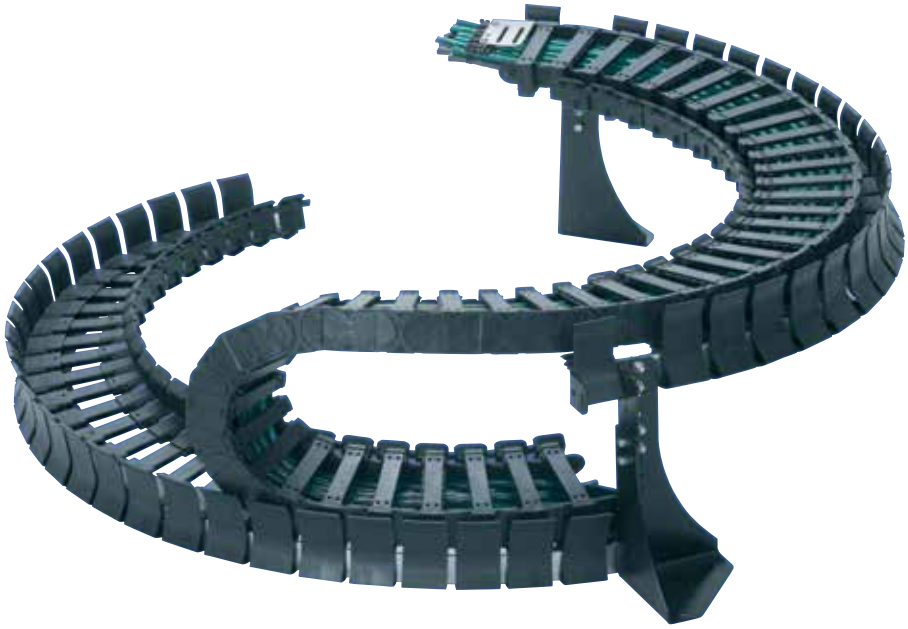
igus® TwisterChain® New - over 1 million cycles tested successfully in the igus® laboratory




100% more additional loads with the new generation of igus® TwisterChain® New

The cable-optimized intermediate link increases the stability of TwisterChain® New several times. It also serves as interior separation and divides the filling space into two chambers

# E-Chain System®
# TwisterChain® New Series
# Selection Guide

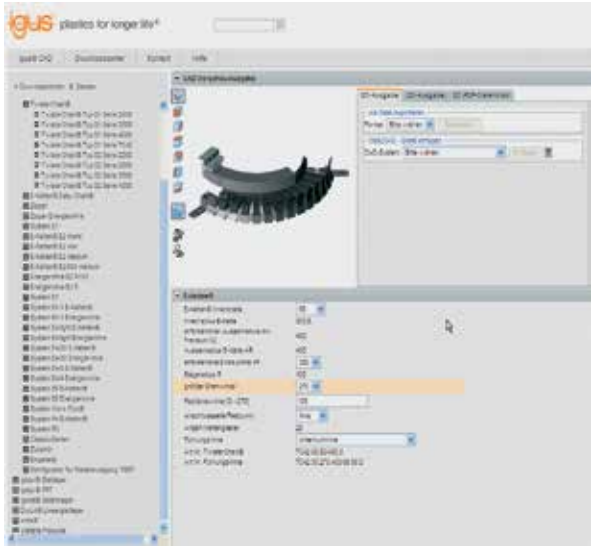


**TwisterChain® New**
For circular movements up to 540°,
crossbars snap-open along inner radius

| Series | Inner height *hi* (mm) | Inner width *Bi* (mm) | Outer width *Ba* (mm) | Outer height *ha* (mm) | Bending radius *R* (mm) | Circular Radii AR (mm) |
|---|---|---|---|---|---|---|
| **TC32-** | 32 | 87.5-150 | 108.5-171 | 54 | 100 - 250 | 400 - 600 |
| **TC42-** | 42 | 87.5-200 | 110.5-223 | 64 | 100 - 250 | 400 - 850 |
| **TC56-** | 56 | 125-200 | 155-230 | 84 | 150 - 400 | 650 - 850 |

## Quickly generate complete TwisterChain® models with guide trough and accessories

➤ www.igus.com/twisterconfigurator

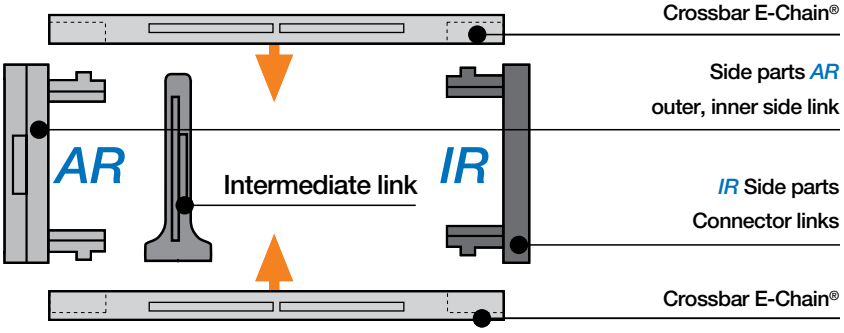


- Preparing of 3D-models only with input of chosen E-Chain® radii and installation area
- Free positioning of the E-Chain® moving end along the travel lengths
- Generation of TwisterChain® optionally as single part or with guide trough and base support
- Fast download of the CAD files without registration
- CAD models in 11 different 3D CAD formats and 8 different 2D CAD formats

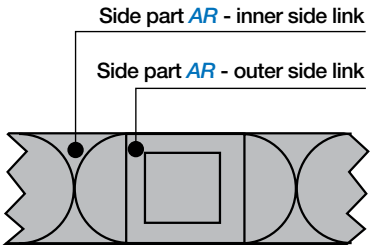
# E-Chain System®
# TwisterChain® New Series

| | |
|---|---|
| Speed / acceleration | max. 3.28 ft/s (1.0 m/s) / max. 6.56 ft/s$_2$ (2.0 m/s$_2$) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability class, igumid G | VDE 0304 IIC UL94 HB |

## Part No. of E-Chain® links as single parts - System TwisterChain® New




Lateral view *AR*



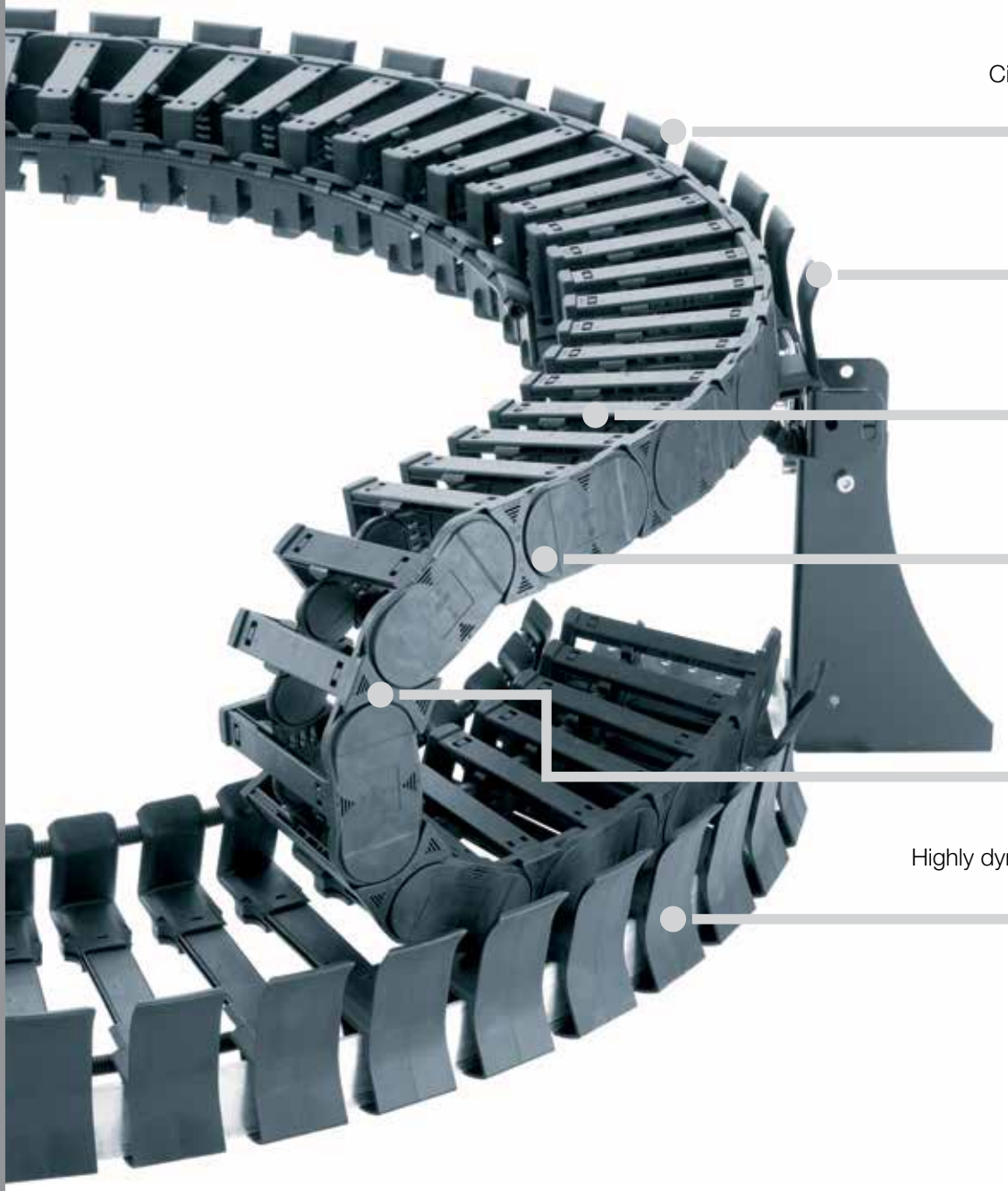

| Series | Crossbar E-Chain [1] | Side parts *AR* outer side link [2] | Side parts *AR* inner side link [3] | Side parts *IR* Connector links | Intermediate link |
|---|---|---|---|---|---|
| TC32 | 385-*Bi* | E4-32-01 | TC32-02-*R-AR* | 2808-03 | TC32-04 |
| TC42 | 385-*Bi* | E4-42-01 | TC42-02-*R-AR* | 3808-03 | TC42-04 |
| TC56 | 450-*Bi* | E4-56-01 | TC56-02-*R-AR* | 4008-03 | TC56-04 |

**No linking** possible in combination with QuickLock crossbars!

1) Supplement Part No. of crossbar with required width index (*Bi*) e.g. **450-150**
2) Outer side link - fit for each radius (only for outer radius *AR*)
3) Inner side link - supplement Part No. with required radius *(R)*
   e.g. **TC56-02-100-AR** (only for outer radius *AR*)

# E-Chain System®
# TwisterChain® New Series

1.26 | 1.65 | 2.20



Circular and spiral movements up to 540° possible

Cable-friendly, smooth interior

Crossbars snap-open along inner radius

Modular, variable width, height and radius

More stable, more additional load possible due to intermediate link

Highly dynamic and smoother running (new Guide Trough)

## ⊕ New design, higher loads, circular movements up to 540°

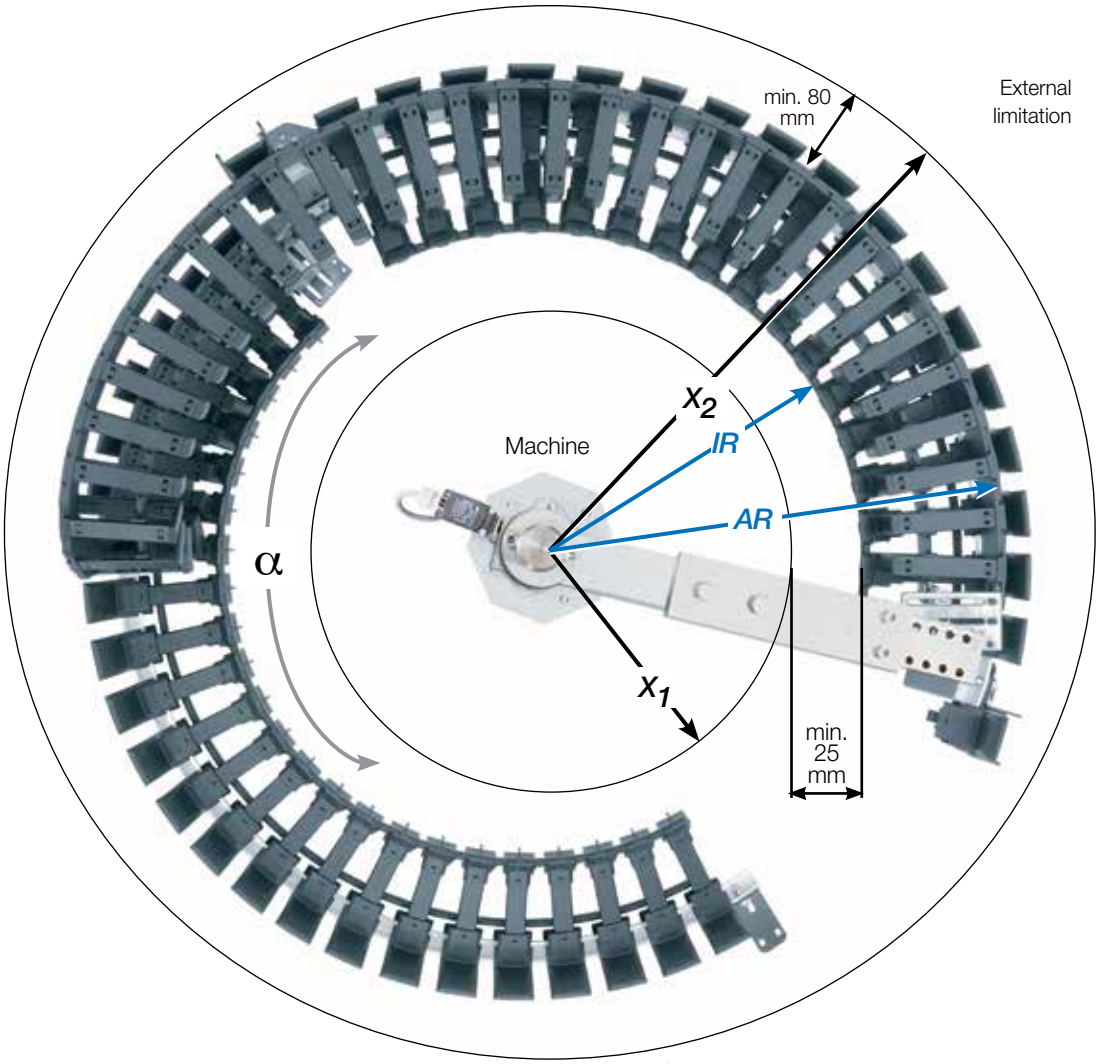
**When to use the System TwisterChain®:**

- If a robust, low-noise system is required, appropriate for high loads
- Rotatory speeds up to 3.28 ft/s (1 m/s) and more
- At rotatory/spiral movements up to 540°
- If a variable interior separation is desired
- If two-sided opening is desire

## ⊖

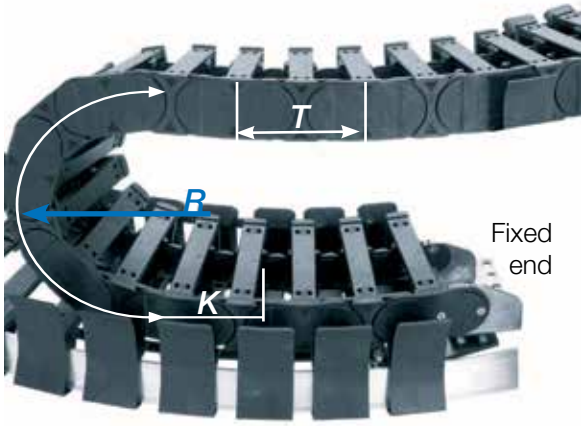
**When to use a different igus® Series:**

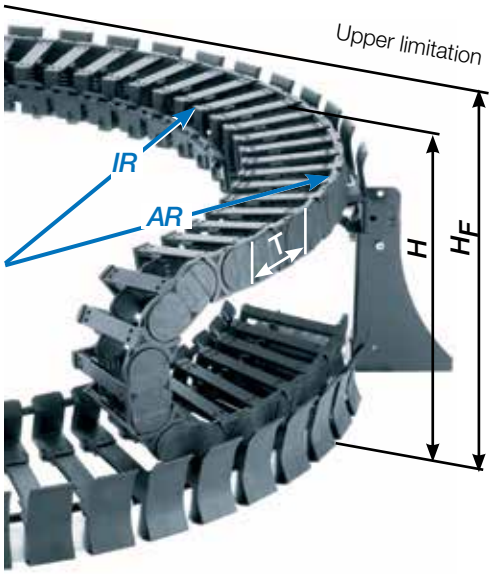
- For larger rotations
  **➤ igus® RBR-solutions, Design, chapter 1**
- For rotation angles higher than 360° please consult igus®




**TwisterChain® definition**

In the case of machine elements which both move to the left and to the right following a circular path, the rotation angle can be determined by adding the two angles




*AR* = Outer radius, E-Chain®
*IR* = Inner radius, E-Chain®
*R* = Bending radius

$X_1$ = Inner machine construction space
$X_2$ = Outer radius *AR*, including clearance
*T* = Pitch
$H_F$ = Height including 50 mm clearance
*H* = Nominal clearance height

*K* = Add-on for bending radius
*hi* = Inner height E-Chain®
*ha* = Outer height E-Chain®
α = Rotation angle

# E-Chain System®
# TwisterChain® New Series
# Selecting the correct TwisterChain® New

If you would like us to design your TwisterChain® application, simply supply us with your requirements. Please use the igus® system design form at the end of this chapter. If you would like to specify the E-Chain® and the guide trough yourself, please work through the following points and enter the results on the calculation sheet at the end of the chapter.

## 1. Determine the series and E-Chain® width - Example of client data:

- Available construction space outer radius - 592 mm
- Inner radius = 311 mm
- α Rotation angle = 220°
- Installation height = 466 mm
- ø cable of client = 22 mm
- Minimum bend radius of client cable = 165mm

Estimate the dimensions of the E-Chain® by means of the internal separation with filling and select the series, or verify the maximum cable diameter and select the series using the next larger permissible ø. (For the inner height, we recommend the consideration of a cable clearance of approximately 20% of the chain's inner height and width.
**Maximum ø cable TwisterChain®:** TC32 = 25 mm, TC42 = 39 mm, TC56 = 53 mm
**Example:** Maximum ø cable of client 22 mm ➞ Series TC32 (next larger)

## 2. Specify the outer radius *AR*

Select the next smaller $X_2$ of the E-Chain® from the available installation space of the outer radius. From the dimension $X_2$ please subtract 80 mm, which results in the necessary outer radius ***AR***.
Selection of the chain outer radii, see table; dimension $X_2$ of the corresponding series
**Formula: *AR* = $X_2$ - 80 mm**
**Example:** 1. Available construction space outer radius 592 mm ➞ 580 mm ($X_2$)
2. $X_2$ 580 mm - 80 mm ➞ ***AR*** 500 mm (next smaller selected)

## 3. Specify the inner radius *IR*

Add the allowance of 25 mm to the available installation space of the inner radius and select the next larger $X_1$ of the E-Chain®. The maximum width **Bi** results from the selected value.
Selection from the table of the corresponding series.
**Formula: $IR_{min}$ = $X_1$ + 25 mm**
**Example:** Available installation space inner radius 311 mm + 25 mm = 336 mm ➞ $X_1$ 350 mm = **Bi** 11 (108 mm)

## 4. Specify the bending radius *R*

Basically, the chain's bending radius ***R*** is determined by the largest bending radius of the cables.
Selection from the table of the corresponding series.
**Example:** 1. ø 22 mm (7.5 x ø) ➞ 22 mm x 7.5 = 165 mm cable's bending radius minimum
2. 165 ➞ ***R*** 175 mm (next higher selected) ➤ Results ➞ **Part No. TC32-11-175/500**

## 5. Specify the required installation height H

An allowance of 170 mm is added to twice the value of the selected chain's bending radius ***R***.
**Example:** ***R*** 175 mm x 2 + 170 mm = H 520 mm

## 6. Calculate the required number of links

**Formula:** $$n = \frac{\pi \times AR \times \alpha}{360° \times T} + \frac{K}{T}$$

**Please note:**

- The resulting number of links must always be rounded up!
- The mounting brackets may be attached only to the outside plates of the TwisterChain®. Consequently, the number of links **must always be rounded up to the next highest odd number!**

**Note:** **In the case of machine elements which both move to the left and to the right following a circular path, the rotation angle can be determined by adding to two angles.**

| | | | | | |
|---|---|---|---|---|---|
| ***AR*** | = Outer radius | ***T*** | = Pitch | α | = Rotation angle |
| ***IR*** | = Inner radius | $H_F$ | = Height incl. 50 mm clearance | ***a*** | = Acceleration |
| ***R*** | = Bending radius | ***H*** | = Nominal clearance height | ***n*** | = Number of links |
| $X_1$ | = Inner machine construction space | ***K*** | = Add-on for bending radius | $FZ_{max}$ | = Maximum additional load |
| $X_2$ | = Outer radius ***AR***, incl. clearance | ***hi*** | = Inner height | | |
| | | ***ha*** | = Outer height | | |

## Recommendations for design without additional components

| Series | *AR* (mm) | *FZ*max. α 0°- 180° lbs/ft (kg/m) | *FZ*max. α 180°- 360° lbs/ft (kg/m) | *v* at *AR* permissible ft/s (m/s) | *a* at *AR* maximum ft/s² m/s² |
|---|---|---|---|---|---|
| **TC32** | 400 | 2.69 (4.0) | 1.34 (2.0) | 3.28 (1.0) | 6.56 (2.0) |
| | 500 | 2.69 (4.0) | 1.34 (2.0) | 3.28 (1.0) | 6.56 (2.0) |
| | 600 | 2.69 (4.0) | 1.34 (2.0) | 3.28 (1.0) | 6.56 (2.0) |
| **TC42** | 400 | 4.03 (6.0) | 2.42 (3.6) | 3.28 (1.0) | 6.56 (2.0) |
| | 500 | 4.03 (6.0) | 2.42 (3.6) | 3.28 (1.0) | 6.56 (2.0) |
| | 600 | 4.03 (6.0) | 2.42 (3.6) | 3.28 (1.0) | 6.56 (2.0) |
| | 650 | 3.36 (5.0) | 1.81 (2.7) | 3.28 (1.0) | 4.92 (1.5) |
| | 750 | 2.69 (4.0) | 1.21 (1.8) | 3.28 (1.0) | 3.28 (1.0) |
| | 850 | 2.69 (4.0) | 1.21 (1.8) | 3.28 (1.0) | 3.28 (1.0) |
| **TC56** | 650 | 5.38 (8.0) | 3.36 (5.0) | 3.28 (1.0) | 6.56 (2.0) |
| | 750 | 5.38 (8.0) | 3.36 (5.0) | 3.28 (1.0) | 6.56 (2.0) |
| | 850 | 5.38 (8.0) | 3.36 (5.0) | 3.28 (1.0) | 6.56 (2.0) |

If your calculations exceed our recommendations, please call to us. We offer special solutions and many additional components!

## Series TC32 - Snap-open along inner radius from both sides

### Dimensions in mm

| *AR* mm | Bi mm | Ba mm | $X_2$ mm | $X_1$ mm | *R* 100 TC32- | *R* 125 TC32- | *R* 150 TC32- | *R* 175 TC32- | *R* 200 TC32- | *R* 250 TC32- | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 400 | 87.5 | 108.5 | 480 | 270 | 087-100/400 | 087-125/400 | 087-150/400 | 087-175/400 | 087-200/400 | 087-250/400 | ≈ 1.22 (1.82) |
| 400 | 100 | 121 | 480 | 250 | – | – | 10-150/400 | 10-175/400 | 10-200/400 | 10-250/400 | ≈ 1.28 (1.90) |
| 400 | 108 | 129 | 480 | 250 | – | – | – | 11-175/400 | 11-200/400 | 11-250/400 | ≈ 1.31 (1.95) |
| 400 | 125 | 146 | 480 | 220 | – | – | – | 12-175/400 | 12-200/400 | 12-250/400 | ≈ 1.38 (2.05) |
| 400 | 137.5 | 158.5 | 480 | 210 | – | – | – | – | – | 137-250/400 | ≈ 1.43 (2.13) |
| 400 | 150 | 171 | 480 | 200 | – | – | – | – | – | 15-250/400 | ≈ 1.49 (2.21) |
| 500 | 100 | 121 | 580 | 350 | 10-100/500 | 10-125/500 | 10-150/500 | 10-175/500 | 10-200/500 | 10-250/500 | ≈ 1.28 (1.90) |
| 500 | 108 | 129 | 580 | 350 | – | 11-125/500 | 11-150/500 | 11-175/500 | 11-200/500 | 11-250/500 | ≈ 1.31 (1.95) |
| 500 | 125 | 146 | 580 | 320 | – | 12-125/500 | 12-150/500 | 12-175/500 | 12-200/500 | 12-250/500 | ≈ 1.38 (2.05) |
| 500 | 137.5 | 158.5 | 580 | 310 | – | – | 137-150/500 | 137-175/500 | 137-200/500 | 137-250/500 | ≈ 1.43 (2.13) |
| 500 | 150 | 171 | 580 | 300 | – | – | 15-150/500 | 15-175/500 | 15-200/500 | 15-250/500 | ≈ 1.49 (2.21) |
| 600 | 108 | 129 | 680 | 450 | 11-100/600 | 11-125/600 | 11-150/600 | – | – | – | ≈ 1.31 (1.95) |
| 600 | 125 | 146 | 680 | 420 | – | 12-125/600 | 12-150/600 | 12-175/600 | 12-200/600 | 12-250/600 | ≈ 1.38 (2.05) |
| 600 | 137.5 | 158.5 | 680 | 410 | – | 137-125/600 | 137-150/600 | 137-175/600 | 137-200/600 | 137-250/600 | ≈ 1.43 (2.13) |
| 600 | 150 | 171 | 680 | 400 | – | – | 15-150/600 | 15-175/600 | 15-200/600 | 15-250/600 | ≈ 1.49 (2.21) |

### Dimensions in mm

| *R* | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|
| $H^{+20}_{0}$ | 254 | 304 | 354 | 404 | 454 | 554 |
| *K* | 430 | 505 | 585 | 665 | 745 | 900 |

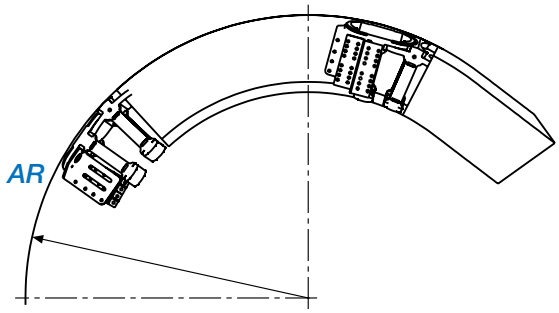
**Pitch *T*** = 56 mm/link
**Links/m** = 18 (1008 mm)

# E-Chain System®
# TwisterChain® New Series TC32
# Installation Dimensions

### Dimensions in mm

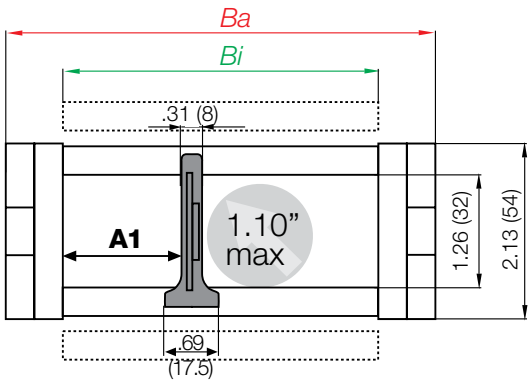
| *AR* (mm) | *R* 100 **A1** (mm) | *R* 125 **A1** (mm) | *R* 150 **A1** (mm) | *R* 175 **A1** (mm) | *R* 200 **A1** (mm) | *R* 250 **A1** (mm) |
|---|---|---|---|---|---|---|
| **400** | 51 | 51 | 52 | 53 | 53 | 58 |
| **500** | 65 | 65 | 66 | 67 | 69 | 71 |
| **600** | 79 | 80 | 81 | 81 | 82 | 85 |

Dimension A1 always with tolerance of ± 2.5 mm

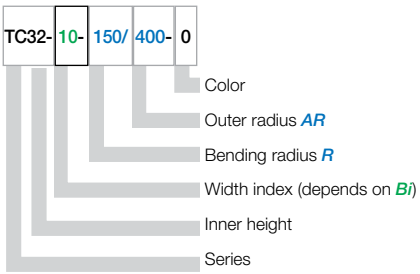



**Note: Outer radius *AR* (see drawing) determines dimension A1!**

## Dimensioning

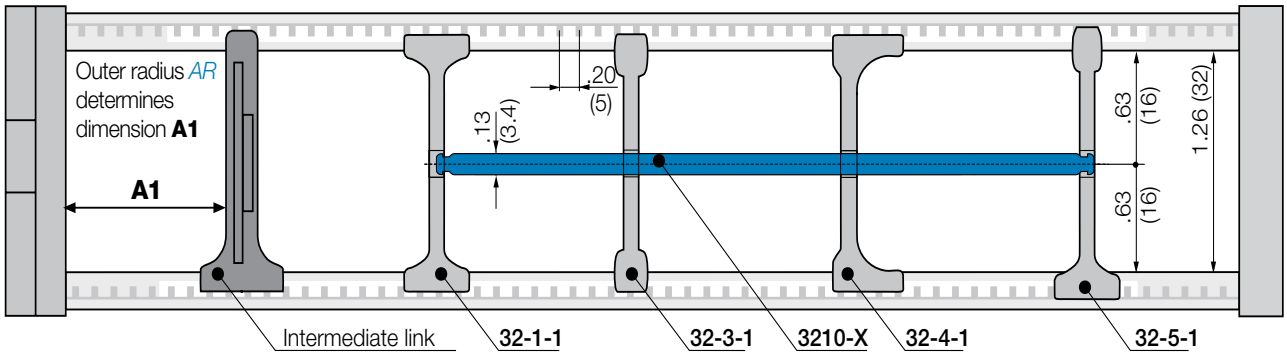



**Part No. structure**




**TC32-10-150/400-0** = E-Chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 150** mm bending radius / ***AR* 400** mm outer radius, color black

## Interior Separation




For this series the interior separation elements of **Series E4-32** can be used with the exception of the side plates, **Part No. 286**

***AR*** = Outer radius
***R*** = Bending radius
$X_1$ = Inner machine construction space
$X_2$ = Outer radius ***AR***, including. clearance
***Ba*** = Outer width
***Bi*** = Inner width
***H*** = Nominal clearance height
***K*** = Add-on for bending radius
***A1*** = Distance intermediate link
***T*** = Pitch

# E-Chain System®
# TwisterChain® New Series TC42

## Series TC42 - Snap-open along inner radius from both sides

Dimensions in mm

| AR | Bi | Ba | $X_2$ | $X_1$ | R 100 | R 125 | R 150 | R 175 | R 200 | R 250 | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| mm | mm | mm | mm | mm | TC42- | TC42- | TC42- | TC42- | TC42- | TC42- | lbs/ft (kg/m) |
| 400 | 87.5 | 110.5 | 480 | 270 | 087-100/400 | 087-125/400 | 087-150/400 | 087-175/400 | 087-200/400 | 087-250/400 | ≈ 1.32 (1.97) |
| 400 | 100 | 123 | 480 | 250 | 10-100/400 | 10-125/400 | 10-150/400 | 10-175/400 | 10-200/400 | 10-250/400 | ≈ 1.36 (2.03) |
| 400 | 108 | 131 | 480 | 250 | – | 11-125/400 | 11-150/400 | 11-175/400 | 11-200/400 | 11-250/400 | ≈ 1.39 (2.07) |
| 400 | 125 | 148 | 480 | 220 | – | 12-125/400 | 12-150/400 | 12-175/400 | 12-200/400 | 12-250/400 | ≈ 1.45 (2.16) |
| 400 | 137.5 | 160.5 | 480 | 210 | – | 137-125/400 | 137-150/400 | 137-175/400 | 137-200/400 | 137-250/400 | ≈ 1.49 (2.22) |
| 400 | 150 | 173 | 480 | 200 | – | – | – | 15-175/400 | 15-200/400 | 15-250/400 | ≈ 1.54 (2.29) |
| 400 | 162.5 | 185.5 | 480 | 190 | – | – | – | – | 162-200/400 | 162-250/400 | ≈ 1.60 (2.35) |
| 400 | 168 | 191 | 480 | 190 | – | – | – | – | – | 17-250/400 | ≈ 1.60 (2.38) |
| 400 | 175 | 198 | 480 | 180 | – | – | – | – | – | 18-250/400 | ≈ 1.62 (2.41) |
| 500 | 100 | 123 | 580 | 350 | 10-100/500 | 10-125/500 | 10-150/500 | 10-175/500 | 10-200/500 | 10-250/500 | ≈ 1.36 (2.03) |
| 500 | 108 | 131 | 580 | 350 | – | 11-125/500 | 11-150/500 | 11-175/500 | 11-200/500 | 11-250/500 | ≈ 1.39 (2.07) |
| 500 | 125 | 148 | 580 | 320 | – | 12-125/500 | 12-150/500 | 12-175/500 | 12-200/500 | 12-250/500 | ≈ 1.45 (2.16) |
| 500 | 137.5 | 160.5 | 580 | 310 | – | – | 137-150/500 | 137-175/500 | 137-200/500 | 137-250/500 | ≈ 1.49 (2.22) |
| 500 | 150 | 173 | 580 | 300 | – | – | 15-150/500 | 15-175/500 | 15-200/500 | 15-250/500 | ≈ 1.54 (2.29) |
| 500 | 162.5 | 185.5 | 580 | 290 | – | – | 162-150/500 | 162-175/500 | 162-200/500 | 162-250/500 | ≈ 1.60 (2.35) |
| 500 | 168 | 191 | 580 | 290 | – | – | – | 17-175/500 | 17-200/500 | 17-250/500 | ≈ 1.60 (2.38) |
| 500 | 175 | 198 | 580 | 280 | – | – | – | – | 18-200/500 | 18-250/500 | ≈ 1.62 (2.41) |
| 500 | 187.5 | 210.5 | 580 | 280 | – | – | – | – | 187-200/500 | 187-250/500 | ≈ 1.67 (2.48) |
| 500 | 200 | 223 | 580 | 250 | – | – | – | – | 20-200/500 | 20-250/500 | ≈ 1.71 (2.54) |
| 600 | 108 | 131 | 680 | 450 | 11-100/600 | 11-125/600 | 11-150/600 | 11-175/600 | 11-200/600 | – | ≈ 1.39 (2.07) |
| 600 | 125 | 148 | 680 | 420 | 12-100/600 | 12-125/600 | 12-150/600 | 12-175/600 | 12-200/600 | 12-250/600 | ≈ 1.45 (2.16) |
| 600 | 137.5 | 160.5 | 680 | 410 | 137-100/600 | 137-125/600 | 137-150/600 | 137-175/600 | 137-200/600 | 137-250/600 | ≈ 1.49 (2.22) |
| 600 | 150 | 173 | 680 | 400 | 15-100/600 | 15-125/600 | 15-150/600 | 15-175/600 | 15-200/600 | 15-250/600 | ≈ 1.54 (2.29) |
| 600 | 162.5 | 185.5 | 680 | 390 | – | 162-125/600 | 162-150/600 | 162-175/600 | 162-200/600 | 162-250/600 | ≈ 1.60 (2.35) |
| 600 | 168 | 191 | 680 | 390 | – | – | 17-150/600 | 17-175/600 | 17-200/600 | 17-250/600 | ≈ 1.60 (2.38) |
| 600 | 175 | 198 | 680 | 380 | – | – | 18-150/600 | 18-175/600 | 18-200/600 | 18-250/600 | ≈ 1.62 (2.41) |
| 600 | 187.5 | 210.5 | 680 | 380 | – | – | 187-150/600 | 187-175/600 | 187-200/600 | 187-250/600 | ≈ 1.67 (2.48) |
| 600 | 200 | 223 | 680 | 350 | – | – | 20-150/600 | 20-175/600 | 20-200/600 | 20-250/600 | ≈ 1.71 (2.54) |
| 650 | 125 | 148 | 730 | 470 | 12-100/650 | 12-125/650 | 12-150/650 | 12-175/650 | 12-200/650 | 12-250/650 | ≈ 1.45 (2.16) |
| 650 | 137.5 | 160.5 | 730 | 460 | 137-100/650 | 137-125/650 | 137-150/650 | 137-175/650 | 137-200/650 | 137-250/650 | ≈ 1.49 (2.22) |
| 650 | 150 | 173 | 730 | 450 | 15-100/650 | 15-125/650 | 15-150/650 | 15-175/650 | 15-200/650 | 15-250/650 | ≈ 1.54 (2.29) |
| 650 | 162.5 | 185.5 | 730 | 440 | – | 162-125/650 | 162-150/650 | 162-175/650 | 162-200/650 | 162-250/650 | ≈ 1.60 (2.35) |
| 650 | 168 | 191 | 730 | 430 | – | 17-125/650 | 17-150/650 | 17-175/650 | 17-200/650 | 17-250/650 | ≈ 1.60 (2.38) |
| 650 | 175 | 198 | 730 | 430 | – | – | 18-150/650 | 18-175/650 | 18-200/650 | 18-250/650 | ≈ 1.62 (2.41) |
| 650 | 187.5 | 210.5 | 730 | 420 | – | – | 187-150/650 | 187-175/650 | 187-200/650 | 187-250/650 | ≈ 1.67 (2.48) |
| 650 | 200 | 223 | 730 | 400 | – | – | 20-150/650 | 20-175/650 | 20-200/650 | 20-250/650 | ≈ 1.71 (2.54) |
| 750 | 137.5 | 160.5 | 830 | 560 | 137-100/750 | 137-125/750 | 137-150/750 | 137-175/750 | 137-200/750 | 137-250/750 | ≈ 1.49 (2.22) |
| 750 | 150 | 173 | 830 | 550 | 15-100/750 | 15-125/750 | 15-150/750 | 15-175/750 | 15-200/750 | 15-250/750 | ≈ 1.54 (2.29) |
| 750 | 162.5 | 185.5 | 830 | 540 | – | 162-125/750 | 162-150/750 | 162-175/750 | 162-200/750 | 162-250/750 | ≈ 1.60 (2.35) |
| 750 | 168 | 191 | 830 | 540 | – | 17-125/750 | 17-150/750 | 17-175/750 | 17-200/750 | 17-250/750 | ≈ 1.60 (2.38) |
| 750 | 175 | 198 | 830 | 530 | – | 18-125/750 | 18-150/750 | 18-175/750 | 18-200/750 | 18-250/750 | ≈ 1.62 (2.41) |
| 750 | 187.5 | 210.5 | 830 | 520 | – | 187-125/750 | 187-150/750 | 187-175/750 | 187-200/750 | 187-250/750 | ≈ 1.67 (2.48) |
| 750 | 200 | 223 | 830 | 500 | – | 20-125/750 | 20-150/750 | 20-175/750 | 20-200/750 | 20-250/750 | ≈ 1.71 (2.54) |
| 850 | 150 | 173 | 930 | 650 | 15-100/850 | 15-125/850 | 15-150/850 | 15-175/850 | 15-200/850 | 15-250/850 | ≈ 1.54 (2.29) |
| 850 | 162.5 | 185.5 | 930 | 640 | 162-100/850 | 162-125/850 | 162-150/850 | 162-175/850 | 162-200/850 | 162-250/850 | ≈ 1.60 (2.35) |
| 850 | 168 | 191 | 930 | 630 | 17-100/850 | 17-125/850 | 17-150/850 | 17-175/850 | 17-200/850 | 17-250/850 | ≈ 1.60 (2.38) |
| 850 | 175 | 198 | 930 | 630 | – | 18-125/850 | 18-150/850 | 18-175/850 | 18-200/850 | 18-250/850 | ≈ 1.62 (2.41) |
| 850 | 187.5 | 210.5 | 930 | 620 | – | 187-125/850 | 187-150/850 | 187-175/850 | 187-200/850 | 187-250/850 | ≈ 1.67 (2.48) |
| 850 | 200 | 223 | 930 | 600 | – | 20-125/850 | 20-150/850 | 20-175/850 | 20-200/850 | 20-250/850 | ≈ 1.71 (2.54) |

| R | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|
| $H^{-0}_{+25}$ | 254 | 304 | 354 | 404 | 454 | 554 |
| K | 430 | 505 | 585 | 665 | 745 | 900 |

**Pitch *T*** = 67 mm/link

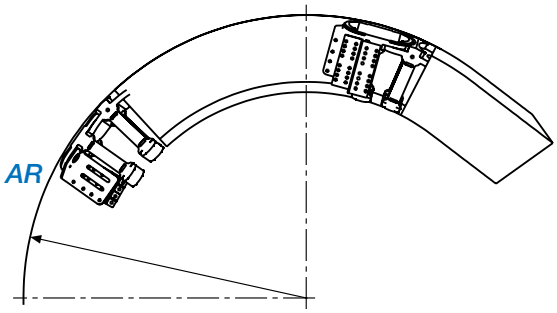
**Links/m** = 15 (1005 mm)

# E-Chain System®
# TwisterChain® New Series TC42
# Installation Dimensions

## Dimensions in mm

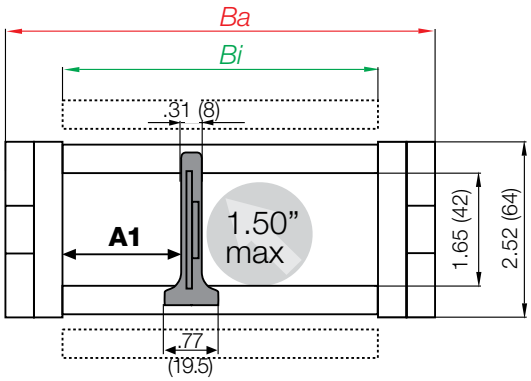
| *AR* (mm) | *R* 100 **A1** (mm) | *R* 125 **A1** (mm) | *R* 150 **A1** (mm) | *R* 175 **A1** (mm) | *R* 200 **A1** (mm) | *R* 250 **A1** (mm) |
|---|---|---|---|---|---|---|
| **400** | 49 | 50 | 51 | 53 | 53 | 53 |
| **500** | 64 | 65 | 66 | 67 | 68 | 71 |
| **600** | 79 | 79 | 80 | 81 | 82 | 85 |
| **650** | 86 | 87 | 87 | 88 | 89 | 92 |
| **750** | 101 | 101 | 102 | 103 | 104 | 106 |
| **850** | 116 | 116 | 117 | 118 | 118 | 120 |

Dimension A1 always with tolerance of ± 2.5 mm

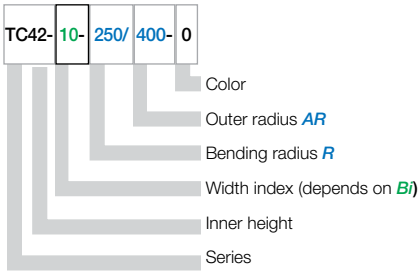



**Note: Outer radius *AR* (see drawing) determines dimension A1!**

## Dimensioning

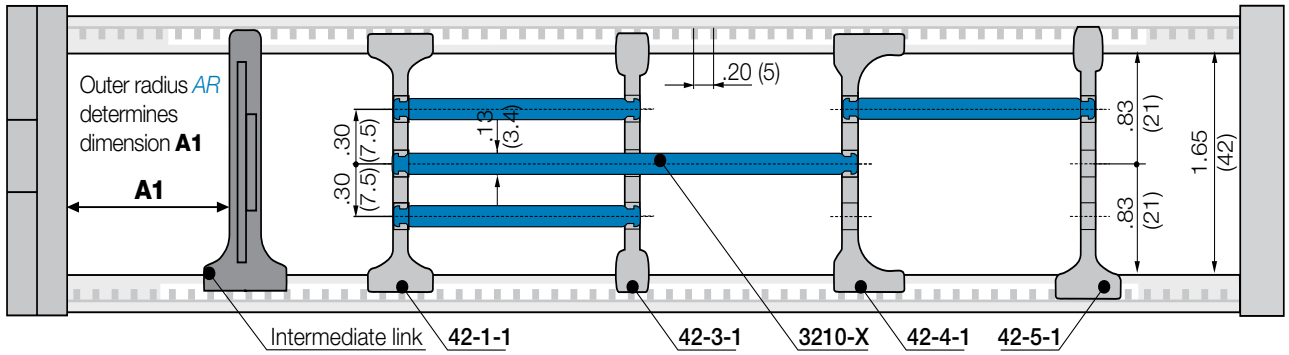



**Part No. structure**




**TC42-10-250/400-0** = E-Chain® snap-open along inner radius from both sides
***Bi* 87.5** mm inner width, ***R* 250** mm bending radius / ***AR* 400** mm outer radius, color black

## Interior Separation




For this series the interior separation elements of **Series E4-42** can be used with the exception of the side plates, **Part No. 386**

***AR*** = Outer radius
***R*** = Bending radius
$X_1$ = Inner machine construction space
$X_2$ = Outer radius ***AR***, including. clearance
***Ba*** = Outer width
***Bi*** = Inner width
***H*** = Nominal clearance height
***K*** = Add-on for bending radius
***A1*** = Distance intermediate link
***T*** = Pitch

# E-Chain System®
# TwisterChain® New Series TC56
## Series TC56 - Snap-open along inner radius from both sides

Dimensions in mm

| *AR* mm | Bi mm | Ba mm | $X_2$ mm | $X_1$ mm | *R* 150 TC56- | *R* 200 TC56- | *R* 250 TC56- | *R* 300 TC56- | *R* 400 TC56- | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 650 | 125 | 155 | 730 | 470 | 12-150/650 | 12-200/650 | 12-250/650 | 12-300/650 | – | ≈ 2.32 (3.45) |
| 650 | 137.5 | 168 | 730 | 460 | – | 13-200/650 | 13-250/650 | 13-300/650 | 13-400/650 | ≈ 2.38 (3.54) |
| 650 | 150 | 180 | 730 | 450 | – | – | 15-250/650 | 15-300/650 | 15-400/650 | ≈ 2.43 (3.62) |
| 650 | 162.5 | 193 | 730 | 440 | – | – | 16-250/650 | 16-300/650 | 16-400/650 | ≈ 2.49 (3.70) |
| 650 | 175 | 205 | 730 | 430 | – | – | – | 17-300/650 | 17-400/650 | ≈ 2.54 (3.78) |
| 650 | 187.5 | 218 | 730 | 420 | – | – | – | 18-300/650 | 18-400/650 | ≈ 2.60 (3.87) |
| 650 | 200 | 230 | 730 | 400 | – | – | – | – | 20-400/650 | ≈ 2.65 (3.95) |
| 750 | 137.5 | 168 | 830 | 560 | 13-150/750 | 13-200/750 | 13-250/750 | 13-300/750 | – | ≈ 2.38 (3.54) |
| 750 | 150 | 180 | 830 | 550 | – | 15-200/750 | 15-250/750 | 15-300/750 | 15-400/750 | ≈ 2.43 (3.62) |
| 750 | 162.5 | 193 | 830 | 540 | – | 16-200/750 | 16-250/750 | 16-300/750 | 16-400/750 | ≈ 2.49 (3.70) |
| 750 | 175 | 205 | 830 | 530 | – | – | 17-250/750 | 17-300/750 | 17-400/750 | ≈ 2.54 (3.78) |
| 750 | 187.5 | 218 | 830 | 520 | – | – | 18-250/750 | 18-300/750 | 18-400/750 | ≈ 2.60 (3.87) |
| 750 | 200 | 230 | 830 | 500 | – | – | 20-250/750 | 20-300/750 | 20-400/750 | ≈ 2.65 (3.95) |
| 850 | 150 | 180 | 930 | 650 | 15-150/850 | 15-200/850 | 15-250/850 | 15-300/850 | 15-400/850 | ≈ 2.43 (3.62) |
| 850 | 162.5 | 193 | 930 | 640 | 16-150/850 | 16-200/850 | 16-250/850 | 16-300/850 | 16-400/850 | ≈ 2.49 (3.70) |
| 850 | 175 | 205 | 930 | 630 | 17-150/850 | 17-200/850 | 17-250/850 | 17-300/850 | 17-400/850 | ≈ 2.54 (3.78) |
| 850 | 187.5 | 218 | 930 | 620 | – | 18-200/850 | 18-250/850 | 18-300/850 | 18-400/850 | ≈ 2.60 (3.87) |
| 850 | 200 | 230 | 930 | 600 | – | – | 20-250/850 | 20-300/850 | 20-400/850 | ≈ 2.65 (3.95) |

| *R* | 150 | 200 | 250 | 300 | 400 |
|---|---|---|---|---|---|
| *H* $^{-0}_{+25}$ | 384 | 484 | 584 | 684 | 884 |
| *K* | 655 | 815 | 970 | 1125 | 1440 |

**Pitch *T*** = 67 mm/link

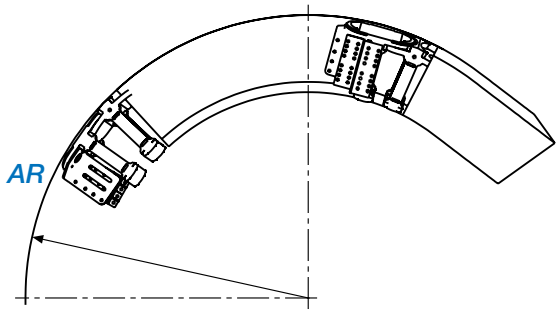
**Links/m** = 15 (1005 mm)

# E-Chain System®
# TwisterChain® New Series TC56
# Installation Dimensions

### Dimensions in mm

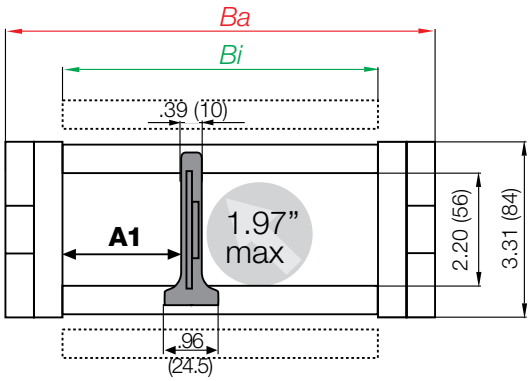
| *AR* (mm) | *R* 150 **A1** (mm) | *R* 200 **A1** (mm) | *R* 250 **A1** (mm) | *R* 300 **A1** (mm) | *R* 400 **A1** (mm) |
|---|---|---|---|---|---|
| **650** | 83 | 85 | 88 | 90 | 97 |
| **750** | 101 | 101 | 102 | 103 | 110 |
| **850** | 116 | 116 | 117 | 118 | 124 |

Dimension A1 always with tolerance of ± 2.5 mm

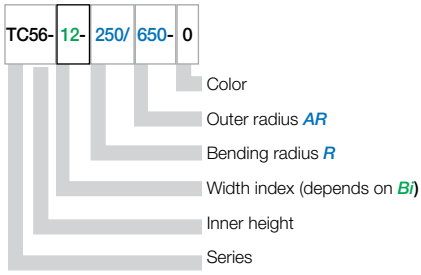



**Note: Outer radius *AR* (see drawing) determines dimension A1!**

## Dimensioning

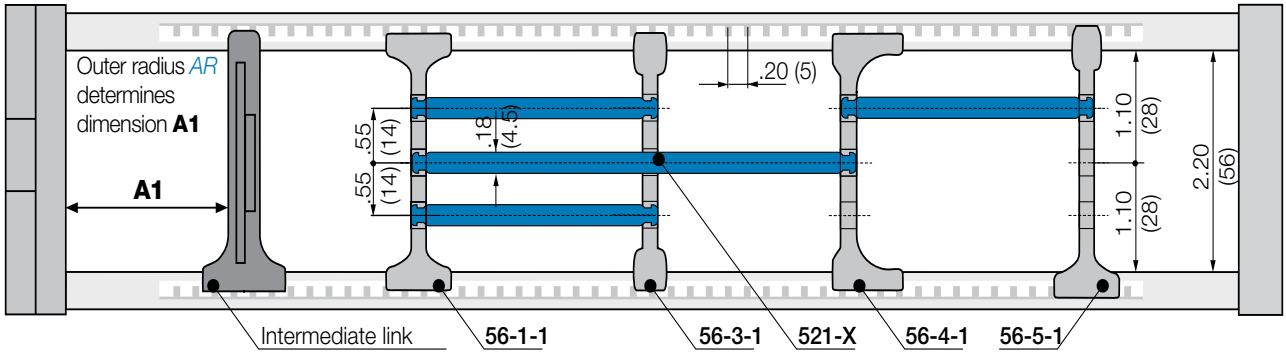



**Part No. structure**




**TC56-12-250/650-0** = E-Chain® snap-open along inner radius from both sides
***Bi* 125** mm inner width, ***R* 250** mm bending radius / ***AR* 650** mm outer radius, color black

## Interior Separation

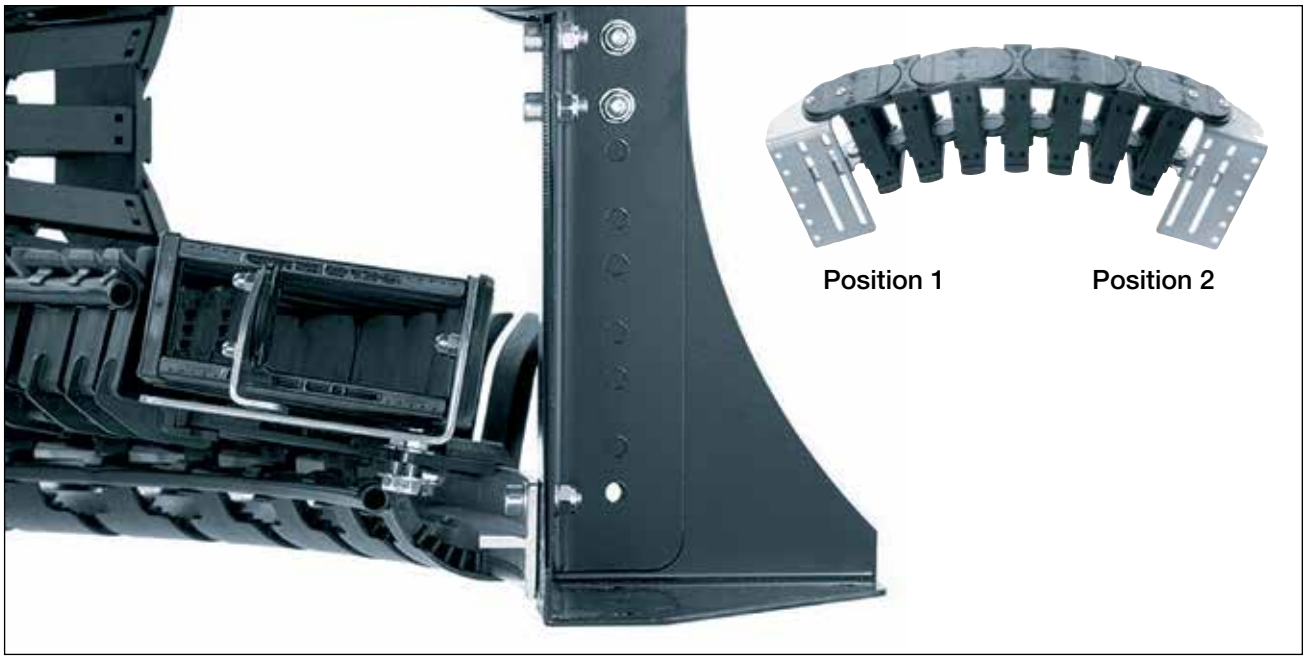



For this series the interior separation elements of **Series E4-56** can be used with the exception of the side plates, **Part No. 402**

***AR*** = Outer radius
***R*** = Bending radius
***X₁*** = Inner machine construction space
***X₂*** = Outer radius ***AR***, including. clearance
***Ba*** = Outer width
***Bi*** = Inner width
***H*** = Nominal clearance height
***K*** = Add-on for bending radius
***A1*** = Distance intermediate link
***T*** = Pitch

# E-Chain System®
# TwisterChain® New Series TC32, TC42, TC56
# Mounting Brackets

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec




## **Steel, one-piece** - Recommended for unsupported and rotatory applications

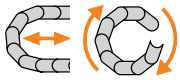
| For Series | Part No. Full set | Part No. Position 1 | Part No. Position 2 |
|---|---|---|---|
| TC32 | **TC3200-34** | **TC3200-30** | **TC3200-40** |
| TC42 | **TC4200-34** | **TC4200-30** | **TC4200-40** |
| TC56 | **TC5600-34** | **TC5600-30** | **TC5600-40** |

The guide trough must be mounted at the fixed point of the TwisterChain®.

The following bolted connections are permitted:

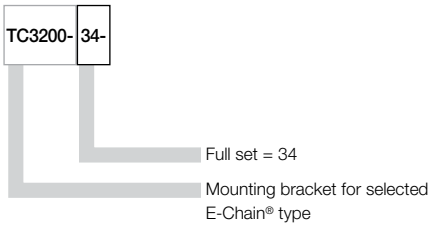
- Bore Hole: 4 x Ø 6.6 - 7 mm
- Mounting only with bolts: 4 x bolts M6

Other connection dimensions for mounting the guide trough Type 01 ➤ **from page 8.102**

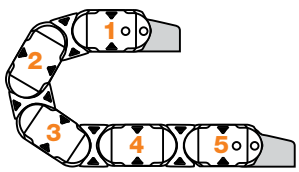


- One part for all E-Chain® widths
- Electrically conductive
- Universal use
- Material: Stainless steel: 1.4301

**Part No. structure**




**Note:** TwisterChain® E-Chains® must always end with an outer side link. There must always be an odd number of links. At the moving end an outer side link always forms the first E-Chain® link.
Please note when calculating!




**Single-part order**

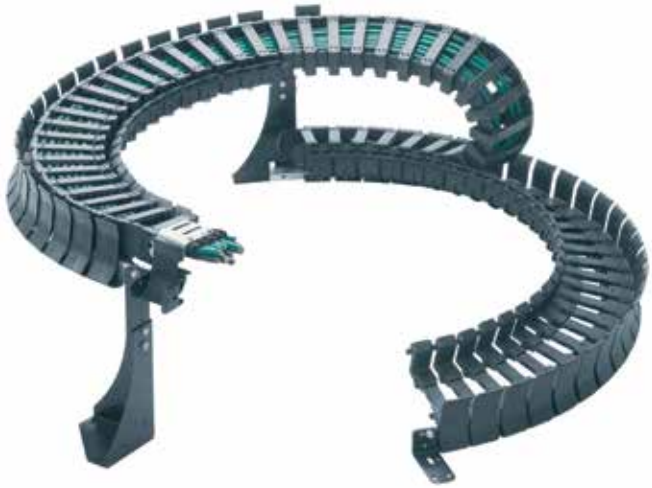
Position 1
**TC3200-30**
Position 1
**TC3200-40**

# E-Chain System®
# TwisterChain® New Series TC32, TC42, TC56
# Guide Trough



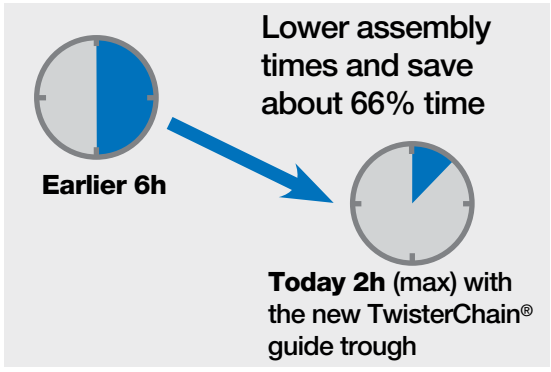
## New generation of TwisterChain® guide troughs - Save assembly time and costs - increase cycle life!

TwisterChain®
in a guide trough
for rotary movements on an
articulated robot - long service
life and robust: more than
1,000,000 cycles tested
successfully with prototype

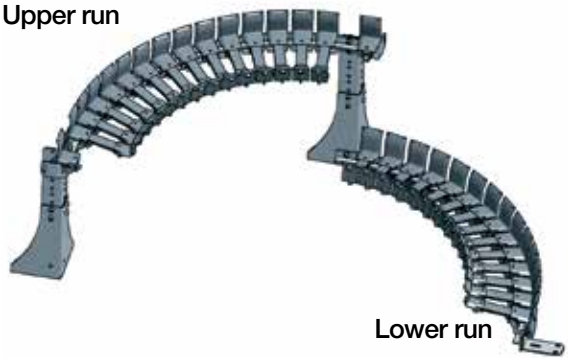


With the new TwisterChain® trough type 01, the previously complex adjustment work is clearly minimized. Assembly time is reduced from 6 h to 2 h. While reducing noise levels, travel speed and service life can be increased, thanks to an almost all-plastic design. Available for all TwisterChain® of the new and previous range.

- Suitable for high dynamics, because of the full and all-side guidance of the TwisterChain®
- Much smoother and quieter motion of the TwisterChain® in the trough due to continuous guidance of upper run
- Upper run guided in the new polymer trough over the full width
- Preassembled delivery possible
- Easy adjustment and alignment and handling
- Assembly time reduced from 6 hours to 2 hours




Upper run



Lower run

Less parts, easier handling -
Illustration shows a 180° application

Easy adjustment and alignment on the robot, predefined angles and predrilled mounting holes for height fixation

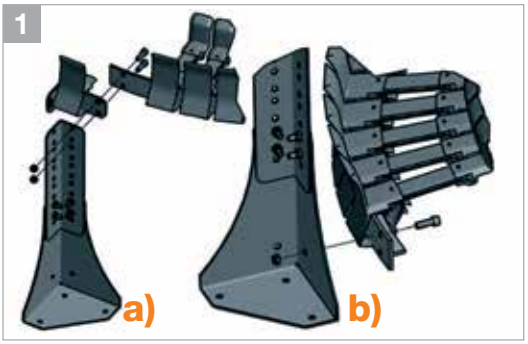
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® New Series
# Assembly Instructions

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Assembling - TwisterChain®

1

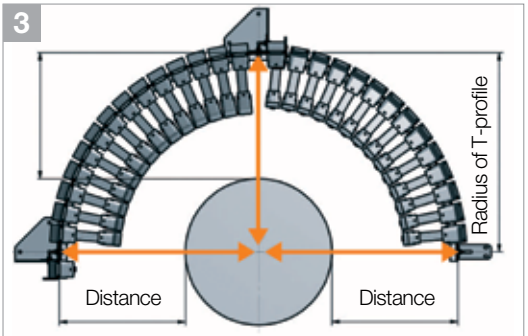



Check order for completeness. Screw together individual parts according to instructions...

2

...then assemble the complete guide trough with upper run and lower run

3



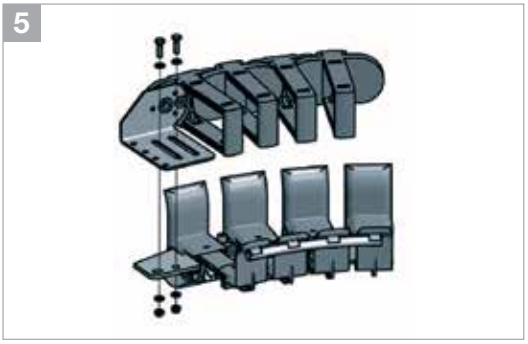

The T-profile should have 3 points equidistant from the pivot point

Align trough on the pivot point and then screw on

4

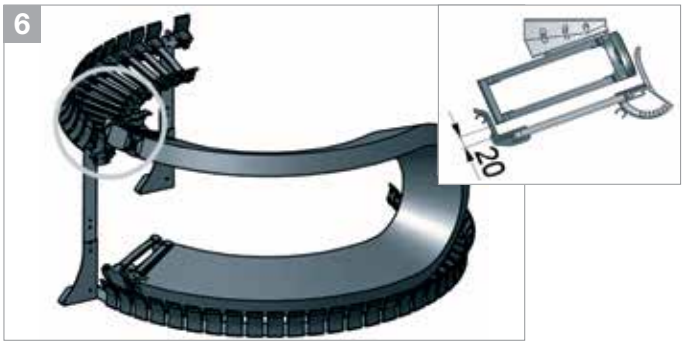
Alignment by defined angular and hole matrix for easy height fixing

5



TwisterChain® installation in the trough - screw the fixed end of E-Chain ® onto the trough

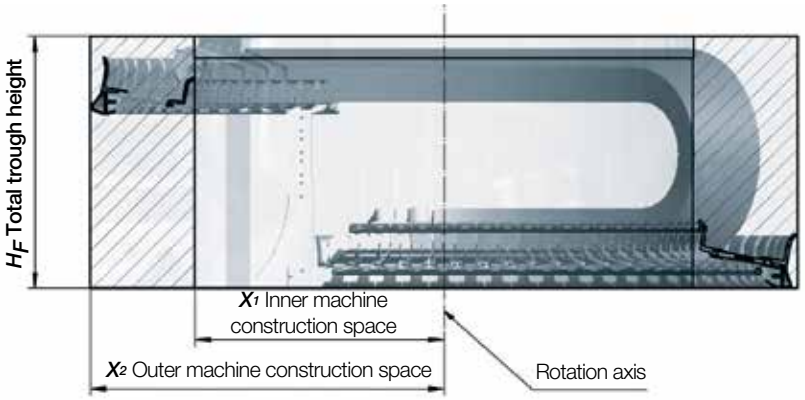
6

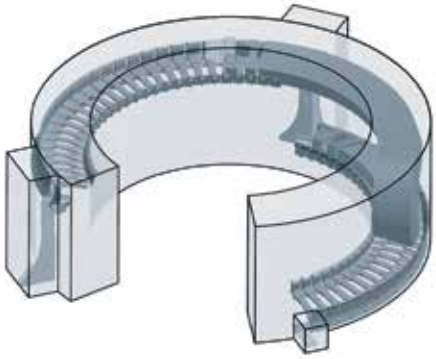



Attachment of the E-Chain® on the customer's moving end arm by screwing (moving arm provided by customer)

**Guide Trough Type 02 - continues to be available for special applications.**
**Product Range ➤ page 8.127**

# E-Chain System®
# TwisterChain® New Series
# Guide Trough Dimensions



Minimum required construction space of TwisterChain® Guide Trough system

## Installation Dimensions

$X_1$ Inner machine construction space and
$X_2$ Outer machine construction space of Guide Trough

| *AR* (mm) | $X_2$ mm) | $X_1$ (mm) **depending on** *Bi* (mm) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TC32** | | 87,5 | 100 | 108 | 125 | 137.5 | 150 | | | | | |
| 400 | 480 | 270 | 250 | 250 | 220 | 210 | 200 | | | | | |
| 500 | 580 | – | 350 | 350 | 320 | 310 | 300 | | | | | |
| 600 | 680 | – | – | 450 | 420 | 410 | 400 | | | | | |
| **TC42** | | 87,5 | 100 | 108 | 125 | 137.5 | 150 | 162.5 | 168 | 175 | 187.5 | 200 |
| 400 | 480 | 270 | 250 | 250 | 220 | 210 | 200 | 190 | 190 | 180 | – | – |
| 500 | 580 | – | 350 | 350 | 320 | 310 | 300 | 290 | 290 | 280 | 280 | 250 |
| 600 | 680 | – | – | 450 | 420 | 410 | 400 | 390 | 390 | 380 | 380 | 350 |
| **TC56** | | | – | – | 125 | 137.5 | 150 | 162.5 | – | 175 | 187.5 | 200 |
| 650 | 730 | – | – | – | 470 | 460 | 450 | 440 | – | 430 | 420 | 400 |
| 750 | 830 | – | – | – | – | 560 | 550 | 540 | – | 530 | 520 | 500 |
| 850 | 930 | – | – | – | – | – | 650 | 640 | – | 630 | 620 | 600 |

## Construction height

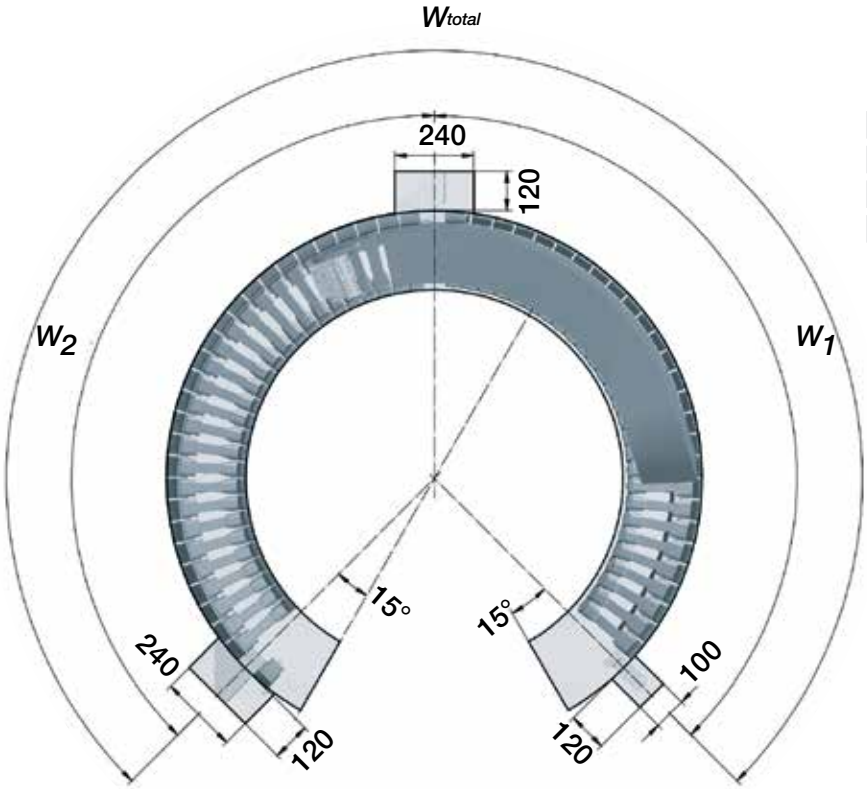
$H_F$ depending on bending radius of TwisterChain® Guide Trough

| *R* [mm] | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 400 |
|---|---|---|---|---|---|---|---|---|
| **Series** | $H_F$ **Construction height** [mm] | | | | | | | |
| **TC32** | 370 | 420 | 470 | 520 | 570 | 670 | – | – |
| **TC42** | 380 | 430 | 480 | 530 | 580 | 680 | – | – |
| **TC56** | – | – | 500 | – | 600 | 700 | 800 | 1000 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# Mounting Bracket

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec




**Rotation angle** | $W_1 + W_{total}$

| **$W_{total}$ rotation angle** System | **$W_1$ rotation angle** of lower run trough |
|---|---|
| 90° | 45° |
| 180° | 90° |
| 270° | 135° |
| 360° | 180° |

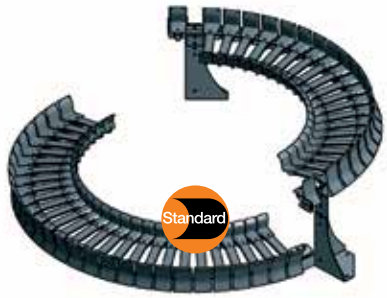
**Rotation angle for 360°** - $W_2$ angle of upper run (°) TwisterChain® Guide Trough

| *AR* (mm) | Series | *R* [mm] | 100 | 125 | 150 | 175 | 200 | 250 | 300 | 400 |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | $W_2$ Rotation angle | | | | | | | |
| 400 | TC32/TC42 | | 90° | 90° | 90° | 90° | 90° | 90° | 90° | 90° |
| 500 | TC32/TC42 | | 90° | 90° | 90° | 90° | 90° | 90° | 90° | 90° |
| 600 | TC32/TC42 | | 135° | 135° | 135° | 135° | 90° | 90° | 90° | 90° |
| 650 | TC56 | | 135° | 135° | 135° | 135° | 90° | 90° | 90° | 90° |
| 750 | TC56 | | 135° | 135° | 135° | 135° | 135° | 135° | 90° | 90° |
| 850 | TC56 | | 135° | 135° | 135° | 135° | 135° | 135° | 135° | 135° |

*AR*= Outer radius E-Chain®
*IR* = Inner radius E-Chain®
*R* = Bending radius

$X_1$ = Inner machine construction space
$X_2$ = Outer radius *AR*, including clearance
$H_F$=Total trough height

$W_1$ = Angle of lower run
$W_2$ = Angle of upper run
$W_{total}$=Rotation angle of system




**9XXX-31 Complete troughs**
(**with base support**, height adjustment and attachment angles

**9XXX-32 Upper and lower run trough**
**without base support** and height adjustment
**Special variant:** Customer builds base support

**9XXX-30 Lower run trough**
**with attachment angles**
**Special option:**
Customer builds upper run trough

## **Product Range** - TwisterChain® Guide Troughs Type 01

| For Series | Outer radius *AR* [mm] | Rotation angle from-up to α (°) | Part No. Trough complete | Part No. Trough upper/lower run | Part No. Trough lower run |
|---|---|---|---|---|---|
| TC32 / TC42 | 400 | 0 - 90° | 9XXXX-31-90-400/*Bi*-*R* | 9XXXX-32-90-400/*Bi*-*R* | 9XXXX-30-90-750/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-400/*Bi*-*R* | 9XXXX-32-180-400/*Bi*-*R* | 9XXXX-30-180-400/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-400/*Bi*-*R* | 9XXXX-32-270-400/*Bi*-*R* | 9XXXX-30-270-400/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-400/*Bi*-*R* | 9XXXX-32-360-400/*Bi*-*R* | 9XXXX-30-360-400/*Bi*-*R* |
| | 500 | 0 - 90° | 9XXXX-31-90-500/*Bi*-*R* | 9XXXX-32-90-500/*Bi*-*R* | 9XXXX-30-90-500/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-500/*Bi*-*R* | 9XXXX-32-180-500/*Bi*-*R* | 9XXXX-30-180-500/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-500/*Bi*-*R* | 9XXXX-32-270-500/*Bi*-*R* | 9XXXX-30-270-500/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-500/*Bi*-*R* | 9XXXX-32-360-500/*Bi*-*R* | 9XXXX-30-360-500/*Bi*-*R* |
| | 600 | 0 - 90° | 9XXXX-31-90-600/*Bi*-*R* | 9XXXX-32-90-600/*Bi*-*R* | 9XXXX-30-90-600/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-600/*Bi*-*R* | 9XXXX-32-180-600/*Bi*-*R* | 9XXXX-30-180-600/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-600/*Bi*-*R* | 9XXXX-32-270-600/*Bi*-*R* | 9XXXX-30-270-600/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-600/*Bi*-*R* | 9XXXX-32-360-600/*Bi*-*R* | 9XXXX-30-360-600/*Bi*-*R* |
| TC56 | 650 | 0 - 90° | 9XXXX-31-90-650/*Bi*-*R* | 9XXXX-32-90-650/*Bi*-*R* | 9XXXX-30-90-650/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-650/*Bi*-*R* | 9XXXX-32-180-650/*Bi*-*R* | 9XXXX-30-180-650/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-650/*Bi*-*R* | 9XXXX-32-270-650/*Bi*-*R* | 9XXXX-30-270-650/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-650/*Bi*-*R* | 9XXXX-32-360-650/*Bi*-*R* | 9XXXX-30-360-650/*Bi*-*R* |
| | 750 | 0 - 90° | 9XXXX-31-90-750/*Bi*-*R* | 9XXXX-32-90-750/*Bi*-*R* | 9XXXX-30-90-750/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-750/*Bi*-*R* | 9XXXX-32-180-750/*Bi*-*R* | 9XXXX-30-180-750/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-750/*Bi*-*R* | 9XXXX-32-270-750/*Bi*-*R* | 9XXXX-30-270-750/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-750/*Bi*-*R* | 9XXXX-32-360-750/*Bi*-*R* | 9XXXX-30-360-750/*Bi*-*R* |
| | 850 | 0 - 90° | 9XXXX-31-90-850/*Bi*-*R* | 9XXXX-32-90-850/*Bi*-*R* | 9XXXX-30-90-850/*Bi*-*R* |
| | | 90° - 180° | 9XXXX-31-180-850/*Bi*-*R* | 9XXXX-32-180-850/*Bi*-*R* | 9XXXX-30-180-850/*Bi*-*R* |
| | | 180° - 270° | 9XXXX-31-270-850/*Bi*-*R* | 9XXXX-32-270-850/*Bi*-*R* | 9XXXX-30-270-850/*Bi*-*R* |
| | | 270° - 360° | 9XXXX-31-360-850/*Bi*-*R* | 9XXXX-32-360-850/*Bi*-*R* | 9XXXX-30-360-850/*Bi*-*R* |

Supplement Part No. **9XXXX** with required Series **(TC32, TC42 or TC56)**, ***Bi*** and **bending radius *R*** ➤ **9TC32-31-180-600/12-250**

**9TC32-31-180-600/12.250**
9XXXX-31-180-600/*Bi*. *R*

### Order key Guide trough

*R* - Bending radius, please add appropriate value
*Bi* - Width index, please add appropriate value
Outer radius E-Chain®
Rotation angle of application (90°, 180°, 270°, 360°)
Trough version
Guide Trough of selected Series

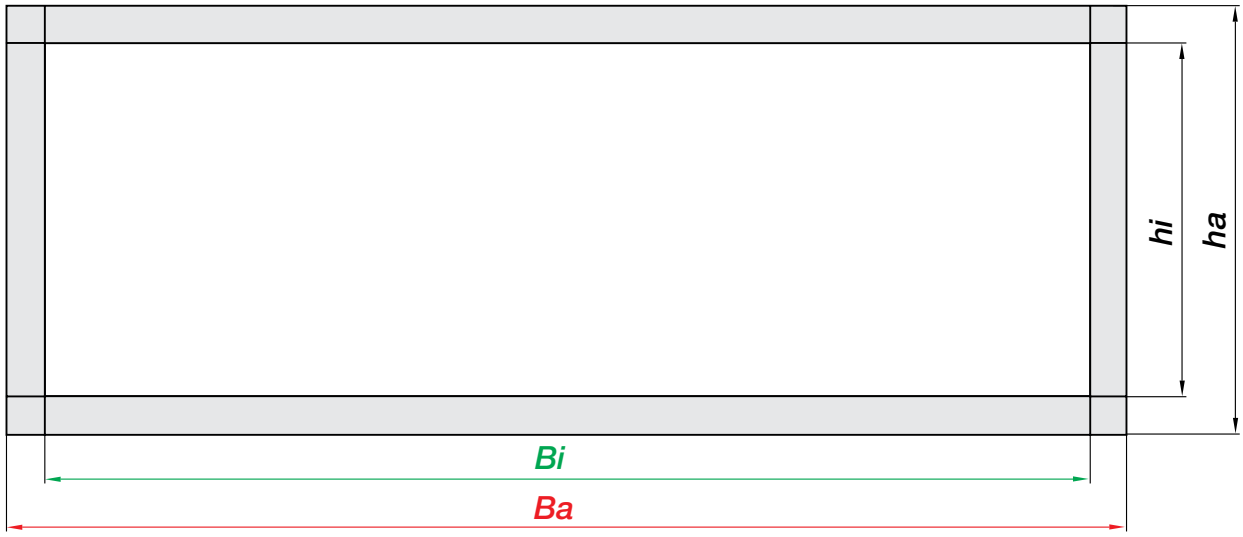
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# Calculation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec



## This calculation sheet should help you to select the right igus® TwisterChain® System for your application.




**Note:** To find the correct Series, refer to the thickest cable diameter, plus cable clearance of approx. 20% of the E-Chain® interior.

**TwisterChain® New Series** ☐ TC32 ☐ TC42 ☐ TC56

**Existing installation space**

$X_1$ max _____ $X_2$ max _____ $H_F$ max _____

**E-Chain® data**

Outer radius *AR* _____ Inner radius *IR* _____

Bending radius *R* _____ Rotation angle (°) _____

**Guide trough** ☐ yes ☐ no

**Part No. trough Type 01** 9TC___-__-___-___/__-___

Order example 9TC32-31-180-600/12-250

**Supporting structure necessary** ☐ yes ☐ no

The guide trough part number includes all the necessary elements for proper operation. The rotation angle is dependent upon support for the upper run and should be assembled on-site. If on-site assembly is not possible. we will deliver a supporting structure which can be assembled on the floor and is based on the height of the lower trough run. If necessary, we will design a supporting structure specially adapted to your installation!

# E-Chain System®
# TwisterChain® Series
# Designing



| | |
|---|---|
| Date: | Telephone: 401-438-2200 or 800-521-2747<br>Fax: 401-438-7270 |
| From:<br><br><br><br>Telephone:<br>Fax: | To:<br>igus,inc.<br>Technical Sales<br>E-Chain Systems®<br>P.O. Box 14349<br>East Providence, RI 02914 |

Please supply us with your application data. We will then send you a full analysis with cable/layout suggestion and a quotation immediately. Please consult igus® should you have any questions.
Individual components:

☐ TwisterChain® ☐ Chainflex® high-flex cables ☐ Guide trough ☐ Pre-assembled

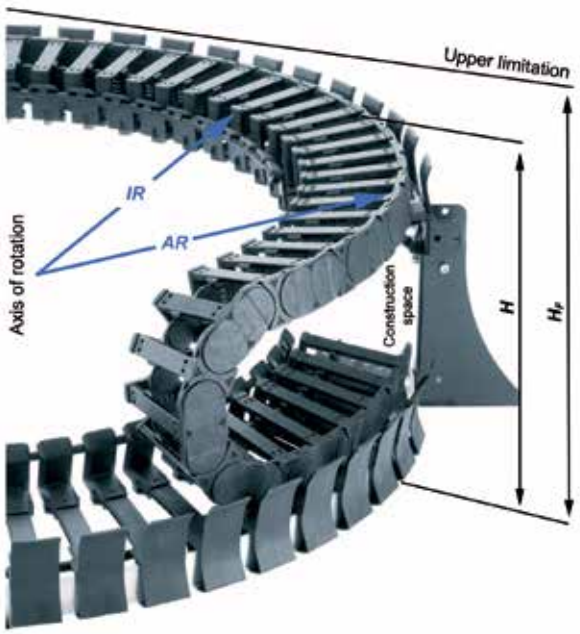
## Cable and Hose package for igus® TwisterChain® New

| Number | Type | Ø | Weight (lbs/ft) | Permitted Bending Radius |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## Dimensions

$X_1$ in mm _____
$X_2$ in mm _____
$H_F$ in mm _____
Angle of rotation $\alpha$* in ° _____

* On machine elements which move to the left and to the right following a circular path, the angle of rotation can be determined by adding the two angles.




## Operating data

Rotations/day _____
Days/year _____
Speed in ft/s _____
Acceleration in ft/s² _____

## Environment

Temperature in °F _____
Moisture ☐ yes ☐ no

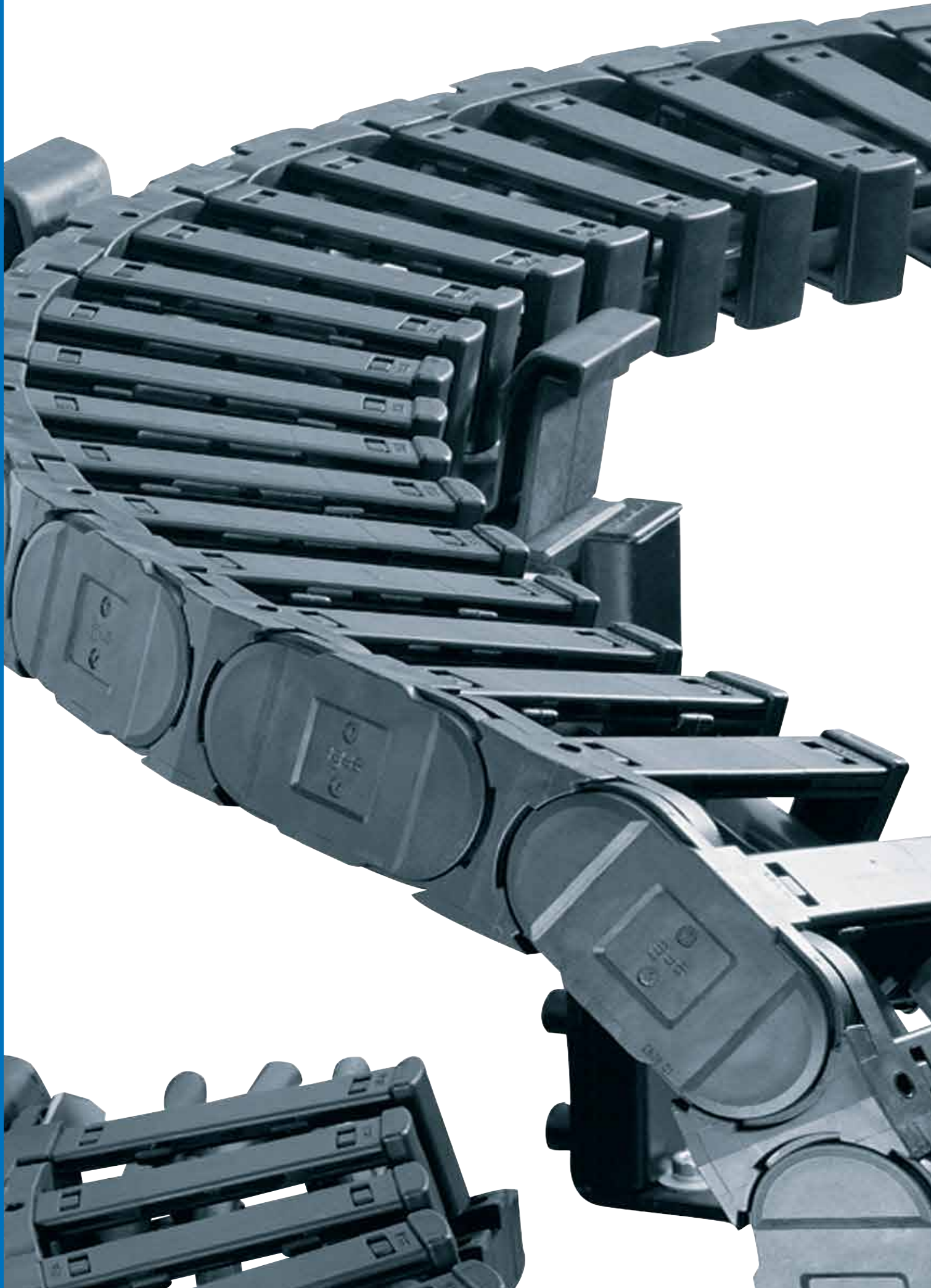
Remarks:

_____
_____
_____
_____

**Please copy, fill in, and fax this page.**

**Thank you!**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



igus®

# TwisterChain®

## CLASSIC

First generation.
Circular and
spiral movements
up to 540°

**For new applications we recommend:**

**TwisterChain® New TC32 (2808), TC42 (3808), and TC56 (4008)**

# TwisterChain® - Circular and spiral movements

TwisterChain® are modular and rugged E-Chains® for circular and spiral movements. They safely supply robots on the rotary axis with energy and media.

- Circular, spiral motions up to 540°
- Fast cable replacement
- Modular, rugged design - variable widths
- Cable-friendly interior
- Crossbars snap open on both sides
- New guide troughs Type 01 and Type 02 (up to 360° motion)
- Variable interior separation
- Applicable in rotational speeds of up to 13.12 ft/s (4 m/s)
- With steel mounting brackets (electrically conductive)

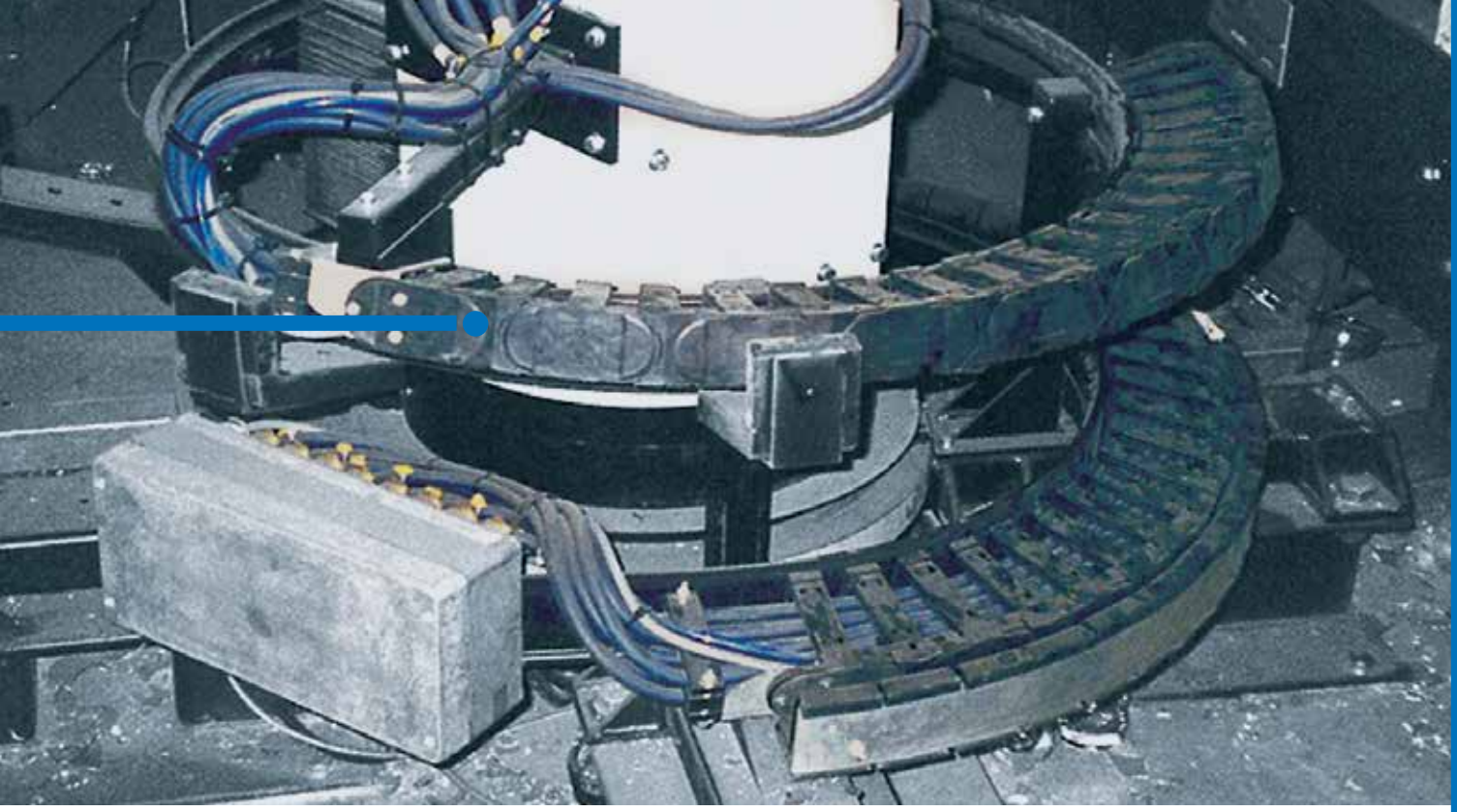
**Typical industries and applications**

- Robots
- Handling machines
- Packaging machines
- Glass machines
- General mechanical engineering

Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

Two different types of Guide Trough Systems available



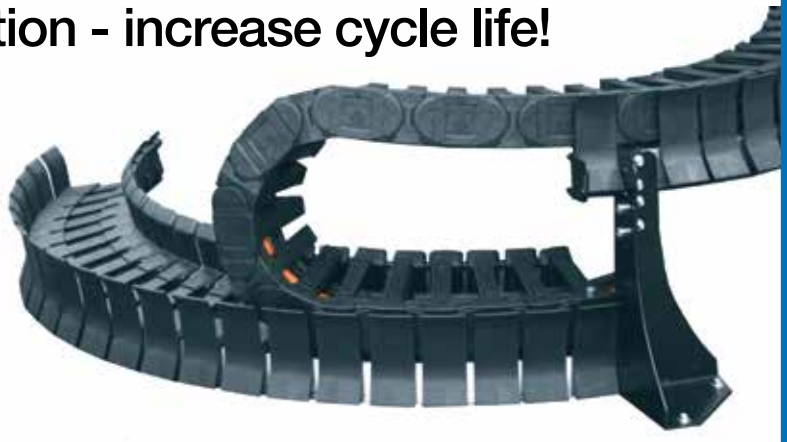
Combined spiral and rotary movement - igus® Series TwisterChain®

TwisterChain® for continuous industrial operation on a buckling arm robot (for welding applications, rotary movement 420°)

The robust link design allows also safety work in a dirty environment

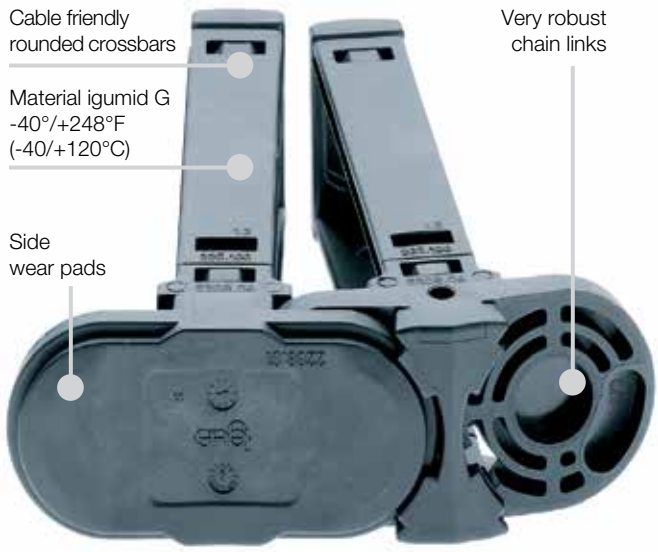
# Save assembly time and costs - Better guidance for circular motion - increase cycle life!

With the new TwisterChain® trough, complex adjustment work is eliminated and assembly time is reduced from six hours to just two hours. Thanks to its almost all-plastic design, noise levels are reduced while travel speed and service life are increased. Now available for widths and radii on TwisterChain® models series 2808, 3808 and 4008. Please call igus® for more information.



New guide trough system - Type 01

# E-Chain System®
# TwisterChain® Series




## Select this modular “spiral” E-Chain® for:

- igus® TwisterChain® for circular motions up to 540° (with special attachments)
- Fast cable change
- Modular design - variable widths
- Cable-friendly interior
- Crossbars can be opened on both sides
- New Guide Troughs Type 01 and Type 02 (circular motions up to 360°)
- Variable interior separation
- For rotational speeds of up to 13.12 ft/s (4 m/s)
- With steel (electrically conductive) mounting brackets
- You can find more technical data about the material, chemical resistance, temperatures ➤ **Design, chapter 1**

## Selection table

| Series | Inner height *hi* | | Inner width *Bi* | | Outer width *Ba* | | Outer height *ha* | | Bending radius *R* | | Circular Radii AR | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| **2208-** | 1.10 | (28) | 2.07-4.43 | (52.5-112.5) | 3.15-5.51 | (80-140) | 1.65 | (42) | 2.17-5.91 | (055 - 150) | 11.81 | (300) |
| **2808-** | 1.26 | (32) | 1.97-5.91 | (50-150) | 3.19-7.13 | (81-181) | 2.13 | (54) | 3.94-9.84 | (100 - 250) | 15.75-23.62 | (400 - 600) |
| **3808-** | 1.65 | (42) | 1.97-7.87 | (50-200) | 3.35-9.25 | (85-235) | 2.52 | (64) | 3.94-9.84 | (100 - 250) | 15.75-23.62 | (400 - 600) |
| **4008-** | 2.20 | (56) | 1.97-7.87 | (50-200) | 3.66-9.57 | (93-243) | 3.31 | (84) | 5.91-15.75 | (150 - 400) | 25.59-33.46 | (650 - 850) |

Guide Trough Type 01 - Save assembly time and costs -
Better guidance for circular motion - increase cycle life! ➤ See page 8.123

Guide Trough Type 02 - continues to be available for special applications ➤ See page 8.127

# E-Chain System®
# TwisterChain® Series

1.10 | 1.26 | 1.65 | 2.20

## Price Index

●●◐

## Special Options Available

Circular movements up to 540° possible (with special attachments)

UL94-V2 classifications upon request

Two different types of Guide Trough Systems available

## Assembly Tips

**Opening - push a screwdriver down vertically into the opening crossbar's groove. Using the screwdriver as a lever, loosen the opening crossbar**

## Usage Guidelines

- If you require variable interior separation
- If cable/hose accessibility on both sides is required
- If rotational speeds up to 90°/s are required
- For spiral motion up to 540° possible with special attachments

- If very small or large diameters are required
  ➤ **Design, Chapter 1**
- For applications using rotation angles over 400° please consult igus

## Features & Benefits

1. Dirt-repellent exterior
2. Modular design - variable widths
3. Spiral chain for rotary motion up to 540° (with special attachments)
4. Crossbars which can be opened on both sides
5. Interior separation possible
6. Cable-friendly interior
7. Standard guide troughs available from stock

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 6.56 ft (2 m) **2808-087-175/500-0** | **E-Chain®** |
| With 2 separators **282** assembled every 2nd link | **Interior Separation** |
| 1 Set **28080-34** | **Mounting Bracket** |

# E-Chain System®
# TwisterChain® Series
# Selecting the correct TwisterChain®



If you would like us to design your TwisterChain® application, simply supply us with your requirements. Please use the igus® system design form at the end of this chapter. If you would like to specify the chain and the guide trough yourself, please work through the following points and enter the results on the calculation sheet at the end of the chapter.

## 1. Determine the series and chain width

Specify which cables you would like to use for the chain. The type of cable(s) and the largest cable diameter determine the series and chain width selection. We recommend that you allow for a cable clearance of approx 20% of the chain's inner height and width. For instance, you must choose Series 3808 for a cable diameter of 1.18 (30 mm).

## 2. Specify the outer and inner radius

Determine the construction space available to you (dimensions $X_1$ and $X_2$)

**Example:** α = 220°/max. cable diameter .94" (24 mm) → Series 2808

**$X_2$ = 22.83 (580 mm) → $AR$ = 19.69 (500 mm)**

**$X_1$ = 12.20 (310 mm) → $IR_{min}$ = 15.35 (390 mm) → selection table → 15.43 (392 mm)**

## 3. Specify the bending radius

$H_F$ = 18.11 (460 mm) → $H \leq$ 16.14 (410 mm) → $R = \frac{H\text{-}ha}{2}$ = 7.00 (178 mm) → R175*

*(next smallest radius)

➤ Result: Series 2808, **Part No. 2808-087-175/500**

## 4. Calculate the required number of links

Number of links: $= \frac{\pi \times AR \times \alpha}{360° \times T} + \frac{K}{T}$

- The resulting number of links must always be rounded up!
- The mounting brackets may be attached only to the outside plates of the TwisterChain®. Consequently, the number of links **must always be rounded up to the next highest odd number!**

## Legend

| | |
|---|---|
| ***a*** | = Acceleration |
| α | = Angle of rotation |
| ***AR*** | = Outer E-Chain radius |
| ***Ba*** | = Outer E-Chain width |
| ***Bi*** | = Inner width |
| $FZ_{max}$ | = Max. additional load |
| ***H*** | = Nominal clearance height |
| ***ha*** | = Outer E-Chain height |
| ***hi*** | = Inner E-Chain height |
| $H_F$ | = Required clearance height incl. 1.97" (50 mm) clearance |
| ***IR*** | = Inner radius |
| ***K*** | = Series-dependent add-on for bending radius |
| ***n*** | = Number of links |
| ***R*** | = E-Chain Bending radius |
| ***T*** | = Pitch |
| ***v*** | = Speed |
| $X_1$ | = Inner machine construction space |
| $X_2$ | = Outer radius, incl. clearance |
| $R_{LK}$ | = Distance pivot point/ outer mounting holes |

The following clearances are absolutely essential for proper design function:

$IR_{min}$ = $X_1$ + 3.15" (80 mm)

$X_{2\,min}$ = $AR$ + 3.15" (80 mm)

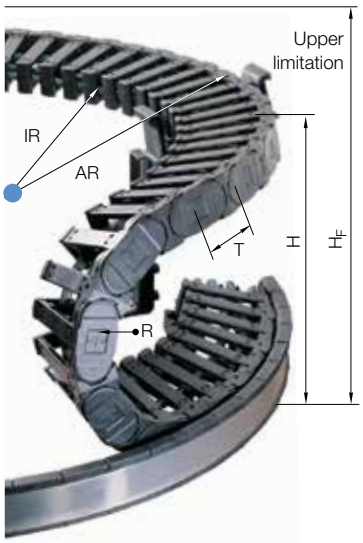
$H_F$ = $H$ + 1.97" (50 mm)

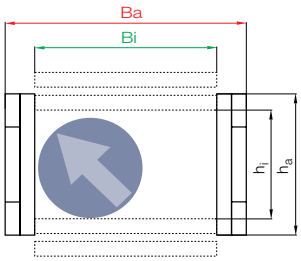
**Chain height including clearance**

## Recommendations for design without additional components

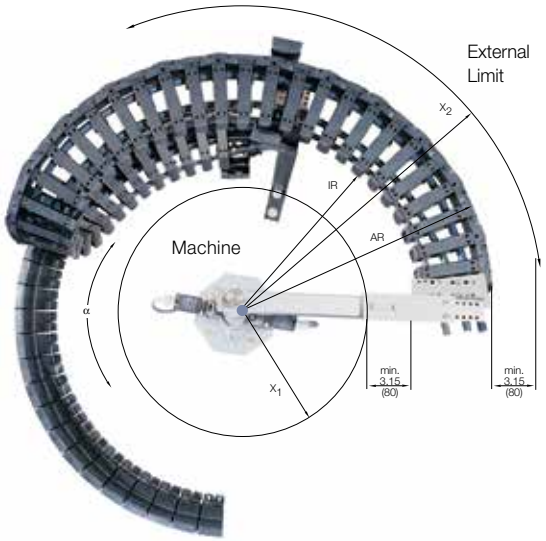
| Series | $FZ_{max.}$ α 180° | | $FZ_{max.}$ α 360° | | $v$ an $AR$ permitted | | $a$ an $AR$ max. | | $R$ max. | | $AR$ permitted | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | lbs/ft | (kg/m) | lbs/ft | (kg/m) | ft/s | (m/s) | ft/s² | (m/s²) | in. | (mm) | in. | (mm) |
| **2208-** | 1.01 | (1.5) | .67 | (1) | .98-3.28 | (0.3-1) | 6.56 | (2) | 3.94 | (100) | 11.81 | (300) |
| **2808-** | 1.34 | (2) | .67 | (1) | .98-3.28 | (0.3-1) | 6.56 | (2) | 5.91 | (150) | 17.72-21.65 | (450 - 550) |
| **3808-** | 2.02 | (3) | 1.21 | (1.8) | .98-3.28 | (0.3-1) | 6.56 | (2) | 7.87 | (200) | 17.72-21.65 | (450 - 550) |
| **4008-** | 2.69 | (4) | 1.68 | (2.5) | .98-3.28 | (0.3-1) | 6.56 | (2) | 9.84 | (250) | 23.62-27.56 | (600 - 700) |

**If your calculations exceed our recommendations, please contact igus® We offer special solutions and many additional components!**




See Legend at upper right for drawing definitions.

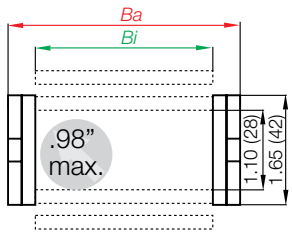


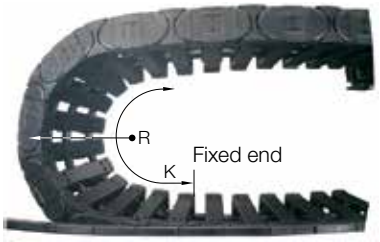

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

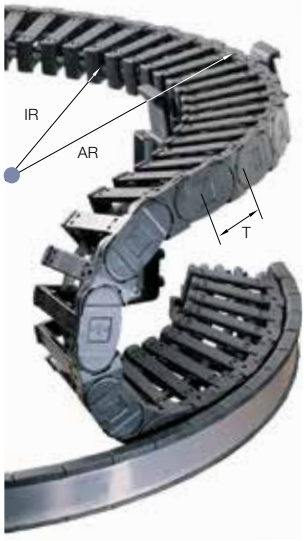
# E-Chain System®
# TwisterChain® Series 2208

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

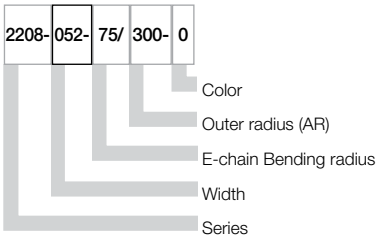
## Series 2208 (snap-open along inner and outer radius)




**Part No. structure**




**Legend**

| | |
|---|---|
| ***AR*** | = Outer radius |
| ***IR*** | = Inner radius |
| ***R*** | = E-Chain Bending radius |
| ***T*** | = Pitch |
| ***K*** | = Series-dependent add-on for bending radius |

| R | 2.17 (55) | 2.48 (63) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) |
|---|---|---|---|---|---|---|
| K | 10.43 (265) | 11.42 (290) | 12.99 (330) | 16.14 (410) | 19.09 (485) | 22.24 (565) |
| T | 1.73 (44) | 1.73 (44) | 1.73 (44) | 1.73 (44) | 1.73 (44) | 1.73 (44) |

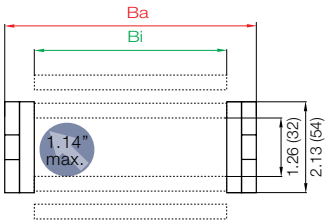
| Bi in. (mm) | Ba in. (mm) | AR in. (mm) | IR in. (mm) | R 2.16 (55) 2208-... | R 2.48 (63) 2208-... | R 2.95 (75) 2208-... | R 3.94 (100) 2208-... | R 4.92 (125) 2208-... | R 5.91 (150) 2208-... | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2.07 (52.5) | 3.15 (80) | 11.81 (300) | 8.94 (227) | -052-55/300 | -052-63/300 | -052-75/300 | -052-100/300 | -052-125/300 | -052-150/300 | .81 (1.20) |
| 2.46 (62.5) | 3.54 (90) | 11.81 (300) | 8.54 (217) | – | – | -062-75/300 | -062-100/300 | -062-125/300 | -062-150/300 | .83 (1.24) |
| 2.93 (74.5) | 4.02 (102) | 11.81 (300) | 8.07 (205) | – | – | – | -074-100/300 | -074-125/300 | -074-150/300 | .87 (1.29) |
| 3.44 (87.5) | 4.53 (115) | 11.81 (300) | 7.56 (192) | – | – | – | -087-100/300 | -087-125/300 | -087-150/300 | .91 (1.35) |
| 4.43 (112.5) | 5.51 (140) | 11.81 (300) | 6.57 (167) | – | – | – | – | -112-125/300 | -112-150/300 | .98 (1.46) |

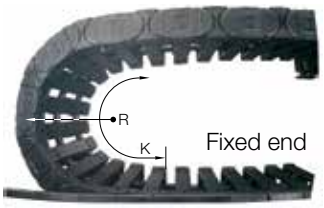
**Example Part No. 2208-112-150/300**

## Interior Separation: Series 2208 TwisterChain

➤ All interior elements of the **E4/100 Series 220 Energy Chain®** may be used with the Series 2208 TwisterChain, **Chapter 6.**

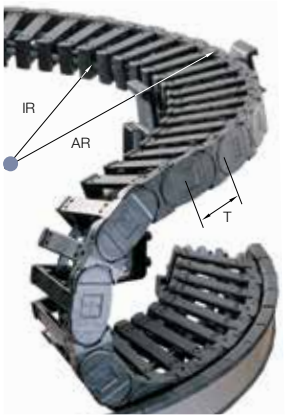
## Series 2808 (can be opened along the inner and outer radius)




**Legend**

| | | |
|---|---|---|
| ***AR*** | = | Outer radius |
| ***IR*** | = | Inner radius |
| ***R*** | = | E-Chain Bending radius |
| ***T*** | = | Pitch |
| ***K*** | = | Series-dependent add-on for bending radius |




| R | 3.94 | (100) | 4.92 | (125) | 5.91 | (150) | 6.89 | (175) | 7.87 | (200) | 9.84 | (250) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| K | 18.30 | (465) | 21.65 | (550) | 24.40 | (620) | 27.56 | (700) | 30.71 | (780) | 37.01 | (940) |
| T | 2.20 | (56) | 2.20 | (56) | 2.20 | (56) | 2.20 | (56) | 2.20 | (56) | 2.20 | (56) |

| Bi in. (mm) | Ba in. (mm) | AR in. (mm) | IR in. (mm) | R 3.94 (100) 2808-... | R 4.92 (125) 2808-... | R 5.91 (150) 2808-... | R 6.89 (175) 2808-... | R 7.87 (200) 2808-... | R 9.84 (250) 2808-... | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50) | 3.19 (81) | 15.75 (400) | 12.95 (329.5) | -05-100/400 | -05-125/400 | -05-150/400 | -05-175/400 | -05-200/400 | -05-250/400 | 1.18 (1.76) |
| 2.68 (68) | 3.90 (99) | 15.75 (400) | 12.36 (311.5) | -06-100/400 | -06-125/400 | -06-150/400 | -06-175/400 | -06-200/400 | -06-250/400 | 1.26 (1.87) |
| 2.95 (75) | 4.17 (106) | 15.75 (400) | 11.99 (304.5) | -07-100/400 | -07-125/400 | -07-150/400 | -07-175/400 | -07-200/400 | -07-250/40 | 1.29 (1.92) |
| 3.44 (87.5) | 4.67 (118.5) | 15.75 (400) | 11.50 (292) | -087-100/400 | -087-125/400 | -087-150/400 | -087-175/400 | -087-200/400 | -087-250/400 | 1.34 (1.99) |
| 3.94 (100) | 5.16 (131) | 15.75 (400) | 11.00 (279.5) | – | – | -10-150/400 | -10-175/400 | -10-200/400 | -10-250/400 | 1.39 (2.07) |
| 4.25 (108) | 5.47 (139) | 15.75 (400) | 10.69 (271.5) | – | – | – | -11-175/400 | -11-200/400 | -11-250/400 | 1.42 (2.12) |
| 4.92 (125) | 6.14 (156) | 15.75 (400) | 10.02 (254.5) | – | – | – | -12-175/400 | -12-200/400 | -12-250/400 | 1.49 (2.22) |
| 5.41 (137.5) | 6.63 (168.5) | 15.75 (400) | 9.53 (242) | – | – | – | – | – | -137-250/400 | 1.55 (2.30) |
| 5.91 (150) | 7.13 (181) | 15.75 (400) | 9.04 (229.5) | – | – | – | – | – | -15-250/400 | 1.60 (2.38) |
| 1.97 (50) | 3.19 (81) | 19.69 (500) | 16.91 (429.5) | -05-100/500 | -05-125/500 | -05-150/500 | -05-175/500 | -05-200/500 | -05-250/500 | 1.18 (1.76) |
| 2.68 (68) | 3.90 (99) | 19.69 (500) | 16.20 (411.5) | -06-100/500 | -06-125/500 | -06-150/500 | -06-175/500 | -06-200/500 | -06-250/500 | 1.26 (1.87) |
| 2.95 (75) | 4.17 (106) | 19.69 (500) | 15.93 (404.5) | -07-100/500 | -07-125/500 | -07-150/500 | -07-175/500 | -07-200/500 | -07-250/500 | 1.29 (1.92) |
| 3.44 (87.5) | 4.67 (118.5) | 19.69 (500) | 15.43 (392) | -087-100/500 | -087-125/500 | -087-150/500 | -087-175/500 | -087-200/500 | -087-250/500 | 1.34 (1.99) |
| 3.94 (100) | 5.16 (131) | 19.69 (500) | 14.94 (379.5) | -10-100/500 | -10-125/500 | -10-150/500 | -10-175/500 | -10-200/500 | -10-250/500 | 1.39 (2.07) |
| 4.25 (108) | 5.47 (139) | 19.69 (500) | 14.63 (371.5) | – | -11-125/500 | -11-150/500 | -11-175/500 | -11-200/500 | -11-250/500 | 1.42 (2.12) |
| 4.92 (125) | 6.14 (156) | 19.69 (500) | 13.96 (354.5) | – | -12-125/500 | -12-150/500 | -12-175/500 | -12-200/500 | -12-250/500 | 1.49 (2.22) |
| 5.41 (137.5) | 6.63 (168.5) | 19.69 (500) | 13.46 (342) | – | – | -137-150/500 | -137-175/500 | -137-200/500 | -137-250/500 | 1.55 (2.30) |
| 5.91 (150) | 7.13 (181) | 19.69 (500) | 12.97 (329.5) | – | – | -15-150/500 | -15-175/500 | -15-200/500 | -15-250/500 | 1.60 (2.38) |
| 1.97 (50) | 3.19 (81) | 23.62 (600) | 20.85 (529.5) | -05-100/600 | -05-125/600 | -05-150/600 | -05-175/600 | -05-200/600 | -05-250/600 | 1.18 (1.76) |
| 2.68 (68) | 3.90 (99) | 23.62 (600) | 20.13 (511.5) | -06-100/600 | -06-125/600 | -06-150/600 | -06-175/600 | -06-200/600 | -06-250/600 | 1.26 (1.87) |
| 2.95 (75) | 4.17 (106) | 23.62 (600) | 19.86 (504.5) | -07-100/600 | -07-125/600 | -07-150/600 | -07-175/600 | -07-200/600 | -07-250/600 | 1.29 (1.92) |
| 3.44 (87.5) | 4.67 (118.5) | 23.62 (600) | 19.37 (492) | -087-100/600 | -087-125/600 | -087-150/600 | -087-175/600 | -087-200/600 | -087-250/600 | 1.34 (1.99) |
| 3.94 (100) | 5.16 (131) | 23.62 (600) | 18.88 (479.5) | -10-100/600 | -10-125/600 | -10-150/600 | -10-175/600 | -10-200/600 | -10-250/600 | 1.39 (2.07) |
| 4.25 (108) | 5.47 (139) | 23.62 (600) | 18.56 (471.5) | -11-100/600 | -11-125/600 | -11-150/600 | -11-175/600 | -11-200/600 | -11-250/600 | 1.42 (2.12) |
| 4.92 (125) | 6.14 (156) | 23.62 (600) | 17.89 (454.5) | – | -12-125/600 | -12-150/600 | -12-175/600 | -12-200/600 | -12-250/600 | 1.49 (2.22) |
| 5.41 (137.5) | 6.63 (168.5) | 23.62 (600) | 17.40 (442) | – | -137-125/600 | -137-150/600 | -137-175/600 | -137-200/600 | -137-250/600 | 1.55 (2.30) |
| 5.91 (150) | 7.13 (181) | 23.62 (600) | 16.91 (429.5) | – | – | -15-150/600 | -15-175/600 | -15-200/600 | -15-250/600 | 1.60 (2.38) |

**Example: Part Number 2808-15-150/600**

## Interior Separation: Series 2808 TwisterChain

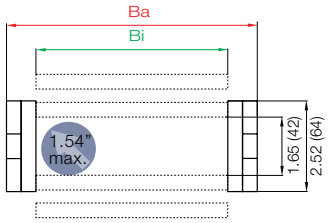
All interior elements of the **E4/100 Series 280 Energy Chain®** may be used with the Series 2808 TwisterChain, **Chapter 6.**

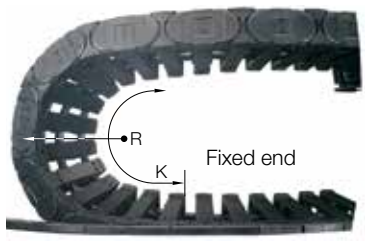
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

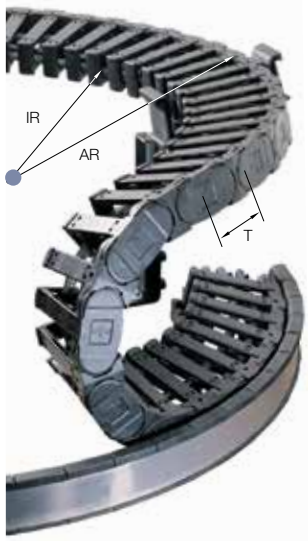
# E-Chain System®
# TwisterChain® Series 3808

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

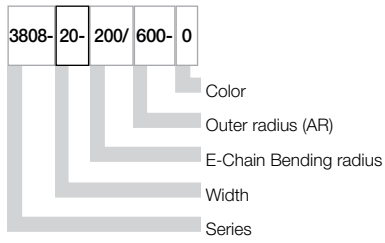
## Series 3808 (can be opened along the inner and outer radius)




**Part No. structure**




**Legend**

| | |
|---|---|
| ***AR*** | = Outer radius |
| ***IR*** | = Inner radius |
| ***R*** | = E-Chain Bending radius |
| ***T*** | = Pitch |
| ***K*** | = Series-dependent add-on for bending radius |

| R | 3.94 | (100) | 4.92 | (125) | 5.91 | (150 ) | 7.87 | (200) | 9.84 | (250) |
|---|---|---|---|---|---|---|---|---|---|---|
| K | 19.69 | (500) | 25.59 | (650) | 28.54 | (725) | 34.45 | (875) | 41.34 | (1050) |
| T | 2.64 | (67) | 2.64 | (67) | 2.64 | (67) | 2.64 | (67) | 2.64 | (67) |

| Bi in. (mm) | Ba in. (mm) | AR in. (mm) | IR in. (mm) | R 3.94 (100) 3808-... | R 4.92 (125) 3808-... | R 5.91 (150) 3808-... | R 7.87 (200) 3808-... | R 9.84 (250) 3808-... | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50) | 3.35 (85) | 15.75 (400) | 12.89 (327.5) | -05-100/400 | -05-125/400 | -05-150/400 | -05-200/400 | -05-250/400 | 1.49 (2.21) |
| 2.68 (68) | 4.06 (103) | 15.75 (400) | 12.19 (309.5) | -06-100/400 | -06-125/400 | -06-150/400 | -06-200/400 | -06-250/400 | 1.55 (2.30) |
| 2.95 (75) | 4.33 (110) | 15.75 (400) | 11.91 (302.5) | -07-100/400 | -07-125/400 | -07-150/400 | -07-200/400 | -07-250/400 | 1.57 (2.33) |
| 3.44 (87.5) | 4.82 (122.5) | 15.75 (400) | 11.42 (290) | -087-100/400 | -087-125/400 | -087-150/400 | -087-200/400 | -087-250/400 | 1.61 (2.40) |
| 3.94 (100) | 5.31 (135) | 15.75 (400) | 10.93 (277.5) | -10-100/400 | -10-125/400 | -10-150/400 | -10-200/400 | -10-250/400 | 1.65 (2.46) |
| 4.25 (108) | 5.63 (143) | 15.75 (400) | 10.61 (269.5) | – | -11-125/400 | -11-150/400 | -11-200/400 | -11-250/400 | 1.68 (2.50) |
| 4.92 (125) | 6.30 (160) | 15.75 (400) | 9.94 (252.5) | – | -12-125/400 | -12-150/400 | -12-200/400 | -12-250/400 | 1.74 (2.59) |
| 5.41 (137.5) | 6.79 (172.5) | 15.75 (400) | 9.45 (240) | – | -137-125/400 | -137-150/400 | -137-200/400 | -137-250/400 | 1.78 (2.65) |
| 5.91 (150) | 7.28 (185) | 15.75 (400) | 8.96 (227.5) | – | – | – | -15-200/400 | -15-250/400 | 1.83 (2.72) |
| 6.40 (162.5) | 7.78 (197.5) | 15.75 (400) | 8.46 (215) | – | – | – | -162-200/400 | -162-250/400 | 1.87 (2.78) |
| 6.61 (168) | 7.99 (203) | 15.75 (400) | 8.25 (209.5) | – | – | – | – | -17-250/400 | 1.89 (2.81) |
| 6.89 (175) | 8.27 (210) | 15.75 (400) | 7.97 (202.5) | – | – | – | – | -18-250/400 | 1.91 (2.84) |
| 1.97 (50) | 3.35 (85) | 19.69 (500) | 16.83 (427.5) | -05-100/500 | -05-125/500 | -05-150/500 | -05-200/500 | -05-250/500 | 1.49 (2.21) |
| 2.68 (68) | 4.06 (103) | 19.69 (500) | 16.12 (409.5) | -06-100/500 | -06-125/500 | -06-150/500 | -06-200/500 | -06-250/500 | 1.55 (2.30) |
| 2.95 (75) | 4.33 (110) | 19.69 (500) | 15.85 (402.5) | -07-100/500 | -07-125/500 | -07-150/500 | -07-200/500 | -07-250/500 | 1.57 (2.33) |
| 3.44 (87.5) | 4.82 (122.5) | 19.69 (500) | 15.35 (390) | -087-100/500 | -087-125/500 | -087-150/500 | -087-200/500 | -087-250/500 | 1.61 (2.40) |
| 3.94 (100) | 5.31 (135) | 19.69 (500) | 14.86 (377.5) | -10-100/500 | -10-125/500 | -10-150/500 | -10-200/500 | -10-250/500 | 1.65 (2.46) |
| 4.25 (108) | 5.62 (143) | 19.69 (500) | 14.55 (369.5) | – | -11-125/500 | -11-150/500 | -11-200/500 | -11-250/500 | 1.68 (2.50) |
| 4.92 (125) | 6.30 (160) | 19.69 (500) | 13.78 (352.5) | – | -12-125/500 | -12-150/500 | -12-200/500 | -12-250/500 | 1.74 (2.59) |
| 5.41 (137.5) | 6.79 (172.5) | 19.69 (500) | 13.38 (340) | – | – | -137-150/500 | -137-200/500 | -137-250/500 | 1.78 (2.65) |
| 5.91 (150) | 7.28 (185) | 19.69 (500) | 12.89 (327.5) | – | – | -15-150/500 | -15-200/500 | -15-250/500 | 1.83 (2.72) |
| 6.40 (162.5) | 7.76 (197.5) | 19.69 (500) | 12.40 (315) | – | – | – | -162-200/500 | -162-250/500 | 1.87 (2.78) |
| 6.61 (168) | 7.99 (203) | 19.69 (500) | 12.19 (309.5) | – | – | – | -17-200/500 | -17-250/500 | 1.89 (2.81) |
| 6.89 (175) | 8.27 (210) | 19.69 (500) | 11.91 (302.5) | – | – | – | -18-200/500 | -18-250/500 | 1.91 (2.84) |
| 7.38 (187.5) | 8.76(222.5) | 19.69 (500) | 11.42 (290) | – | – | – | -187-200/500 | -187-250/500 | 1.96 (2.91) |
| 7.87 (200) | 9.25 (235) | 19.69 (500) | 10.93 (277.5) | – | – | – | -20-200/500 | -20-250/500 | 2.00 (2.97) |
| 1.97 (50) | 3.35 (85) | 23.62 (600) | 20.76 (527.5) | -05-100/600 | -05-125/600 | -05-150/600 | -05-200/600 | -05-250/600 | 1.49 (2.21) |
| 2.68 (68) | 4.06 (103) | 23.62 (600) | 20.06 (509.5) | -06-100/600 | -06-125/600 | -06-150/600 | -06-200/600 | -06-250/600 | 1.55 (2.30) |
| 2.95 (75) | 4.33 (110) | 23.62 (600) | 19.78 (502.5) | -07-100/600 | -07-125/600 | -07-150/600 | -07-200/600 | -07-250/600 | 1.57 (2.33) |
| 3.44 (87.5) | 4.82 (122.5) | 23.62 (600) | 19.29 (490) | -087-100/600 | -087-125/600 | -087-150/600 | -087-200/600 | -087-250/600 | 1.61 (2.40) |
| 3.94 (100) | 5.31 (135) | 23.62 (600) | 18.80 (477.5) | -10-100/600 | -10-125/600 | -10-150/600 | -10-200/600 | -10-250/600 | 1.65 (2.46) |
| 4.25 (108) | 5.63 (143) | 23.62 (600) | 18.48 (469.5) | -11-100/600 | -11-125/600 | -11-150/600 | -11-200/600 | -11-250/600 | 1.68 (2.50) |
| 4.92 (125) | 6.30 (160) | 23.62 (600) | 17.81 (452.5) | -12-100/600 | -12-125/600 | -12-150/600 | -12-200/600 | -12-250/600 | 1.74 (2.59) |
| 5.41 (137.5) | 6.79 (172.5) | 23.62 (600) | 17.32 (440) | -137-100/600 | -137-125/600 | -137-150/600 | -137-200/600 | -137-250/600 | 1.78 (2.65) |
| 5.91 (150) | 7.28 (185) | 23.62 (600) | 16.83 (427.5) | -15-100/600 | -15-125/600 | -15-150/600 | -15-200/600 | -15-250/600 | 1.83 (2.72) |
| 6.40 (162.5) | 7.76 (197.5) | 23.62 (600) | 16.34 (415) | – | – | – | -162-200/600 | -162-250/600 | 1.87 (2.78) |
| 6.61 (168) | 7.99 (203) | 23.62 (600) | 16.12 (409.5) | – | – | – | -17-200/600 | -17-250/600 | 1.89 (2.81) |
| 6.89 (175) | 8.27 (210) | 23.62 (600) | 15.85 (402.5) | – | – | – | -18-200/600 | -18-250/600 | 1.91 (2.84) |
| 7.38 (187.5) | 8.76 (222.5) | 23.62 (600) | 15.35 (390) | – | – | – | -187-200/600 | -187-250/600 | 1.96 (2.91) |
| 7.87 (200) | 9.25 (235) | 23.62 (600) | 14.86 (377.5) | – | – | – | -20-200/600 | -20-250/600 | 2.00 (2.97) |

**Example: Part Number 3808-20-150/600**

## Interior Separation: Series 3808 TwisterChain

All interior elements of the **E4/100 Series 380 Energy Chain®** may be used with the Series 3808 TwisterChain, **Chapter 6.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series 4008

igus® E-Chain System®
Telephone 1-800-521-2747
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Internet: http://www.igus.com
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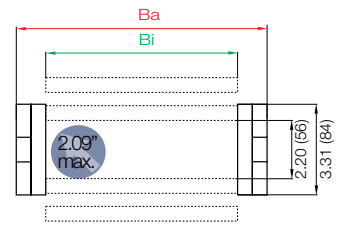
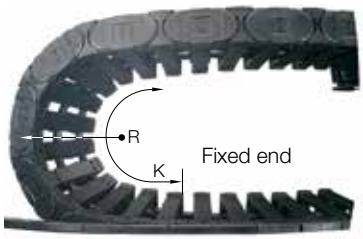
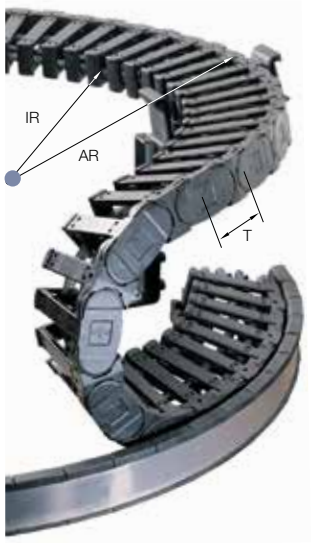
QuickSpec/RFQ: http://www.igus.com/quickspec

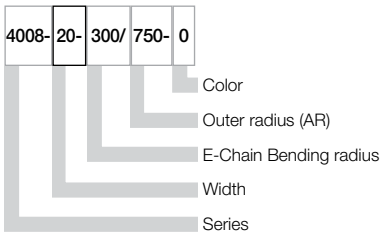
## Series 4008 (snap-open along the inner and outer radius)




**Part No. structure**




**Legend**

| | |
|---|---|
| ***AR*** | = Outer radius |
| ***IR*** | = Inner radius |
| ***R*** | = E-Chain Bending radius |
| ***T*** | = Pitch |
| ***K*** | = Series-dependent add-on for bending radius |

| R | 5.91 | (150) | 7.87 | (200) | 9.84 | (250) | 11.81 | (300) | 15.75 | (400) |
|---|---|---|---|---|---|---|---|---|---|---|
| K | 29.53 | (750) | 35.43 | (900) | 41.34 | (1050) | 48.23 | (1225) | 57.09 | (1450) |
| T | 3.58 | (91) | 3.58 | (91) | 3.58 | (91) | 3.58 | (91) | 3.58 | (91) |

| Bi in. (mm) | Ba in. (mm) | AR in. (mm) | IR in. (mm) | R 5.91 (150) 4008-... | R 7.87 (200) 4008-... | R 9.84 (250) 4008-... | R 11.81 (300) 4008-... | R 15.75 (400) 4008-... | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|---|---|---|---|
| 1.97 (50) | 3.66 (93) | 25.59 (650) | 22.52 (572) | -05-150/650 | -05-200/650 | -05-250/650 | -05-300/650 | -05-400/650 | 2.20 (3.28) |
| 2.56 (65) | 4.25 (108) | 25.59 (650) | 21.93 (557) | -06-150/650 | -06-200/650 | -06-250/650 | -06-300/650 | -06-400/650 | 2.27 (3.38) |
| 2.95 (75) | 4.65 (118) | 25.59 (650) | 21.54 547) | -07-150/650 | -07-200/650 | -07-250/650 | -07-300/650 | -07-400/650 | 2.31 (3.44) |
| 3.94 (100) | 5.63 (143) | 25.59 (650) | 20.55 (522) | – | -10-200/650 | -10-250/650 | -10-300/650 | -10-400/650 | 2.43 (3.61) |
| 4.41 (112) | 6.10 (155) | 25.59 (650) | 20.08 (510) | – | -11-200/650 | -11-250/650 | -11-300/650 | -11-400/650 | 2.48 (3.69) |
| 4.92 (125) | 6.61 (168) | 25.59 (650) | 19.57 (497) | – | -12-200/650 | -12-250/650 | -12-300/650 | -12-400/650 | 2.53 (3.77) |
| 5.41 (137.5) | 7.11 (180.5) | 25.59 (650) | 19.07 (484.5) | – | – | -13-250/650 | -13-300/650 | -13-400/650 | 2.59 (3.86) |
| 5.91 (150) | 7.60 (193) | 25.59 (650) | 18.58 (472) | – | – | -15-250/650 | -15-300/650 | -15-400/650 | 2.65 (3.94) |
| 6.40 (162.5) | 8.09 (205.5) | 25.59 (650) | 18.09 (459.5) | – | – | -16-250/650 | -16-300/650 | -16-400/650 | 2.70 (4.02) |
| 6.89 (175) | 8.58 (218) | 25.59 (650) | 17.60 (447) | – | – | – | -17-300/650 | -17-400/650 | 2.76 (4.10) |
| 7.38 (187.5) | 9.07 (230.5) | 25.59 (650) | 17.11 (434.5) | – | – | – | -18-300/650 | -18-400/650 | 2.82 (4.19) |
| 1.97 (50) | 3.66 (93) | 29.53 (750) | 26.46 (672) | -05-150/750 | -05-200/750 | -05-250/750 | -05-300/750 | -05-400/750 | 2.20 (3.28) |
| 2.56 (65) | 4.25 (108) | 29.53 (750) | 25.87 (657) | -06-150/750 | -06-200/750 | -06-250/750 | -06-300/750 | -06-400/750 | 2.27 (3.38) |
| 2.95 (75) | 4.65 (118) | 29.53 (750) | 25.47 (647) | -07-150/750 | -07-200/750 | -07-250/750 | -07-300/750 | -07-400/750 | 2.31 (3.44) |
| 3.94 (100) | 5.63 (143) | 29.53 (750) | 24.49 (622) | -10-150/750 | -10-200/750 | -10-250/750 | -10-300/750 | -10-400/750 | 2.43 (3.61) |
| 4.41 (112) | 6.10 (155) | 29.53 (750) | 24.02 (610) | -11-150/750 | -11-200/750 | -11-250/750 | -11-300/750 | -11-400/750 | 2.48 (3.69) |
| 4.92 (125) | 6.61 (168) | 29.53 (750) | 23.50 (597) | – | -12-200/750 | -12-250/750 | -12-300/750 | -12-400/750 | 2.53 (3.77) |
| 5.41 (137.5) | 7.11 (180.5) | 29.53 (750) | 23.01 (584.5) | – | -13-200/750 | -13-250/750 | -13-300/750 | -13-400/750 | 2.59 (3.86) |
| 5.91 (150) | 7.60 (193) | 29.53 (750) | 22.52 (572) | – | -15-200/750 | -15-250/750 | -15-300/750 | -15-400/750 | 2.65 (3.94) |
| 6.40 (162.5) | 8.09 (205.5) | 29.53 (750) | 22.03 (559.5) | – | -16-200/750 | -16-250/750 | -16-300/750 | -16-400/750 | 2.70 (4.02) |
| 6.89 (175) | 8.58 (218) | 29.53 (750) | 21.54 (547) | – | – | -17-250/750 | -17-300/750 | -17-400/750 | 2.76 (4.10) |
| 7.38 (187.5) | 9.07 (230.5) | 29.53 (750) | 21.04 (534.5) | – | – | -18-250/750 | -18-300/750 | -18-400/750 | 2.82 (4.19) |
| 7.87 (200) | 9.57 (243) | 29.53 (750) | 20.55 (522) | – | – | -20-250/750 | -20-300/750 | -20-400/750 | 2.87 (4.27) |
| 1.97 (50) | 3.66 (93) | 33.46 (850) | 30.39 (772) | -05-150/850 | -05-200/850 | -05-250/850 | -05-300/850 | -05-400/850 | 2.20 (3.28) |
| 2.56 (65) | 4.25 (108) | 33.46 (850) | 29.80 (757) | -06-150/850 | -06-200/850 | -06-250/850 | -06-300/850 | -06-400/850 | 2.27 (3.38) |
| 2.95 (75) | 4.65 (118) | 33.46 (850) | 29.41 (747) | -07-150/850 | -07-200/850 | -07-250/850 | -07-300/850 | -07-400/850 | 2.31 (3.44) |
| 3.94 (100) | 5.63 (143) | 33.46 (850) | 28.43 (722) | -10-150/850 | -10-200/850 | -10-250/850 | -10-300/850 | -10-400/850 | 2.43 (3.61) |
| 4.41 (112) | 6.10 (155) | 33.46 (850) | 27.95 (710) | -11-150/850 | -11-200/850 | -11-250/850 | -11-300/850 | -11-400/850 | 2.48 (3.69) |
| 4.92 (125) | 6.61 (168) | 33.46 (850) | 27.44 (697) | -12-150/850 | -12-200/850 | -12-250/850 | -12-300/850 | -12-400/850 | 2.53 (3.77) |
| 5.41 (137.5) | 7.11 (180.5) | 33.46 (850) | 26.95 (684.5) | – | -13-200/850 | -13-250/850 | -13-300/850 | -13-400/850 | 2.59 (3.86) |
| 5.91 (150) | 7.60 (193) | 33.46 (850) | 26.46 (672) | – | -15-200/850 | -15-250/850 | -15-300/850 | -15-400/850 | 2.65 (3.94) |
| 6.40 (162.5) | 8.09 (205.5) | 33.46 (850) | 25.96 (659.5) | – | -16-200/850 | -16-250/850 | -16-300/850 | -16-400/850 | 2.70 (4.02) |
| 6.89 (175) | 8.58 (218) | 33.46 (850) | 25.47 (647) | – | -17-200/850 | -17-250/850 | -17-300/850 | -17-400/850 | 2.76 (4.10) |
| 7.38 (187.5) | 9.07 (230.5) | 33.46 (850) | 24.98 (634.5) | – | -18-200/850 | -18-250/850 | -18-300/850 | -18-400/850 | 2.82 (4.19) |
| 7.87 (200) | 9.57 (243) | 33.46 (850) | 24.49 (622) | – | – | -20-250/850 | -20-300/850 | -20-400/850 | 2.87 (4.27) |

**Example: Part Number 4008-20-50/850**

## Interior Separation: Series 4008 TwisterChain

All interior elements of the **E4/100 Series 400 Energy Chain®** may be used with the Series 4008 TwisterChain, **Chapter 6.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

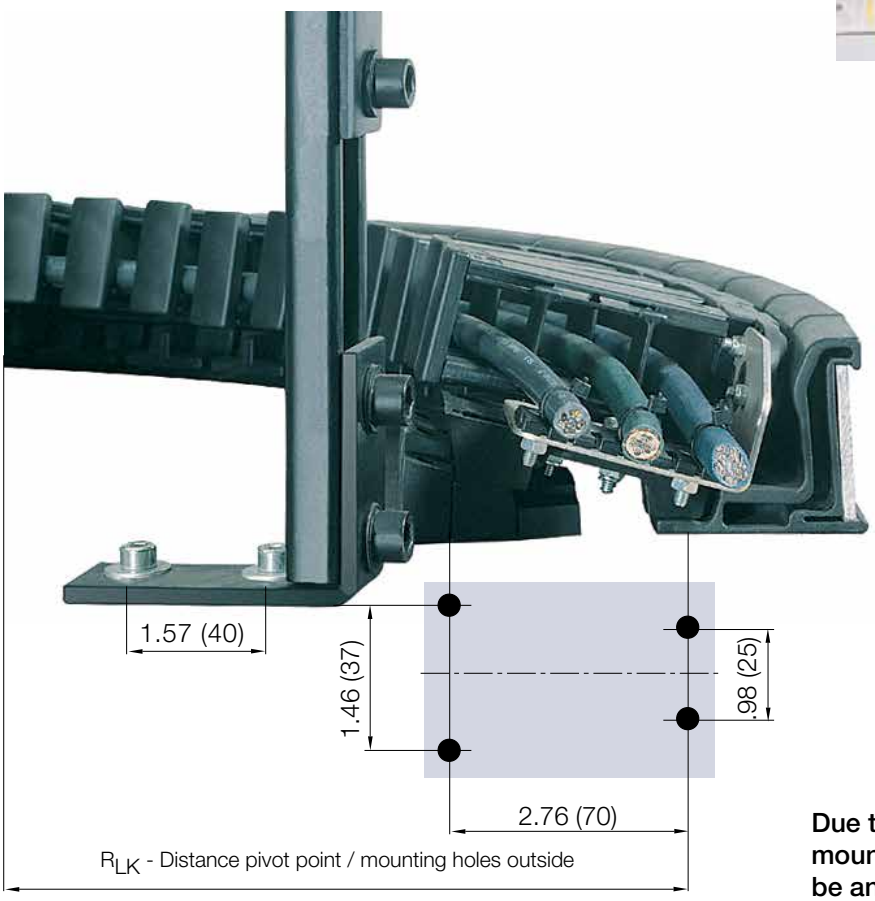
# E-Chain System®
# TwisterChain® Series
# Mounting Bracket

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Steel mounting bracket

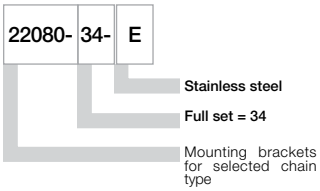
- Electrically conductive
- Universal use
- One component for all chain widths

Item 1 Item 2




**Due to the design of the TwisterChain mounting brackets, chain length must be an odd number of links**

**Part No. structure**




**Full set, for both ends**

22080-34

**Single-part order - Part 1:**

22080-3

**Single-part order - Part 2:**

22080-4

| Chain Type | Part Number Full Set | Part Number Item 1 | Part Number Item 2 |
|---|---|---|---|
| 2208 | 22080-34 | 22080-3 | 22080-4 |
| 2808 | 28080-34 | 28080-3 | 28080-4 |
| 3808 | 38080-34 | 38080-3 | 38080-4 |
| 4008 | 40080-34 | 40080-3 | 40080-4 |

Other connection dimensions for mounting the guide trough,
➤ **See Pages 8.126 and 8.128**

The guide trough must be mounted at the fixed point of the TwisterChain® as shown by the drilling template in the illustration. The following bolted connections are permitted:

- Through-hole: 4 x Ø .26 - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts

TwisterChain® for continuous industrial use on a buckling arm robot (for welding applications, rotary movement 420°)

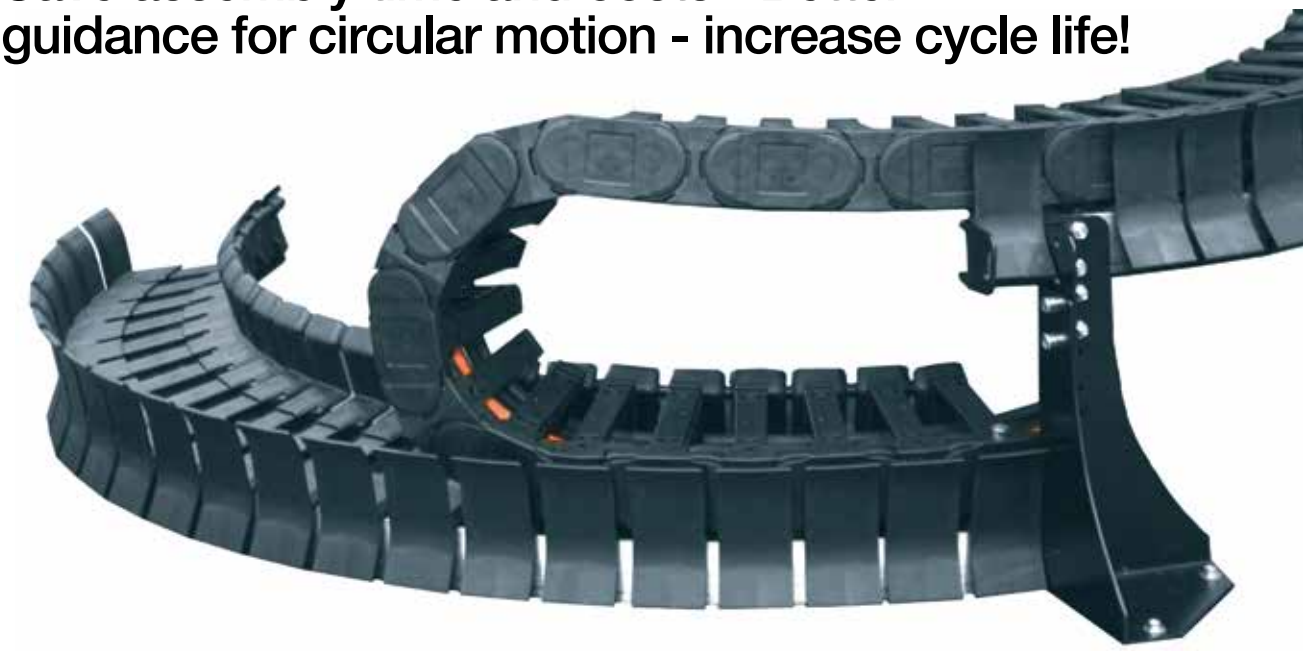
TwisterChain® in a guide trough for rotary movements on an articulated robot

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# Guide Trough - Type 01

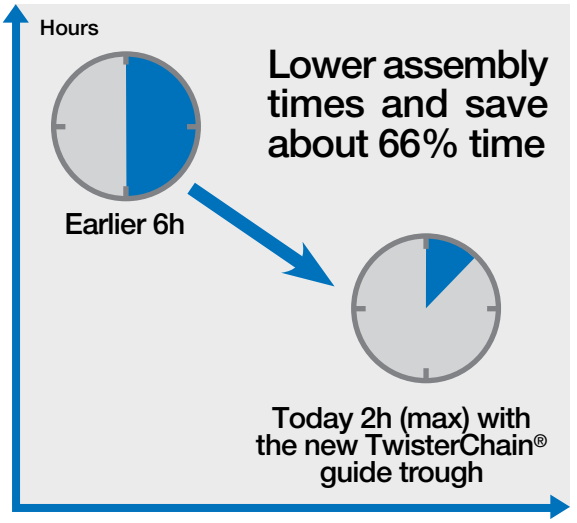
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

## Save assembly time and costs - Better guidance for circular motion - increase cycle life!



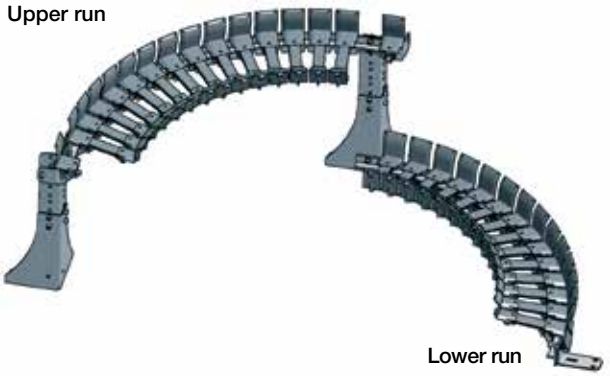
With the new TwisterChain® trough, complex adjustment work is eliminated and assembly time is reduced from six hours to just two hours. Thanks to its almost all-plastic design, noise levels are reduced while travel speed and service life are increased. Now available for widths and radii on TwisterChain® models series 2808, 3808 and 4008. Please call igus® for more information.

- Much smoother and quieter motion of the TwisterChain® in the trough due to continuous guidance of upper run
- Preassembled delivery possible
- Easy adjustment and alignment and handling
- Assembly time reduced from 6 hours to 2 hours




With the new Twister trough, the previously complex adjustment work is clearly minimized

Easy adjustment and alignment on the robot, due to the predefined angles and pre-drilled mounting holes




Less parts, easier handling - Illustration shows a 180° application

# E-Chain System®
# TwisterChain® Series
# Guide Trough - Type 01

TwisterChain® in the new igus® guide trough for rotary movements in a buckling arm robot - Durable and rugged: Prototype successfully tested in over 1,000,000 cycles

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# Guide Trough - Type 01

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

| For Series* | Outer radius *AR* [mm] | Angle of rotation α [°] | Trough Type 01 complete |
|---|---|---|---|
| 2808 / 3808 | 15.75" (400 mm) | 0 - 90° | 9 XXXX -31-90 -400/- Bi R |
| | | 90° - 180° | 9 XXXX -31-180-400/- Bi R |
| | | 180° - 270° | 9 XXXX -31-270-400/- Bi R |
| | | 270° - 360° | 9 XXXX -31-360-400/- Bi R |
| | 19.69" (500 mm) | 0 - 90° | 9 XXXX -31-90 -500/- Bi R |
| | | 90° - 180° | 9 XXXX -31-180-500/- Bi R |
| | | 180° - 270° | 9 XXXX -31-270-500/- Bi R |
| | | 270° - 360° | 9 XXXX -31-360-500/- Bi R |
| | 23.62" (600 mm) | 0 - 90° | 9 XXXX -31-90 -600/- Bi R |
| | | 90° - 180° | 9 XXXX -31-180-600/- Bi R |
| | | 180° - 270° | 9 XXXX -31-270-600/- Bi R |
| | | 270° - 360° | 9 XXXX -31-360-600/- Bi R |
| 4008 | 25.59" (650 mm) | 0 - 90° | 9 TC56 -31-90 -650/- Bi R |
| | | 90° - 180° | 9 TC56 -31-180-650/- Bi R |
| | | 180° - 270° | 9 TC56 -31-270-650/- Bi R |
| | | 270° - 360° | 9 TC56 -31-360-650/- Bi R |
| | 29.53" (750 mm) | 0 - 90° | 9 TC56 -31-90 -750/- Bi R |
| | | 90° - 180° | 9 TC56 -31-180-750/- Bi R |
| | | 180° - 270° | 9 TC56 -31-270-750/- Bi R |
| | | 270° - 360° | 9 TC56 -31-360-750/- Bi R |
| | 33.46" (850 mm) | 0 - 90° | 9 TC56 -31-90 -850/- Bi R |
| | | 90° - 180° | 9 TC56 -31-180-850/- Bi R |
| | | 180° - 270° | 9 TC56 -31-270-850/- Bi R |
| | | 270° - 360° | 9 TC56 -31-360-850/- Bi R |

Supplement Part No. with required Series (TC32, TC42 or TC56), the value *Bi* and the corresponding value of the **required E-Chain® bending radius** *R* ➤ 9 TC56 80-600/ -06 250

| 9 | TC56- | 31- | 180 | 600/ | 06 | 250 |
|---|---|---|---|---|---|---|
| 9 | XXXX. | 31. | 180. | 600/ | Bi. | R |

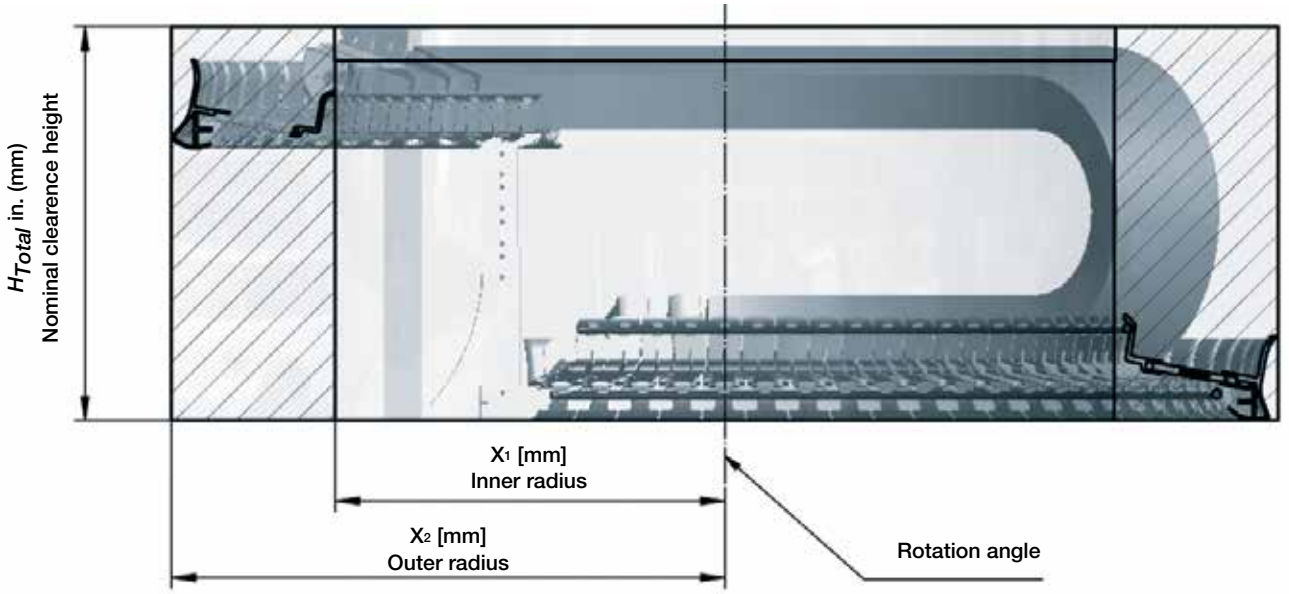
**Part No. structure - guide trough**
**9TC56-31-180-600/06-250**

- E-Chain® bending radius, please add appropriate value
- *Bi* - widths index, please add appropriate value
- Outer radius (AR)
- Trough angle (90°, 180°, 270°, 360°)
- Trough version - See below
- Selected Series
- Guide trough

**More order examples**

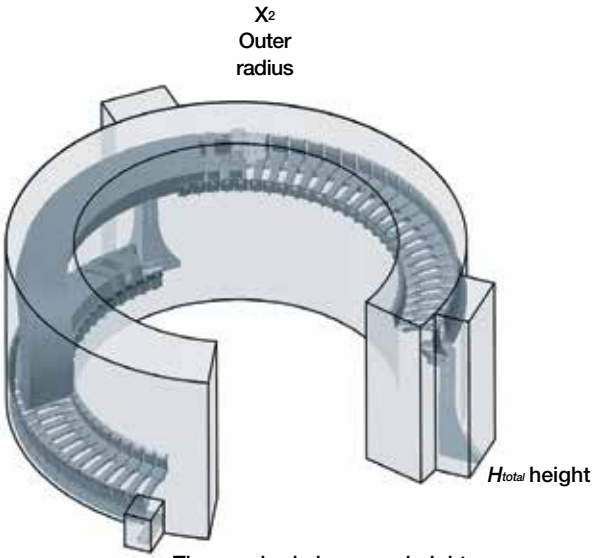
- Complete system (E-Chain®, mounting bracket and trough) = Part. No. 9 TC56 -180-600/ 06 - 250 -0
- Complete trough = Part. No. 9 TC56 -31-180-600/ 06 - 250 -0
- Only lower run trough = Part. No. 9 TC56 -30-180-600/ 06 - 250 -0
- Upper and lower run trough without base support = Part. No. 9 TC56 -32-180-600/ 06 - 250 -0

*Classic TwisterChain® series 2808, 3808 and 4008 will use new TwisterChain® trough series TC32, TC42 and TC56 respectively.

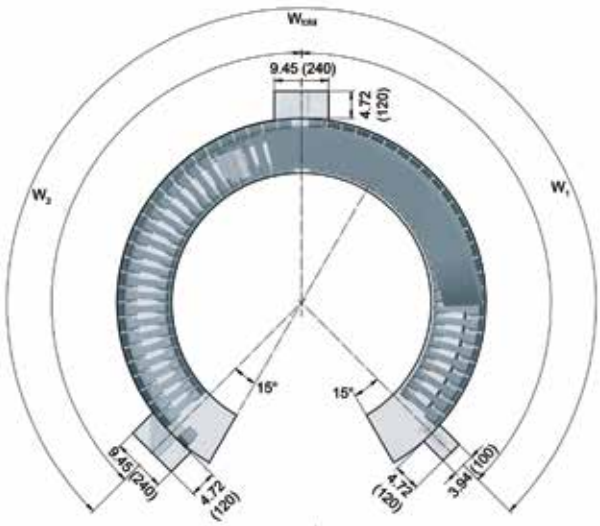



## Installation Dimensions - X1 / X2

| AR | X2 | X1 Inner radius | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Bi | Bi | Bi | Bi | Bi | Bi | Bi | Bi | Bi | Bi | Bi | Bi |
| in. (mm) | Outer | = 50 | = 65 | = 75 | = 100 | = 112 | = 125 | = 137 | = 150 | = 162 | = 175 | = 187 | = 200 |
| | radius | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) |
| **15.75 (400)** | 18.90 (480) | 11.42 (290) | 11.02 (280) | 10.63 (270) | 9.84 (250) | 9.45 (240) | 8.66 (220) | 8.27 (210) | 7.87 (200) | 7.48 (190) | 7.09 (180) | 6.69 (170) | 5.91 (150) |
| **19.69 (500)** | 22.83 (580) | 15.35 (390) | 14.96 (380) | 14.57 (370) | 13.78 (350) | 13.39 (340) | 12.60 (320) | 12.20 (310) | 11.81 (300) | 11.42 (290) | 11.02 (280) | 10.63 (270) | 9.84 (250) |
| **23.62 (600)** | 26.77 (680) | 19.29 (490) | 18.90 (480) | 18.50 (470) | 17.72 (450) | 17.32 (440) | 16.54 (420) | 16.14 (410) | 15.75 (400) | 15.35 (390) | 14.96 (380) | 14.57 (370) | 13.78 (350) |
| **25.59 (650)** | 28.74 (730) | 21.26 (540) | 20.87 (530) | 20.47 (520) | 19.69 (500) | 19.29 (490) | 18.50 (470) | 18.11 (460) | 17.72 (450) | 17.32 (440) | 16.93 (430) | 16.54 (420) | 15.75 (400) |
| **29.53 (750)** | 32.68 (830) | 25.20 (640) | 24.80 (630) | 24.41 (620) | 23.62 (600) | 23.23 (590) | 22.44 (570) | 22.05 (560) | 21.65 (550) | 21.26 (540) | 20.87 (530) | 20.47 (520) | 19.69 (500) |
| **33.46 (850)** | 36.61 (930) | 29.13 (740) | 28.74 (730) | 28.35 (720) | 27.56 (700) | 27.16 (690) | 26.38 (670) | 25.98 (660) | 25.59 (650) | 25.20 (640) | 24.80 (630) | 24.41 (620) | 23.62 (600) |




The required clearance height
of the TwisterChain® trough system




## Nominal clearance height - *Htotal*

| For Series | R 100 [mm] | R 125 in. (mm) | R 150 in. (mm) | R 175 in. (mm) | R 200 in. (mm) | R 250 in. (mm) | R 400 in. (mm) |
|---|---|---|---|---|---|---|---|
| 2808 | 14.57 (370) | 16.54 (420) | 18.50 (470) | 20.47 (520) | 22.44 (570) | 26.38 (670) | 38.19 (970) |
| 3808 | 14.96 (380) | 16.93 (430) | 18.90 (480) | 20.87 (530) | 22.83 (580) | 26.77 (680) | 38.58 (980) |
| 4008 | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | 27.56 (700) | 39.37 (1000) |

## Rotation angle - W1 / W2 / $W_{total}$

| $W_{total}$ Machine angle of rotation (°) | $W_1$ angle Lower run trough (°) | $W_2$ angle Upper run trough (°) |
|---|---|---|
| 90° | 45° | – |
| 180° | 90° | 90° |
| 270° | 135° | 135° |
| 360° | 180° | 180° |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# Guide Trough - Type 02

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec

The delivery of an igus® TwisterChain® includes the guide trough, which affords certain advantages:

- Guidance of the chain
- Minimized wear on the chain
- Optimal running smoothness
- Rotational angle up to 400°

The modular design of the guide trough makes it possible to connect a large number of chain, circle and bending radii by using the same trough sections. If the chain radius changes, the trough can simply be adapted without purchasing a completely new trough. The table below will assist you in selecting the right guide trough system. The specified part number includes the complete trough system. In all cases, you should state the TwisterChain® series when ordering.

This bottom stanchion (pictured above in red) is required only if the support for the upper run (from a 180° rotation angle) cannot be mounted on the machine.

## Order Example

| 9 | 4008- | 5- | 180- | 600/ | 06- | 250 |
|---|---|---|---|---|---|---|
| 9 | XXXX- | 5- | 180- | 600/ | *Bi* - | *R* |

**Part No. structure - guide trough**
**94008-5-180-600/06-250**

- **E-Chain® bending radius, please add appropriate value**
- ***Bi* - widths index, please add appropriate value**
- **Outer radius (AR)**
- **Trough angle (Standard 180°, 135°, 90°, 45°)**
- **Trough version (-5- with and -4- without bottom support)**
- **Selected Series ( 2208, 2808, 3808 or 4008)**
- **Guide trough**

| Part No. Series | Outer radius *AR* | Rotation angle α [°] | Trough assembly Standard | Trough assembly with bottom support | Number of support |
|---|---|---|---|---|---|
| 2208 | 11.81" (300 mm) | 45 - 100 | 9 2208 -4-45-300/ *Bi* - *R* | Not necessary | |
| | | >100 - 180 | 9 2208 -4-90-300/ *Bi* - *R* | Not necessary | |
| | | >180 - 270 | 9 2208 -4-135-300/ *Bi* - *R* * | 9 2208 -5-135-300/ *Bi* - *R* | 1 |
| | | >270 - 360 | 9 2208 -4-180-300/ *Bi* - *R* ** | 9 2208 -5-180-300/ *Bi* - *R* | 2 |
| 2808 / 3808 / 4008 | 17.72" (450 mm) | 45 - 100 | 9 XXXX -4-45-400/ *Bi* - *R* | Not necessary | |
| | | >100 - 180 | 9 XXXX -4-90-400/ *Bi* - *R* | Not necessary | |
| | | >180 - 270 | 9 XXXX -4-135-400/ *Bi* - *R* * | 9 XXXX -5-135-400/ *Bi* - *R* | 1 |
| | | >270 - 360 | 9 XXXX -4-180-400/ *Bi* - *R* ** | 9 XXXX -5-180-400/ *Bi* - *R* | 2 |
| | 17.72" - 21.65" (450 - 550 mm) | 45 - 100 | 9 XXXX -4-45-500/ *Bi* - *R* | Not necessary | |
| | | >100 - 180 | 9 XXXX -4-90-500/ *Bi* - *R* | Not necessary | |
| | | >180 - 270 | 9 XXXX -4-135-500/ *Bi* - *R* * | 9 XXXX -5-135-500/ *Bi* - *R* | 1 |
| | | >270 - 360 | 9 XXXX -4-180-500/ *Bi* - *R* ** | 9 XXXX -5-180-500/ *Bi* - *R* | 2 |
| | 21.65" - 23.62" (550 - 650 mm) | 45 - 100 | 9 XXXX -4-45-600/ *Bi* - *R* | Not necessary | |
| | | >100 - 180 | 9 XXXX -4-90-600/ *Bi* - *R* | Not necessary | |
| | | >180 - 270 | 9 XXXX -4-135-600/ *Bi* - *R* * | 9 XXXX -5-135-600/ *Bi* - *R* | 1 |
| | | >270 - 360 | 9 XXXX -4-180-600/ *Bi* - *R* ** | 9 XXXX -5-180-600/ *Bi* - *R* | 2 |
| | >23.62"(650 mm) | >360 | Ask us we will be happy to assist you | | |

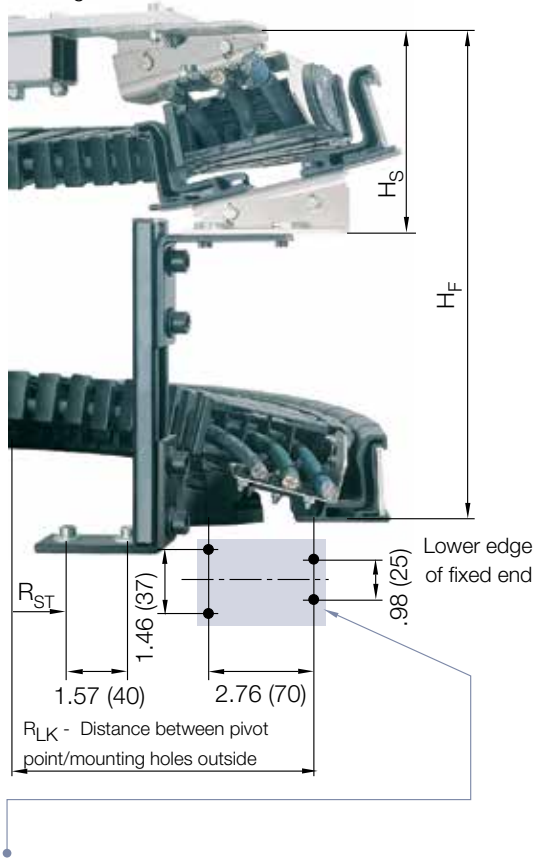
**Supplement Part No. with required Series** (2208, 2808, 3808 oder 4008), value ***Bi,***
**and appropriate value of the required E-Chain® radius *R*** ➤ 9 4008 -5-180-600/ 06 250

* These troughs feature **one support** for the upper run, without bottom stanchion (See red portion of above photo)

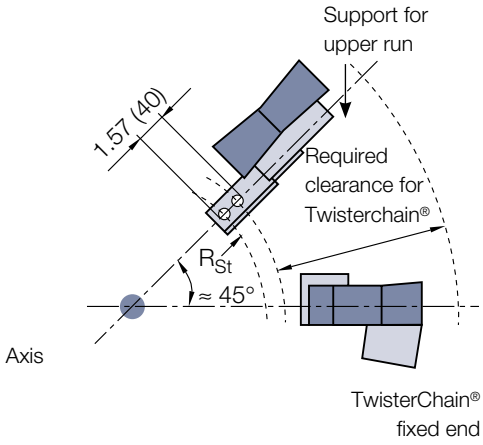
** These troughs feature **two supports** for the upper run, without bottom stanchion (See red portion of above photo)

# E-Chain System®
# TwisterChain® Series
# Guide Trough - Type 02

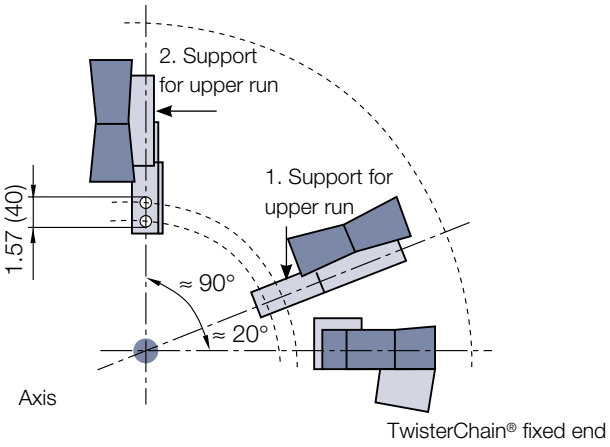
**Support for the upper run** (from a 180° rotational angle)
Lower edge of the carrier




**Mounting position for one support**




**Mounting position for two supports**




The guide trough must be mounted at the fixed end of the TwisterChain®, as shown by the drilling template.
The following bolted connections are permitted.

- Through-hole: 4 x Ø .26" - .28" (6.6 - 7 mm)
- Mounting only with bolts: 4 x M6 bolts

## Installation dimensions

| Series | $R_{LK}$ | $H_S$ | $H_F$ for E-Chain Bending Radius | | | | | | Part No. Guide Trough | $R_{ST}$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 2.16 (55) | 2.48 (63) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | | in. | mm |
| 2208...300 | 10.43 (265) | 5.12 (130) | 7.68 (195) | 8.31 (211) | 9.25 (235) | 11.22 (285) | 13.19 (335) | 15.16 (385) | **92208...300** | 5.71 (145) | |

| Series | $R_{LK}$ | $H_S$ | $H_F$ for E-Chain Bending Radius | | | | | | | | | Part No. Guide Trough | $R_{ST}$ | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 3.93 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) | 11.81 (300) | 15.75 (400) | | in. | mm |
| 2808...400 | 14.17 (360) | 5.75 (146) | 11.42 (290) | 13.39 (340) | 15.85 (390) | 17.32 (440) | 19.29 (490) | 21.26 (540) | 23.23 (590) | – | – | **92808...400** | 7.58 (192.5) | |
| 3808...400 | 14.17 (360) | 6.14 (156) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | – | – | **93808...400** | 7.58 (192.5) | |
| 2808...500 | 18.11 (460) | 5.75 (146) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) | 21.65 (550) | 23.62 (600) | – | – | **92808...500** | 11.52 (292.5) | |
| 3808...500 | 18.11 (460) | 6.14 (156) | 12.20 (310) | 14.17 (360) | 16.14 (410) | 18.11 (460) | 20.01 (510) | 22.05 (560) | 24.02 (610) | – | – | **93808...500** | 11.52 (292.5) | |
| 2808...600 | 22.05 (560) | 5.75 (146) | 12.01 (305) | 13.98 (355) | 15.94 (405) | 17.91 (455) | 19.88 (505) | 21.85 (555) | 23.82 (605) | – | – | **92808...600** | 15.43 (392.5) | |
| 3808...600 | 22.05 (560) | 6.14 (156) | 12.40 (315) | 14.37 (365) | 16.34 (415) | 18.31 (465) | 20.28 (515) | 22.24 (565) | 24.21 (615) | – | – | **93808...600** | 15.43 (392.5) | |
| 4008...650 | 24.02 (610) | 6.93 (176) | – | – | 17.01 (432) | – | 20.94 (532) | – | 24.88 (632) | 28.82 (732) | 36.69 (932) | **94008...650** | 17.42 (442.5) | |
| 4008...750 | 27.95 (710) | 6.93 (176) | – | – | 17.01 (432) | – | 20.94 (532) | – | 24.88 (632) | 28.82 (732) | 36.69 (932) | **94008...750** | 21.36 (542.5) | |

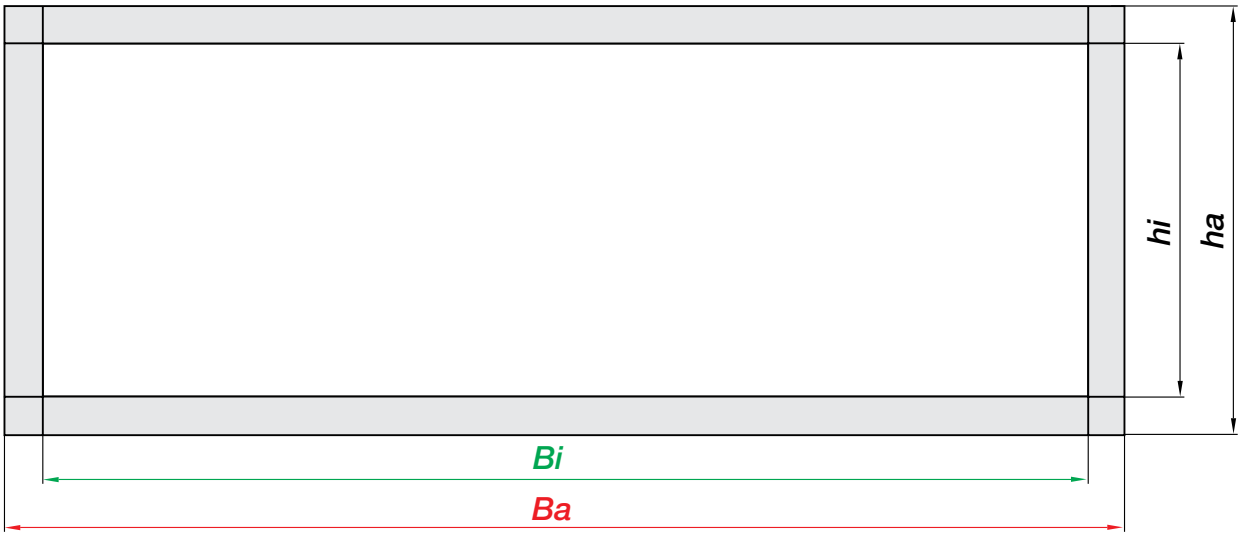
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System®
# TwisterChain® Series
# System Analysis

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec/RFQ: http://www.igus.com/quickspec



## This calculation sheet should help you to select the right igus® TwisterChain® System for your application.




### Rotation angle

Please sketch the cable and hose layout within the E-Chain®. **Note:** To find the correct Series, refer to the thickest cable diameter, plus cable clearance of approx. 20% of the E-Chain® interior.

**TwisterChain® Classic Series** ☐ 2208 ☐ 2808 ☐ 3808 ☐ 4008

### Existing installation space

$X_1$ max _____ $X_2$ max _____ $H_F$ max _____

### E-Chain® data

Outer radius *AR* _____ Inner radius *IR* _____

Bending radius *R* _____ Rotation angle (°) _____

**Guide trough** ☐ yes ☐ no

**Part No. trough Type 02** 9 ____ - __ - ___ - ___ / __ - ___

Order example 92808-31-180-600/06-250

**Supporting structure necessary** ☐ yes ☐ no

The guide trough part number includes all the necessary elements for proper operation. The rotation angle is dependent upon support for the upper run and should be assembled on-site. If on-site assembly is not possible. we will deliver a supporting structure which can be assembled on the floor and is based on the height of the lower trough run. If necessary, we will design a supporting structure specially adapted to your installation!

# E-Chain System®
# TwisterChain® Series
# System Analysis



| | |
|---|---|
| Date: | Telephone: 401-438-2200 or 800-521-2747<br>Fax: 401-438-7270 |
| From:<br><br><br><br>Telephone:<br>Fax: | To:<br>igus,inc.<br>Technical Sales<br>E-Chain Systems®<br>P.O. Box 14349<br>East Providence, RI 02914 |

Please supply us with your application data. We will then send you a full analysis with cable/layout suggestion and a quotation immediately. Please consult igus® should you have any questions.
Individual components:

☐ TwisterChain® ☐ Chainflex® high-flex cables ☐ Guide trough ☐ Pre-assembled

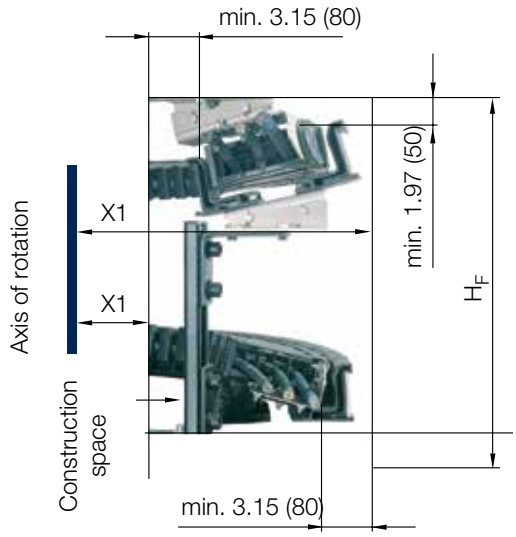
## Cable and Hose package for igus® TwisterChain® Classic

| Number | Type | Ø | Weight (lbs/ft) | Permitted Bending Radius |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## Dimensions

$X_1$ in mm _____
$X_2$ in mm _____
$H_F$ in mm _____
Angle of rotation $\alpha$* in ° _____

* On machine elements which move to the left and to the right following a circular path, the angle of rotation can be determined by adding the two angles.




## Operating data

Rotations/day _____
Days/year _____
Speed in ft/s _____
Acceleration in ft/s² _____

## Environment

Temperature in °F _____
Moisture ☐ yes ☐ no

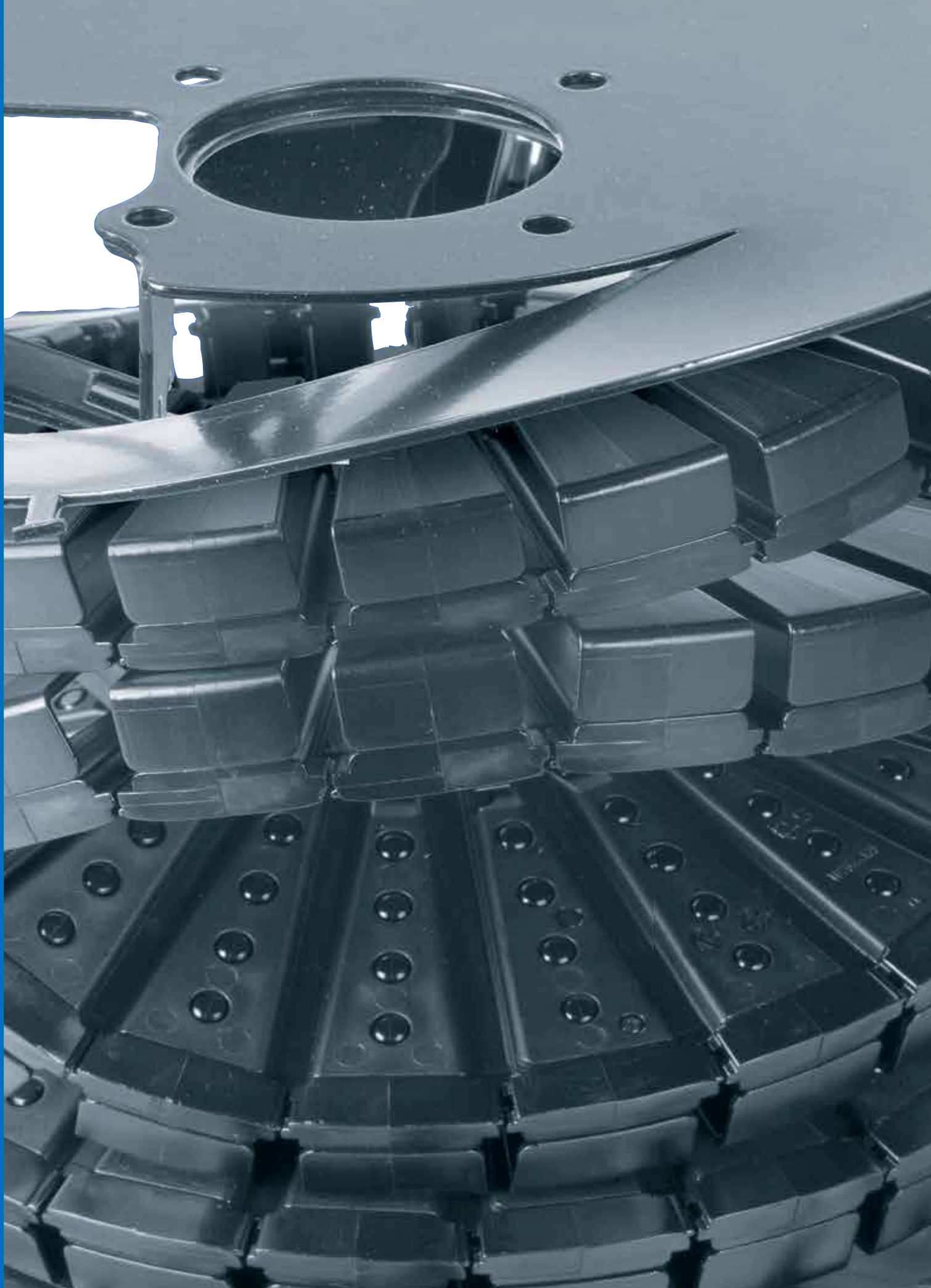
Remarks:

_____
_____
_____
_____

**Please copy, fill in, and fax this page.**

**Thank you!**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



igus®

# TwisterBand

## Rotary motions in small spaces

# TwisterBand: compact, modular and cost-effective

Rotary movements in minimum space - 20 times around its own axis
With the very compact igus® TwisterBand rotations can be implemented economically and with low wear and low maintenance in a confined space. Energy (in the process), data and media are kept secure.

- 4 sizes available
- Rotary movements up to 7000° (installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- Rotary speeds up to 360°/s possible
- Compact, modular and lightweight
- Ribbons can be shortened easily
- Minimum installation space, builds very close around the rotary axis
- Can be reliably used in various installation positions (horizontal or vertical)
- Cost-effective
- Easy filling
- Limited length compensation possible in combination with igus® Chainflex® cables in very limited spaces

**Typical industries and applications**

● Cable reels ● Robots (robot arms, 1/6 axis, scara robots) ● Tooling machines ● Leisure rides ● Medical equipment ● Radar and telescope equipment ● Aerospace, test, measurement, handling, lifting and installation equipment ● Wind turbines (e.g. blade adjustment) ● Wherever rotary unions are used

product design award 2011

reddot design award winner 2011

In the Netherlands the TwisterBand will be used at the musical “Soldaat van Oranje“ ensuring that a special platform can turn during the show

# TwisterBand Features

An axis is to be centrally installed for angles of rotation from 1500° rotating and horizontal

**360°... 3000°**

Max. rotation angle: As a rule of thumb: Each section gives 180° = 360° more rotation

Film hinge: Easy access and quick filling with cables and hoses (TB20-44-18- / TB30-75-22-)

igus® TwisterBand:
Minimum installation space, builds very close around the rotary axis

Compact, modular, economical - up to 7.000° rotary* motions in smallest spaces (*Installation position, vertical: up to 3.000°, horizontal: 7.000° and more possible)

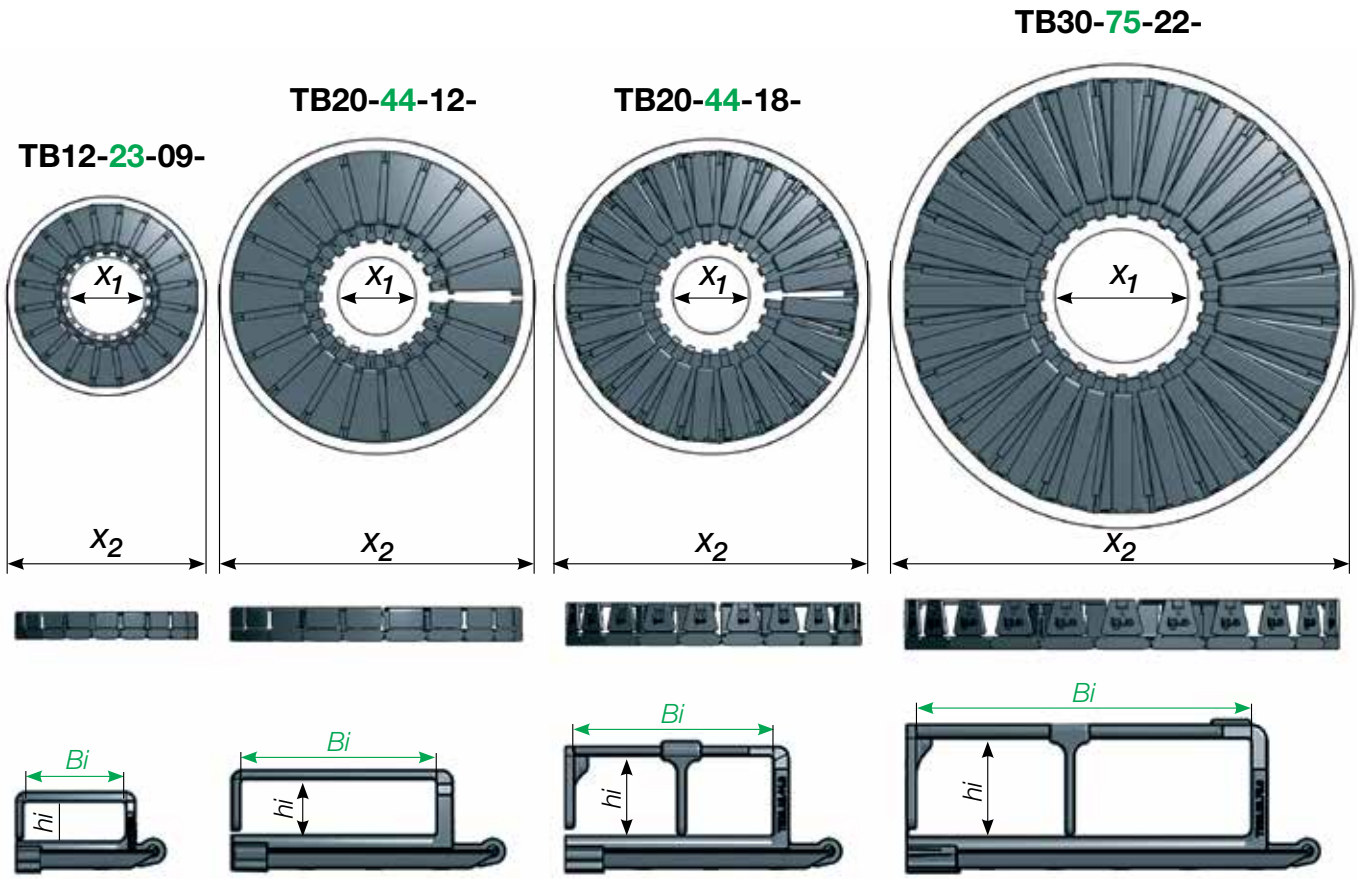
Can be reliably used in various installation positions (horizontal: 7.000° and more possible). Limited length compensation possible

# E-Chain System®
# TwisterBand Series
# Selection Guide

**TwisterBand**
Rotary movements in minimum space -
20 times around its own axis

| Series | Inner height *hi* (mm) in. (mm) | Inner width *Bi* (mm) in. (mm) | $X_1$ (mm) in. (mm) | $X_2$ (mm) in. (mm) | R min. (mm) in. (mm) | R max. (mm) in. (mm) | Interior Separation | Opening Design |
|---|---|---|---|---|---|---|---|---|
| **TB12-23-09-X-01-0** | .35 (9) | .91 (23) | 1.57 (40) | 5.51 (140) | .94 (24) | 1.38 (35) | — | "Easy" design |
| **TB20-44-12-X-01-0** | .47 (12) | 1.73 (44) | 1.97 (50) | 8.66 (220) | 1.34 (34) | 2.24 (57) | — | "Easy" design |
| **TB20-44-18-X-01-0** | .71 (18) | 1.73 (44) | 1.97 (50) | 8.66 (220) | 1.34 (34) | 2.24 (57) | Yes | Film-hinge |
| **TB30-75-22-X-01-0** | .87 (22) | 2.95 (75) | 3.54 (90) | 12.99 (330) | 1.73 (44) | 3.03 (77) | Yes | Film-hinge |

$X_1$ = inner machine construction space $X_2$ = Outer machine construction space
More sizes available upon request




**Installation position, vertical: up to 3.000°, horizontal: 7.000° and more possible

# E-Chain System®
# TwisterBand Series
# Assembly Instructions

## TB20-44-18- / TB30-75-22-, Snap open along outer radius with film-hinge

1

Easy opening and filling of
TwisterBand with a click

2

Please open lock...
insert the cable...

3

Push the separator on and add more cables

4

Close film-hinge with a click ...ready!

## TB12-23-09- / TB20-44-12-, “Easy” design - simply press cables in

1

Easy opening and filling of TwisterBand
due to the “Easy” design

2

Please lift E-Chain® clamp slightly
and simply insert cable

# E-Chain System®
# TwisterBand Series

**Ground- and base plates are delivered standard. They are part of the TwisterBand module!

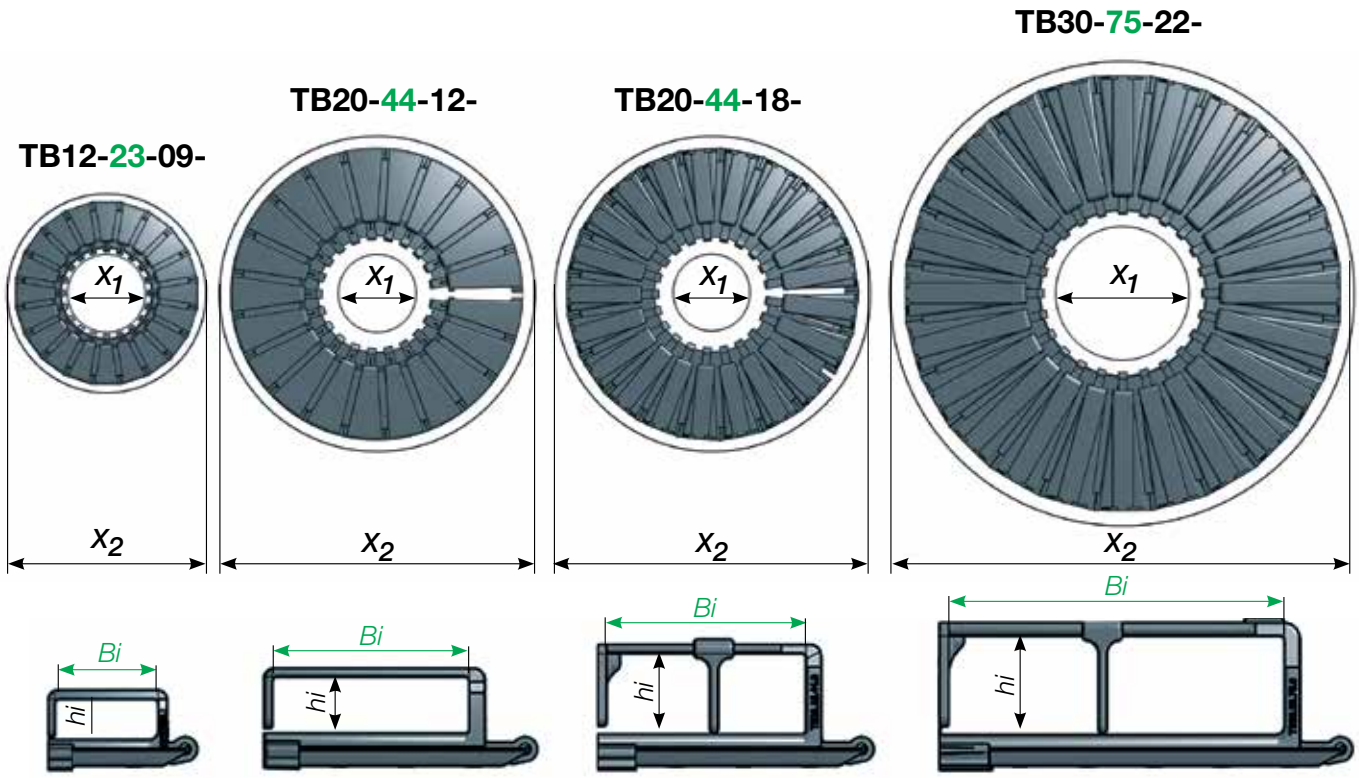
## Rotary motions in smallest spaces

**When to use the TwisterBand:**

- Rotary movements up to 7000° (Installation position, vertical: up to 3000°, horizontal: 7000° and more possible)
- For smallest spaces
- Rotary speeds up to 360°/s possible*
- Some parts available with interior separation*
- Easy to fill with film-hinge or to be opened with “Easy” design*
- Limited length adjustment possible
(*depending on Series)

**When to use a different igus® Series:**

- For higher fill weights
➤ **System TwisterChain® New, Chapter 8**
- For 3D-movements
➤ **Triflex® R, Chapter 8**
- RBR versions for additional fill weights
➤ **Design, Chapter 1**
- If a smear-and maintenance-free polymer slewing bearing for “endless” turning movements is required
➤ **iglide® PRT, iglide® Bearing Catalog**
- Use of shielded cables
➤ **please call for support**




| Series | Inner height *hi* | Inner width *Bi* | $X_1$ | $X_2$ | *R min.* | *R max.* | d1 | Opening Design |
|---|---|---|---|---|---|---|---|---|
| | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | in. (mm) | |
| TB12-23-09-X-01-0 | .35 (9) | .91 (23) | 1.57 (40) | 5.51 (140) | .94 (24) | 1.38 (35) | .28 (7) | "Easy" design |
| TB20-44-12-X-01-0 | .47 (12) | 1.73 (44) | 1.97 (50) | 8.66 (220) | 1.34 (34) | 2.24 (57) | .35 (9) | "Easy" design |
| TB20-44-18-X-01-0 | .71 (18) | 1.73 (44) | 1.97 (50) | 8.66 (220) | 1.34 (34) | 2.24 (57) | .55 (14) | Film-hinge |
| TB30-75-22-X-01-0 | .87 (22) | 2.95 (75) | 3.54 (90) | 12.99 (330) | 1.73 (44) | 3.03 (77) | .67 (17) | Film-hinge |

*Ground and base plates are delivered standard. They are part of the TwisterBand module! More TwisterBand sizes upon request!

**Supplement Part No. with required number of ribbons X (see calculation box) e.g. TB20-44-12-6-01-0**

## Calculation

### Number of ribbons
depending on rotation angle

(please always round up number of ribbons)

**TB12:** $X \approx \frac{\text{Rotation angle}}{360} + 2 =$ Example:

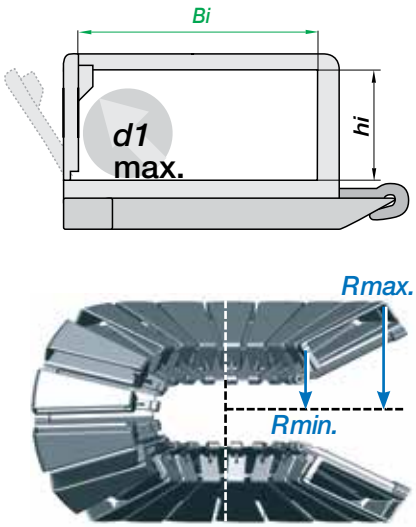
$X \approx \frac{1200°}{360} + 2 =$ result: **X ≈ 6 ribbons**

**TB20:** $X \approx \frac{\text{Rotation angle}}{340} + 2 =$ Example:

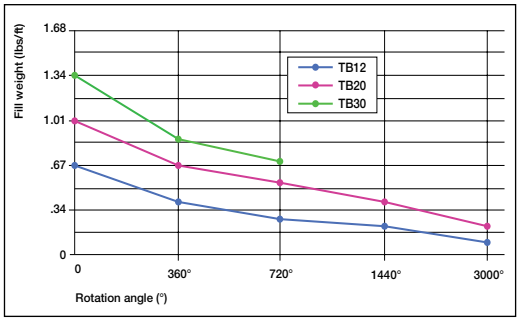
$X \approx \frac{1200°}{340} + 2 =$ result: **X ≈ 6 ribbons**

**TB30:** $X \approx \frac{\text{Rotation angle}}{180} + 2 =$ Example:

$X \approx \frac{1200°}{180} + 6 =$ result: **X ≈ 9 ribbons**

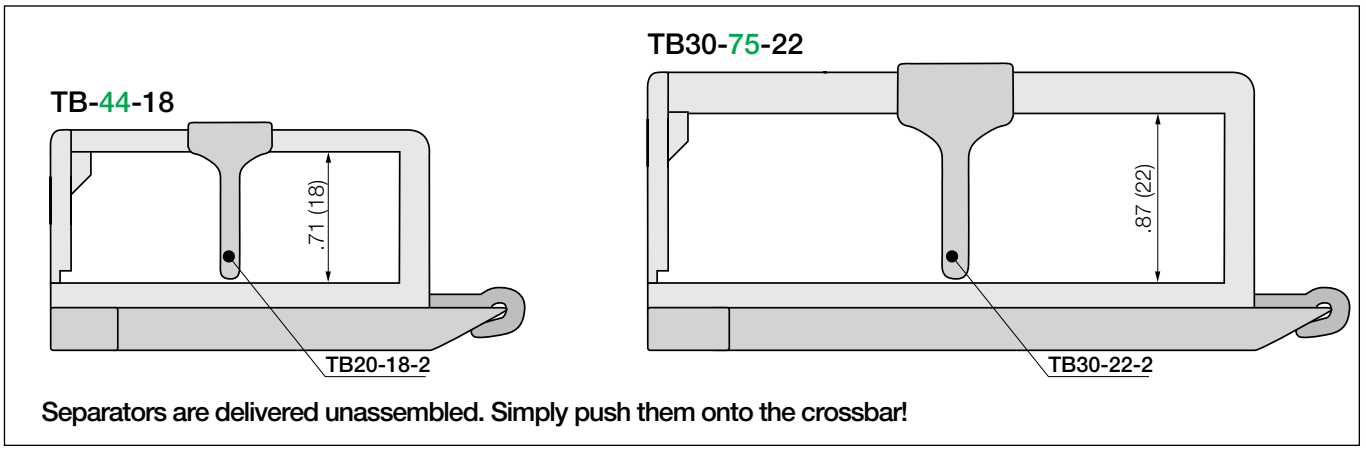



### Additional loads depending of the rotation angle

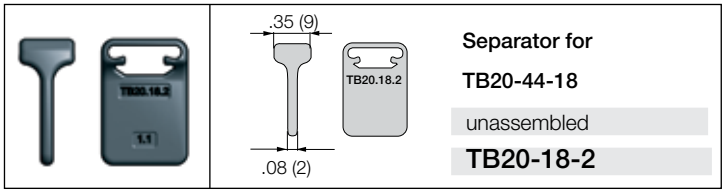



*Bi* = Inner width, E-Chain®
*hi* = Inner height, E-Chain®
$X_1$ = Inner machine construction space
$X_2$ = Outer machine construction space
*R min.* = Minimum bending radius
*R max.* = Maximum bending radius
*d1* = Maximum cable diameter
*X* = Number of ribbons

# E-Chain System®
# TwisterBand Series
# Interior Separation




**Separators are delivered unassembled. Simply push them onto the crossbar!**

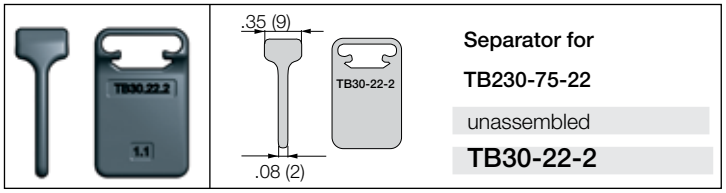



**Separator for**

**TB20-44-18**

unassembled

**TB20-18-2**




**Separator for**

**TB230-75-22**

unassembled

**TB30-22-2**

**Separators**

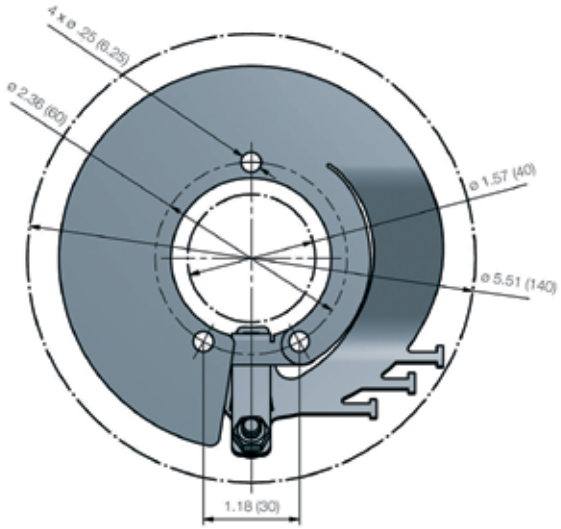
For Series TB20 with an inner height of 18 mm and Series TB30 inner height: .87" (22 mm). For installation simply open the E-Chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

Easy opening and filling of the TwisterBand with a click or with the "Easy" design. Simply push separators on and add more cables. The separators provide a clear, cable-friendly interior separation.

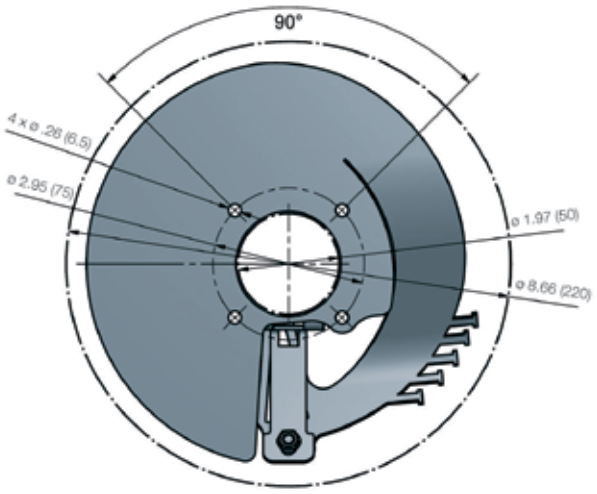
# E-Chain System®
# TwisterBand Series Ground and Base Plate Strain Relief

Dimensions - ground / base plate made of steel with strain relief for the following Series:

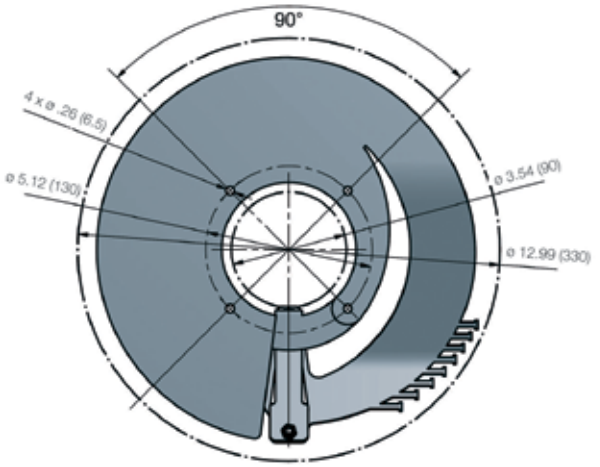
**TB12-23-09-**




**TB20-44-12- / TB20-44-18-**




**TB30-75-22-**




**Ground plate and base plate are delivered standard. They are part of the TwisterBand module**

TwisterBand application of two systems mounted above one another. This space-saving solution allows double filling space with a constant outer diameter of the system

# E-Chain System®
# TwisterBand Series
# Testing and Applications

Endurance test of a TwisterBand module in the igus® test laboratory

Customer application with TwisterBand TB20-44-18. Expensive rotary joints could be replaced here

Suitable igus® chainflex® cables for smallest bending radii at
➤ www.igus.com/chainflex

# E-Chain System®
# TwisterBand Series
# System Analysis Fax Sheet



## Short description of application

Which task should be performed

Solution at the moment

Rotating angle (°)

Min. service life (cycles)

Frequency (°/s)

☐ Continuous rotation ☐ Stop & Go

## Cable specification

| Quantity | Type (control, data, servo, hoses, etc.) | Outer diameter ø in. (mm) | min. bending radius in. (mm) |
|---|---|---|---|
| | | | |

## Environment

Ambient temperature (F°)

☐ ATEX/ESD ☐ Cleanroom

## Your data

Company

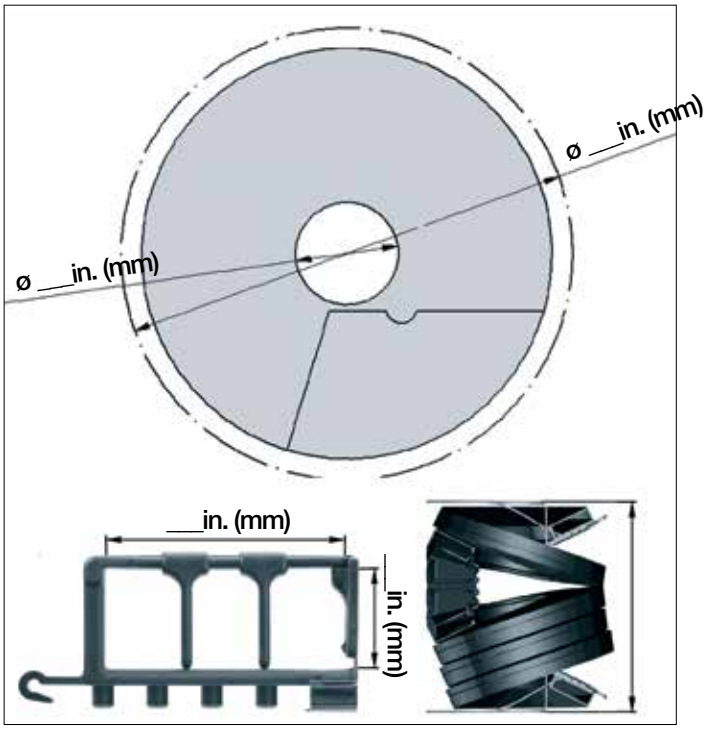
Name

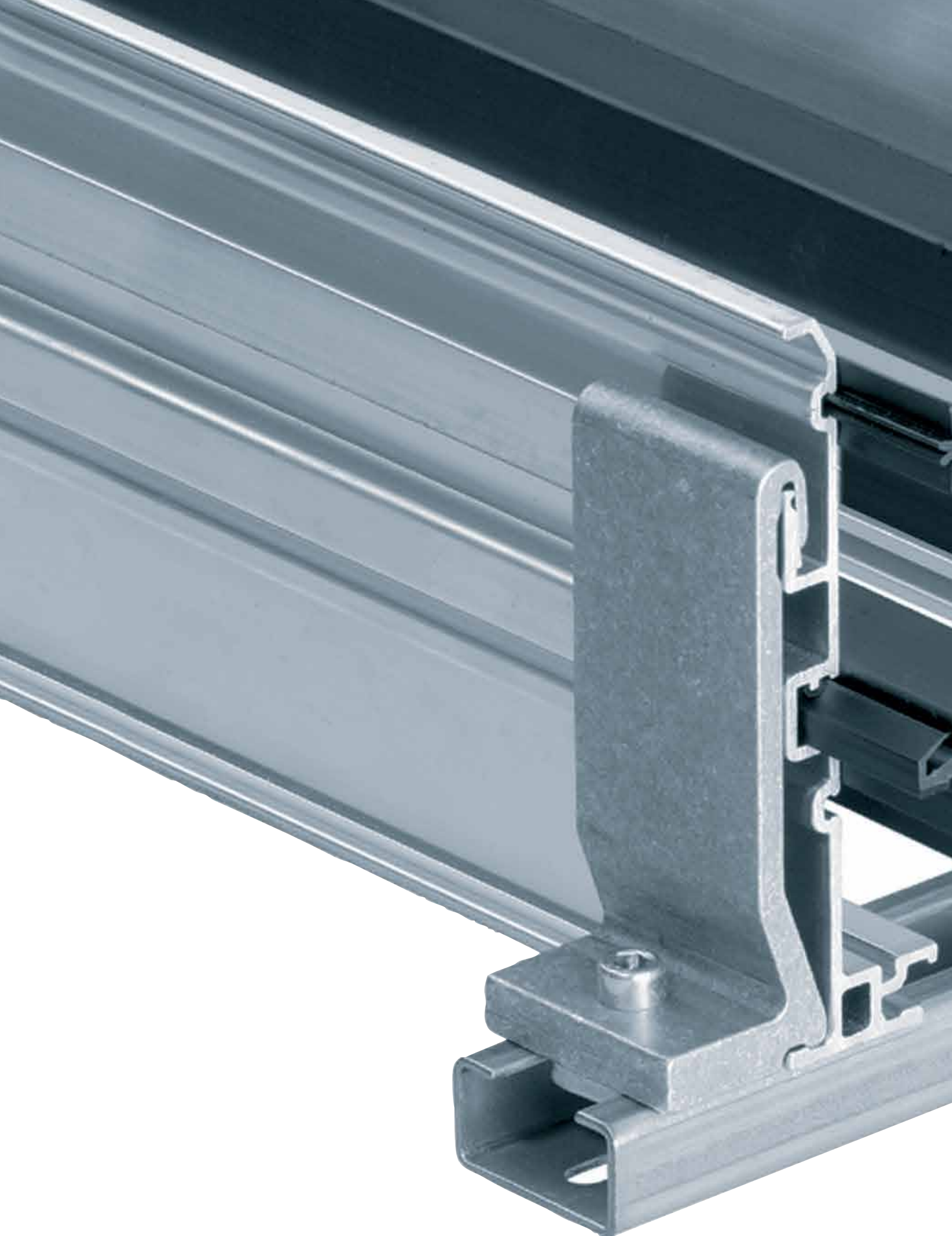
Address

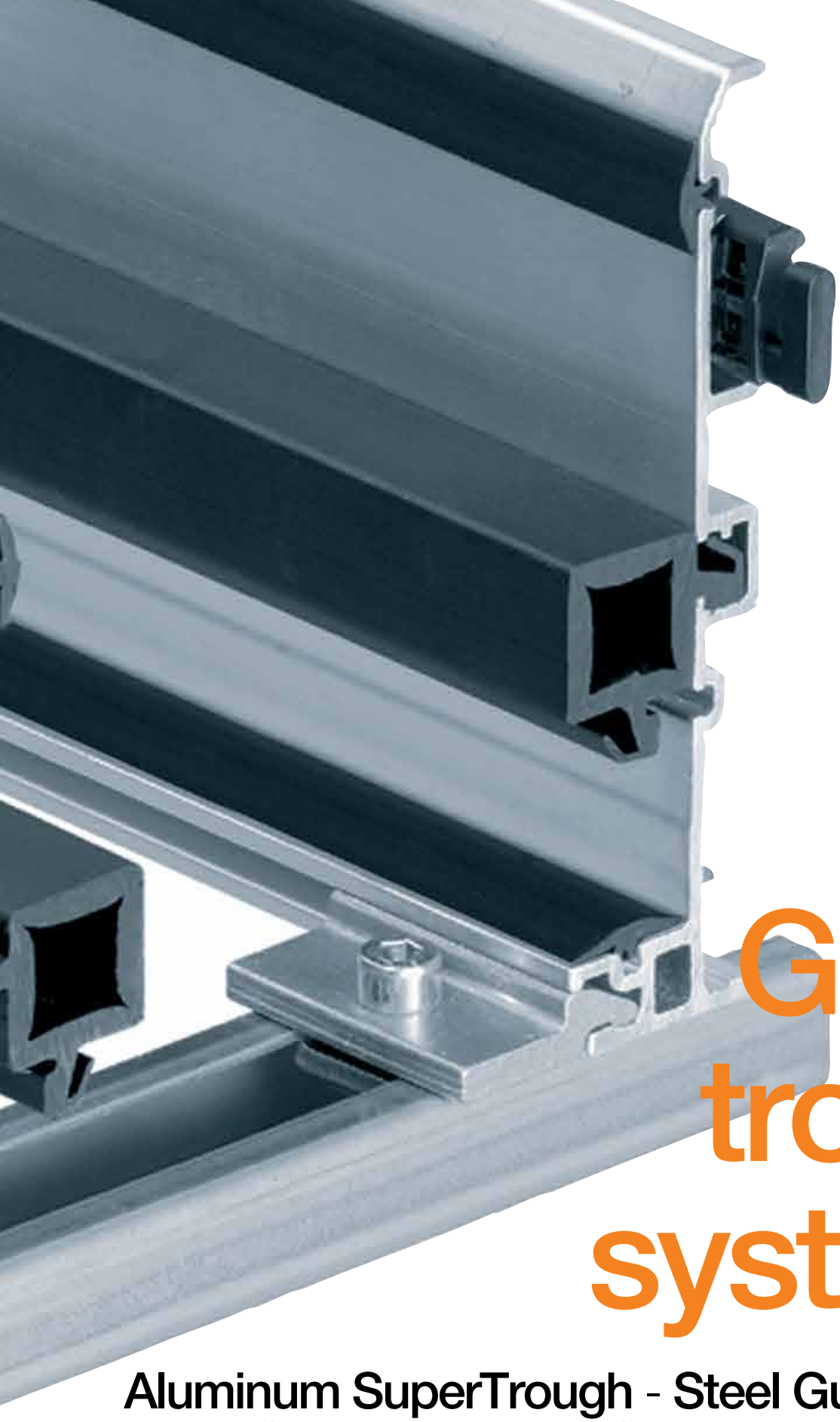
Phone/Fax

E-mail

## Sketch please enter your dimensions in. (mm)



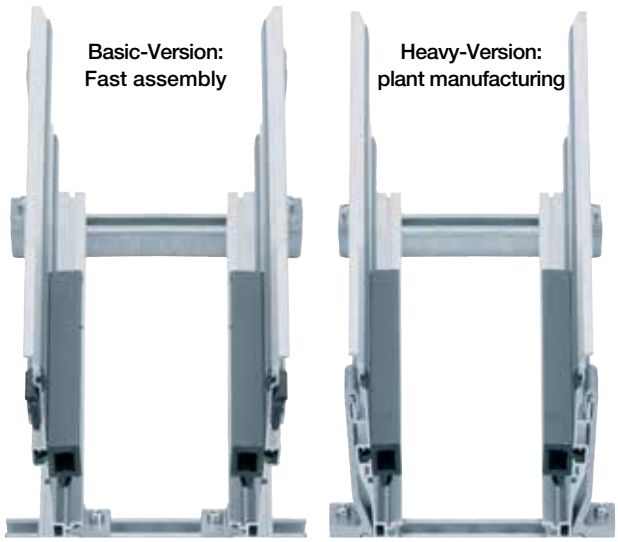




# Guide trough systems

## Aluminum SuperTrough - Steel Guide Trough Support Tray - Guidefast - Guidelite

# Guide Troughs - Aluminum and Steel




## Aluminum SuperTrough - The igus® standard guide trough

- Huge program available for almost all igus®
- Very simple, modular assembly
- Side-mounted glide strips for wear protection in high-speed
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Plastic glide bar made of PE
- Bottom clamp can be mounted -inside or outside- directly on the bottom or on the profile rail
- Heavy duty brackets for high load applications (add on item)

## Steel guide trough - stable and rugged for heavy duty applications

- Very stable and robust guide trough made of steel for high load applications
- Easy assembly due to installation set for joint and attachment surface connection
- Simple fastening directly on the ground or with profile rails
- Big range, two piece design, adjustable to E-Chain® width
- Available in galvanized steel and stainless steel
- Low friction: glide bar made of PE
- Fixed end module, for fast and easy mounting - without drilling (add-on item)

# Other Trough Options

## For support of the lower run - Support tray tool kit

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

## For crane girders and indoor cranes - Guidefast guide trough

- Save up to 80% installation time
- Fits virtually any standard crane girder
- Simplified installation, permanently installed cable can be fixed at the trough brackets
- With plastic glide bars for center fed applications

## Realize long travels up to 492 ft - Guidelite - quick and cost-effective

- Simple one-piece support trays
- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets

# Guide Trough Systems
# An introduction to long travels

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Various guide trough systems are available

Hundreds of igus® Guide Trough in stock

**We are always happy to advise you by telephone or on site. Special solutions provided by igus® often result in significant assembly cost savings.**

## igus® guide troughs

Guide troughs are used for long travels. They allow for smooth low-friction operation in long travel applications. If the fixed end is installed in the center of the travel (center mounted), the E-Chain® glides on itself for half the travel. For the other half we recommend glide bars, which are assembled in the trough and on which the E-Chains® glide. igus® guide troughs are available from stock with these highly abrasion resistant polymer glide bars, which perform well with igus® E-Chains® regarding noise, abrasion and friction.

## Trough type

igus® offers guide troughs made of corrosion-resistant aluminum or steel. The trough type to be used depends on the application conditions and the requirements of the customer.

## Glide bars

Glide bars made of igulen are optimally matched to the E-Chain® material and achieve the lowest values of friction, noise and wear. Glide bars must be used if the fixed point is in the center of the travel. Refer to pictures below.

## Delivery condition

The troughs are supplied in 6.56 ft (2 m) sections. The side parts (left and right) are installed on site at the required distance apart, depending on the width of the chain. The necessary width is shown in the table on the guide trough page of the respective chain chapter. The side parts of the trough can be bolted or welded directly to the attachment surface or connected to the base by means of screwing or welding or by using a special igus® installation set.
Guide trough systems can be ordered various ways: all the individual parts as separate components or completely assembled.

## Customer-Supplied Guide Troughs

The dimensional data in this chapter consists of auxiliary dimensions for design and assembly. They apply exclusively to igus guide trough systems.
If the igus® E-Chain® customer supplies the trough, all dimensions (including installation dimensions) must be obtained from igus. This is particularly important for one-piece guide troughs. The clearance between the guide trough and E-Chain® is crucial and depends on the chain type, length and size, as well as the bending radius and the tolerance of the carrier and the attachment surface.
Since such guide troughs cannot be adjusted according to the application during the assembly process and cannot be readjusted in operation, careful calculation is required throughout this process.

**Trough without glide bars:**
**E-Chain® glides on top of itself**

**Trough with glide bars:**
**E-Chain® glides on glide bars**

**Center mounted:**
**1/2 travel with glide bars**
**1/2 travel without glide bars**

# Guide Trough Systems
# An introduction to long travels



For long travels, the upper run of the igus® E-Chain® rests on the lower run. The upper run glides partially on the lower run and partially at the same height on the glide bar. The diagram below shows this. For lateral guidance, a guide trough is necessary. If the stationary mounting bracket and the fixed end of the cables and hoses can be placed in the center, the E-Chain® length is calculated as follows: $L_k = {}^{s}/_{2} + K_2$

The shortest E-Chain® length is attained by the axial feeder module. The length of the E-Chain® then corresponds to about half the travel distance. Depending on the technical data and the selected E-Chain® the mounting point of the moving end of the E-Chain® must be lowered on some units. In our system analysis for long travels we give exact details for your specific application.

## Selection criteria

The following parameters are required for the design of a trough system:
Following parameters are required for the design of a trough system:

- E-Chain® type (Series, width *Bi*, radius *R*)
- Travel and travel speed
- Fill weight
- Acceleration and/or lagging
- Lateral accelerations
- Environmental conditions

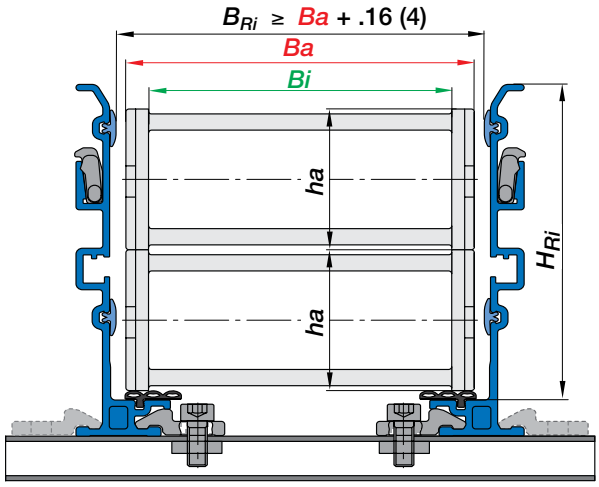
## Design and installation of the guide trough

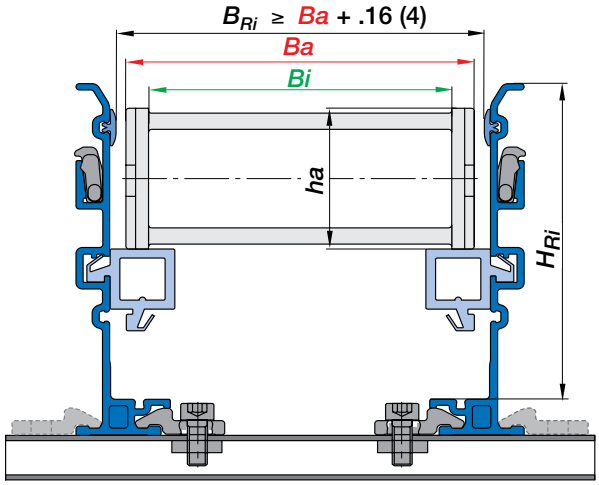
The guide trough is an important element in long travel applications. Usually, the height of the trough must be at least twice that of the E-Chain® link height: $H_{RI} \geq 2 \times ha$. The sides must provide a chamfered opening. The trough inner width is the same as the E-Chain® outer width, plus .16" (4 mm) $B_{Ri} = Ba + .16$ (4). Along the side of the trough, where the upper run cannot glide on the lower run, glide bars must be installed. We recommend the use of polymer glide bars from igus®. They are optimally matched to the E-Chain® material and achieve the lowest values for friction, noise and wear. Guide troughs with and without glide bars can be obtained for almost all igus® E-Chains®.

**Important: When assembling the trough parts, the following points must be given particular attention:**

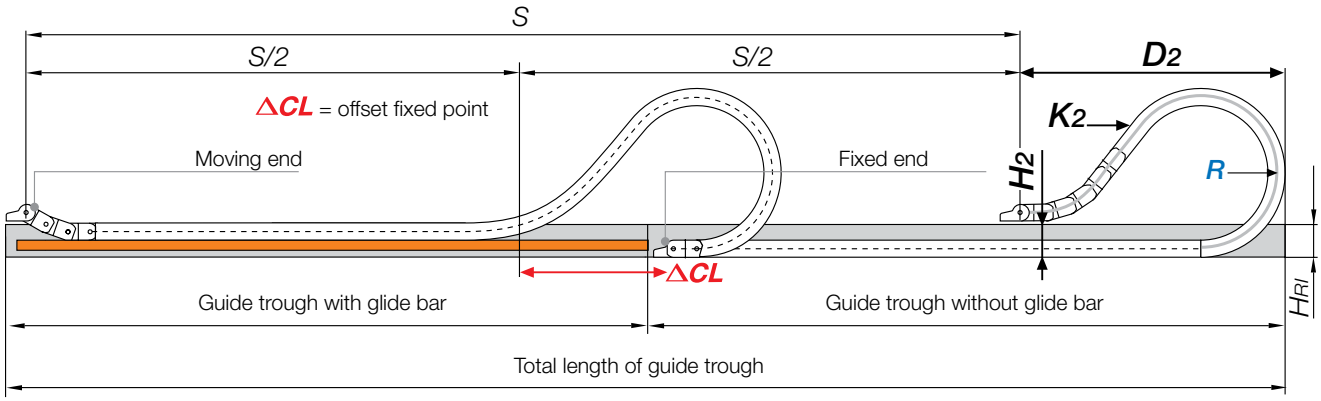
- Properly align all trough parts upon installation
- All screw heads should be flush with the trough
- Smooth leveled transition between the end of the E-Chain® and the glide bars
- Solid connection with the glide surface.

**These points must be observed when using assembly-friendly igus® guide troughs.**




| | |
|---|---|
| E-Chain® length | $L_k = {}^{s}/_{2} + K_2$ |
| Inner trough height | $H_{Ri} \geq 2 \times ha$ |
| Inner width, Aluminum SuperTrough | $B_{Ri} = Ba + .16$ (4) |
| | (*Ba* + *5* Steel guide trough) |

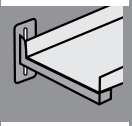


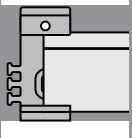

- Trough set
- Installation set
- Glide bar
- Profile rail

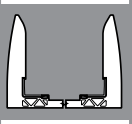
| | | | | | |
|---|---|---|---|---|---|
| *Ba* | = Outer width E-Chains® | $B_{Ri}$ | = Inner trough width | $H_2$ | = Mounting height (if the moving end is set lower) |
| *Bi* | = Inner width E-Chains® | $B_{Ra}$ | = Outer trough width | $D_2$ | = Over length - long travels, gliding |
| *R* | = Bending radius | $H_{Ri}$ | = Inner trough height | $K_2$ | = Further add-on (if the moving end is set lower) |
| ΔCL | = Offset fixed point | $H_{Ra}$ | = Outer trough height | $H_F$ | = Required clearance height |
| *S* | = Length of travel | *ha* | = Outer E-Chain® height | | |
| *S/2* | = Half length of travel | $L_k$ | = E-Chain® length | | |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









# Guide Trough Systems
# Profile Rail



Telephone 1-800-521-2747
Fax 1-401-438-7270

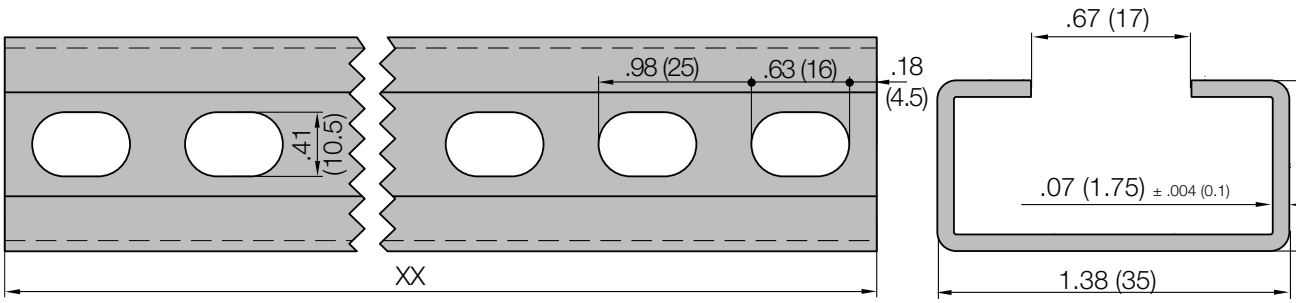
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

**Profile rail Part No. 92-52-XX**

- For all igus® Aluminum SuperTrough and Steel guide troughs
- With increased holding power - even for harsh applications
- Standard material: galvanized steel
  Part No. CF-92-52G-XX (XX - length in mm)
- Profile rail available in galvanized steel. Optional:
  Stainless steel material V2A, material 1.4301 (AISI 304).
  For AISI 304 please add index "SS" to the Part No. CF-92-52GSS
- Length tolerances of ±5 mm possible!

## Profile rail Part No. CF-92-52G -
## With increased holding power also for harsh conditions

Assembly in front of the E-Chain® - CANNOT be integrated into KMA mounting bracket

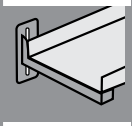


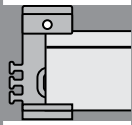
Profile rail Part No. CF-92-52G.XX - For all igus® Aluminum SuperTrough and Steel guide troughs

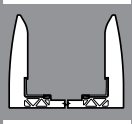
All types of installations are possible. Very long, "green systems" up to 2,018 ft. (615 m) help to reduce energy costs, and are comprised of igus® E-Chains®, Chainflex® cables and corresponding guide troughs. Mix-and-match components allow for maximum design flexibility, and all igus® E-Chains® and Chainflex® cables offer extended service lives, even in harsh weather, polluted environments, and dirty, dusty applications



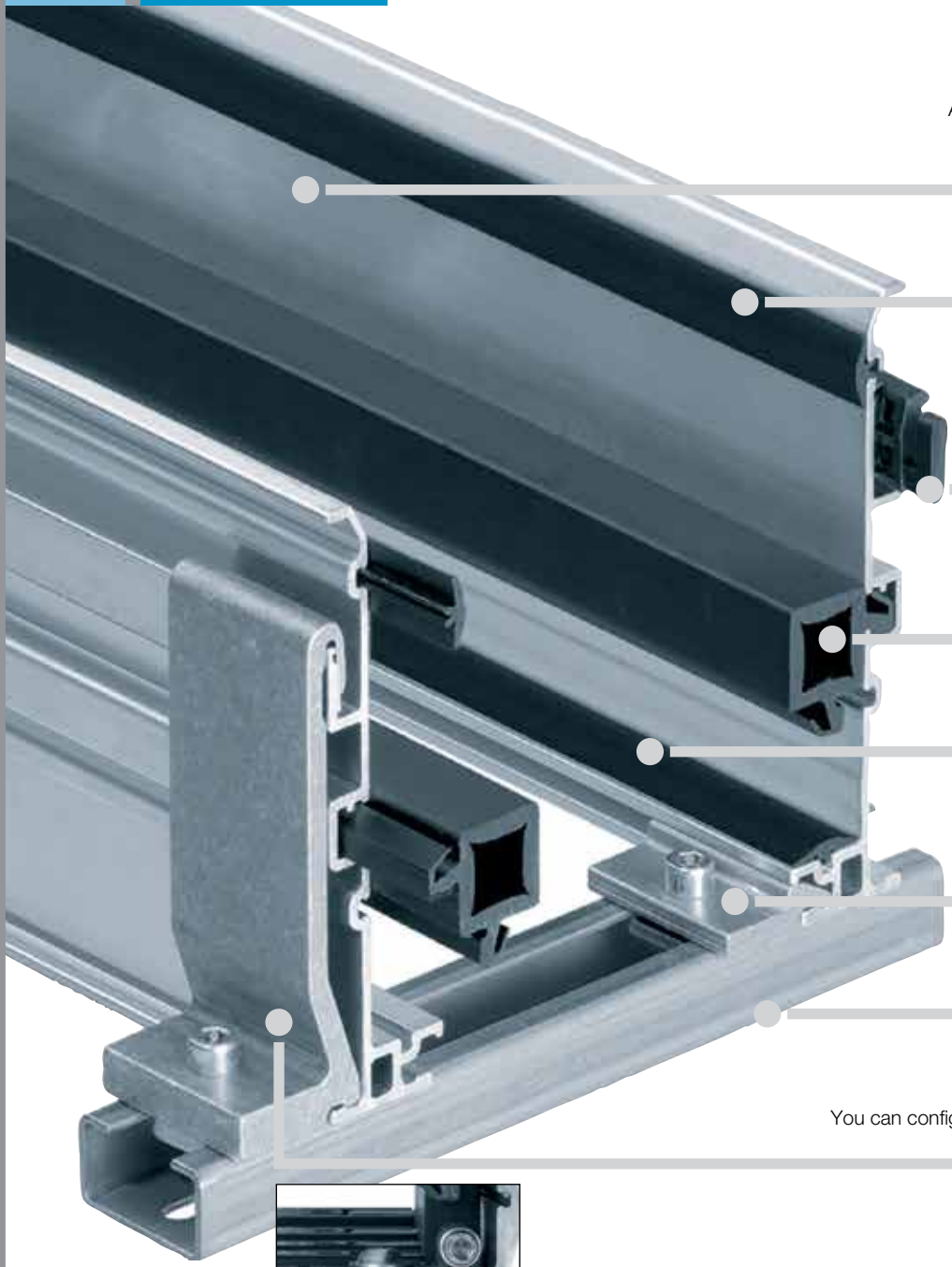








# Guide Trough Systems
# Aluminum SuperTrough
# Advantages



Huge program:
Aluminum profile (Standard: 6.56 ft. (2 m) section)
available for almost all igus® E-Chains®
Seawater resistant and corrosion resistant

Wear-reducing: Glide strip
Protect from wear on the sides

Fast connection:
Interface connector Basic, plastic, easy
assembly, no tools needed

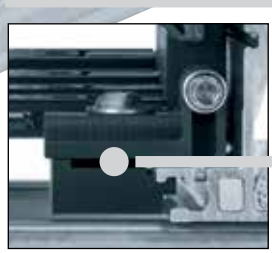
Wear-reducing
Plastic glide bar
Easy click-on assembly

Noise-reducing:
Silencer profile, rubber (add-on item)

Simple fastening: Bottom clamp Basic,
attached inwards or outwards, fast and easy

Simple fastening:
Profile rail, for bottom clamps

high load: Heavy-Duty bracket (add-on item)
You can configure the Heavy-Duty version at our online-catalog
➤ **www.igus.com**



Simple connection:
Fixed end module (add-on item),
for fast and easy mounting - without any drilling

# Aluminum SuperTrough

The Aluminum SuperTrough is a modular guide trough system for long travels (gliding application). Aluminum SuperTrough is available in low cost basic versions and can be upgraded for Heavy-Duty applications. This modular usage makes it the igus® recommended standard trough system.

- Very simple, modular assembly
- Corrosion resistant, seawater resistant aluminum profile
- Flexible assembly - Fastening on substructure independent of profile lengths and butt joints
- Misalignment-free installation - No screwing or welding of the profiles required

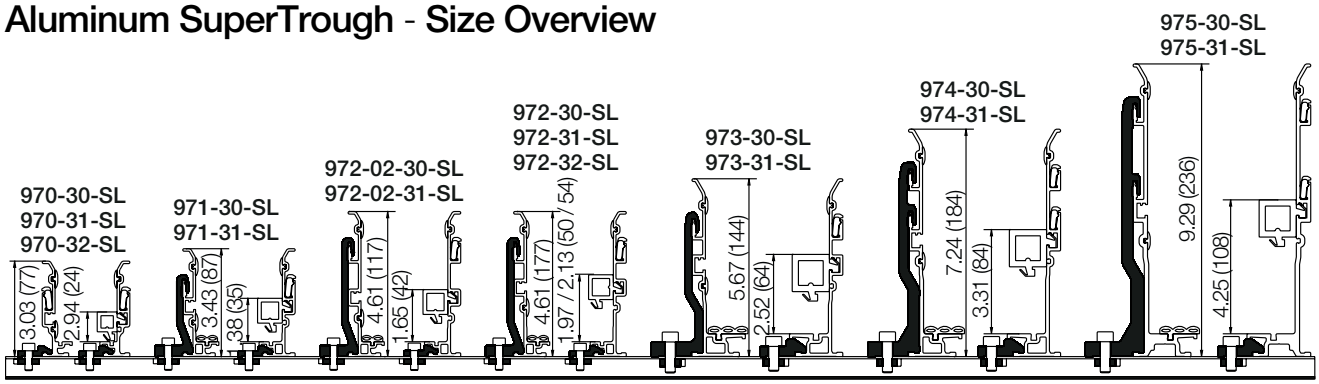
Installation Guide PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf

# Guide Trough Systems
# Aluminum SuperTrough
# Selection Guide

| Series<br>Part No. | Outer trough height<br>$H_{Ra}$ (mm) | Installation set*<br>Part No. | side part<br>material |
|---|---|---|---|
| | | | |
| | | | **Basic version, Standard -**<br>for general use |
| **970-30-SL / 970-31-SL** | 3.03 (77) | 960-30 | aluminum |
| **970-30-SL / 970-32-SL** | 3.03 (77) | 960-30 | aluminum |
| **971-30-SL / 971-31-SL** | 3.43 (87) | 960-30 | aluminum |
| **972-02-30-SL / 972-02-31-SL** | 4.61 (117) | 960-30 | aluminum |
| **972-30-SL / 972-31-SL** | 4.61 (117) | 960-30 | aluminum |
| **972-30-SL / 972-32-SL** | 4.61 (117) | 960-30 | aluminum |
| **973-30-SL / 973-31-SL** | 5.67 (144) | 960-50 | aluminum |
| **974-30-SL / 974-31-SL** | 7.24 (184) | 960-50 | aluminum |
| **975-30-SL / 975-31-SL** | 9.29 (236) | 960-50 | aluminum |
| | | | **Heavy Duty version -**<br>for rugged plant construction<br>**You can configure the Heavy Duty version online with the respective E-Chain® you've chosen** |
| **971-30-SL / 971-31-SL** | 3.43 (87) | 971-50 | aluminum |
| **972-02-30-SL / 972-02-31-SL** | 4.61 (117) | 972-50 | aluminum |
| **972-30-SL / 972-31-SL** | 4.61 (117) | 972-50 | aluminum |
| **972-30-SL / 972-32-SL** | 4.61 (117) | 972-50 | aluminum |
| **973-30-SL / 973-31-SL** | 5.67 (144) | 973-50 | aluminum |
| **974-30-SL / 974-31-SL** | 7.24 (184) | 974-50 | aluminum |
| **975-30-SL / 975-31-SL** | 9.29 (236) | 975-50 | aluminum |

*The basic Installation sets are the standard for the Aluminum SuperTroughs. They can be fastened inside or outside and are recommended for most application areas. The basic clamping shoes are made of aluminum. The Heavy-Duty version is differentiated only by the type of the installation set. The part numbers of the channel side plates, slide bars, etc., are the same as the basic model. The Heavy-Duty installation set consists of a rugged aluminum bracket, fastened outside on the guide trough.

## Aluminum SuperTrough - Size Overview




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Aluminum SuperTrough - Basic Components

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

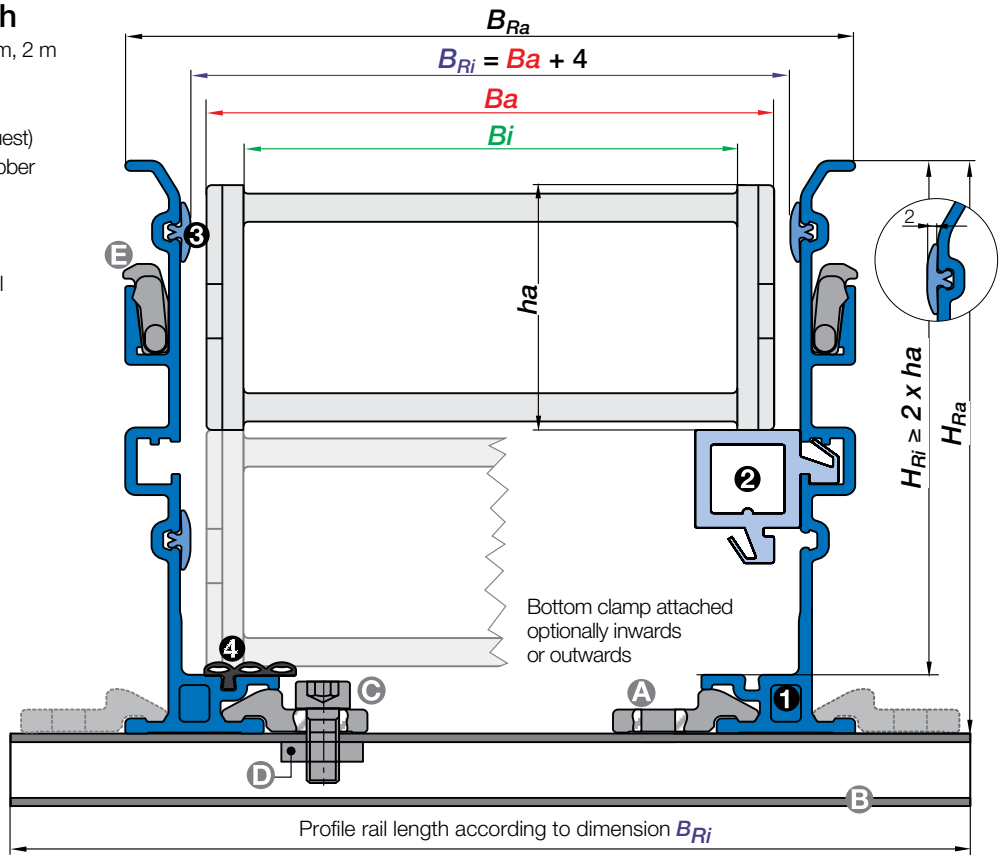
## Components, trough

❶ Trough side parts, aluminum, 2 m
❷ Glide bar, plastic, 2 m
❸ Glide strips, plastic, 2 m
(without glide strips on request)
❹ Optional: Silencer profile, rubber

Components, installation set
Ⓐ Bottom clamp, aluminum
Ⓑ Profile rail[1], galvanized steel
Ⓒ Screw
Ⓓ Sliding nut
Ⓔ Interface connector, plastic

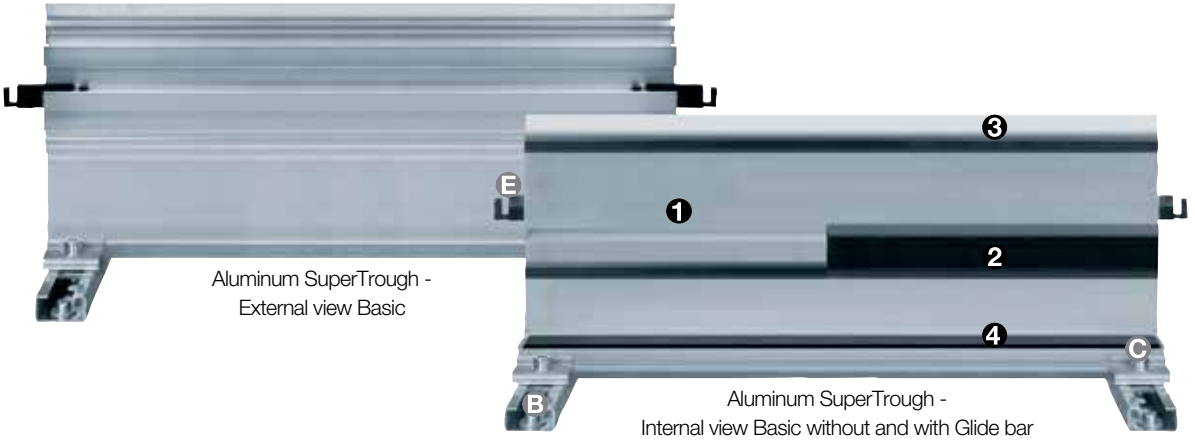
*Ba* = Outer E-Chain® width
*Bi* = Inner E-Chain® width
*ha* = E-Chain® outer height
$H_{Ri}$ = Inner trough height
$H_{Ra}$ = Outer trough height
$B_{Ri}$ = Inner trough width
$B_{Ra}$ = Outer trough width

**$H_{Ri} \geq 2 \times ha$**
**$B_{Ri} = Ba + 4$**



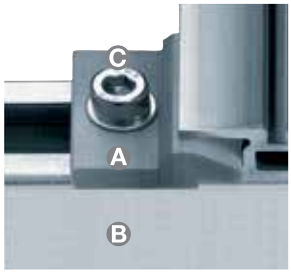

1) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)

## Aluminum SuperTrough | Features

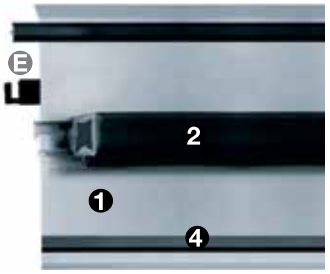


Aluminum SuperTrough - External view Basic

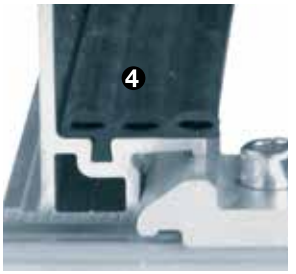
Aluminum SuperTrough - Internal view Basic without and with Glide bar



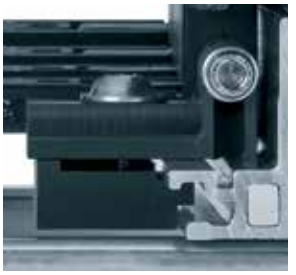
Simple fastening with Basic bottom clamp and profile rail



Wear-reducing with polymer glide bar and glide strip



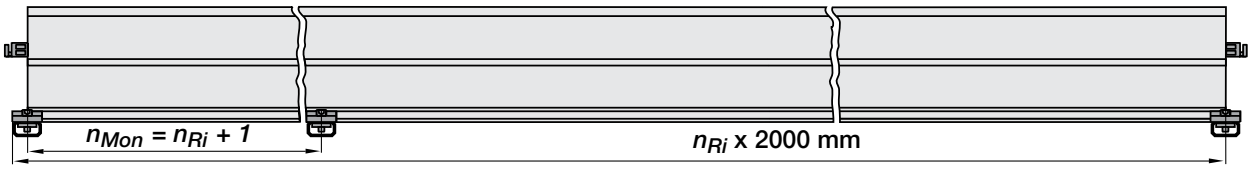
Noise-reducing with silencer profile (add-on item)



Simple connection to the E-Chain® with the fixed end module

## Aluminum SuperTrough - Configured according to your requirements
## Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the E-Chain® Series and E-Chain® width ***Bi***
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Option: “Sound dampening” with silencer profile
- Number and selection of the assembly kit
  There are two assembly kit options: Basic (standard), Heavy-Duty (for plant construction)
  **The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:**




- The assembly kit matches the igus® profile rail option
- If you have opted for an E-Chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the E-Chain® in the trough without holes

**Installation Guide-PDF with detailed assembly information**
**➤ www.igus.com/installation-guide-pdf**

## Order example Based on Part No. 973-30-SL / 973-31-SL

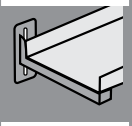
**Order example: Length of travel 98.4 ft. (30 m) -**
**Center mounted for Series 3500-100-200-0 with $B_{Ri}$ = 124**

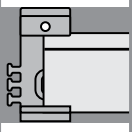
| | |
|---|---|
| Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar | |
| **Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)** | **Part No. 973-30-SL** |
| Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar | |
| **Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)** | **Part No. 973-31-SL** |
| Installation set “Basic” complete **(guide trough-sets + 1)** | |
| **Order text: 17 installation sets “Basic”** | **Part No. 960-40-175** |
| Module for the fixed end | |
| **Order text: 1 set** | **Part No. 973-80-5** |
| **Option:** For an additional noise dampening with | |
| silencer profile, please add Index A Example: | **Part No. 973-30-SLA** |

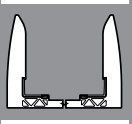
**Calculation - travel center mounted:** Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



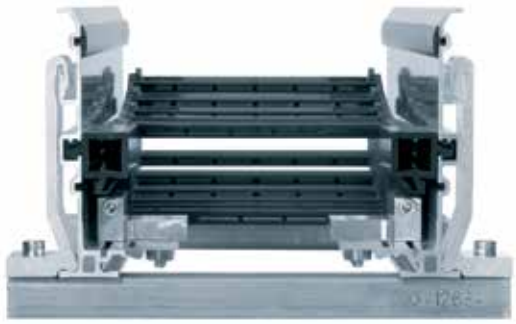






# Guide Trough Systems
# Aluminum SuperTrough
# Fixed End Module

## A quick fix for mounting the stationary end of an E-Chain®



### Optimized fixed end module

- Lighter more cost-effective than previous metal solutions
- Mounting bracket attachment on the Aluminum SuperTrough without drilling
- Fixed end module is clamped to the trough
- Save installation time
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series E-Chains®
- Stainless and cost-effective

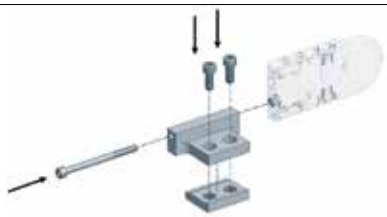
A
Installation - fixed end module

B
Installation - KMA mounting bracket

❶ Removing the pre-assembled metal bushings

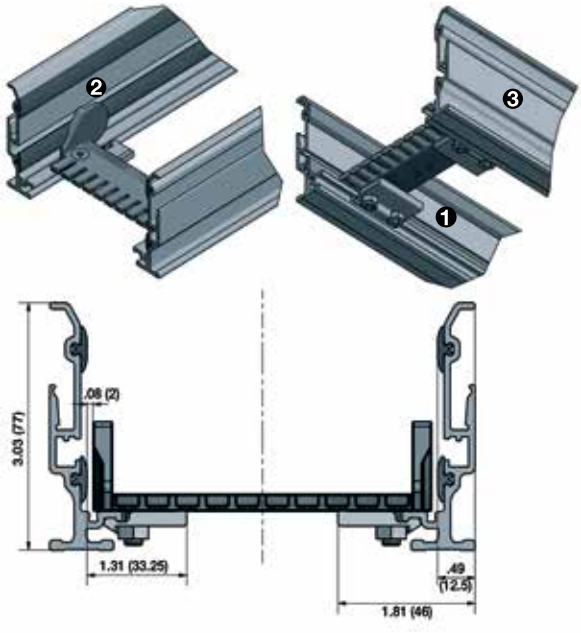
❷ Insert the threaded bushings

❸ Insert the threaded bushings



❹ Mounting on KMA mounting bracket

❺ Mounting on Aluminum SuperTrough




### Fixed end clamp to attach the E-Chain® into the smallest SuperTrough 970-30-SL

For mounting brackets from Series: 10, 15/R15, B15, 1500.
The fixed end clamp enables quick and simple attachment by clamping onto the Aluminum SuperTrough without drilling

- Quick attachment of the E-Chain® to the Aluminum SuperTrough
- The mounting point of the E-Chain® can be changed quickly
- Minimize errors from drilling your own holes
- Available for many E2, E4 and E6 Series E-Chains®
- Stainless and cost-effective

**Fixed end clamp design:**

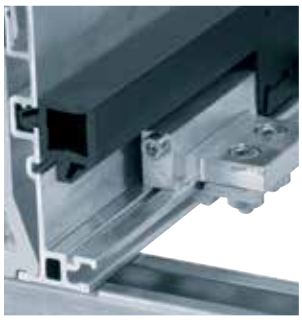
**❶ Fixed end clamp 970-80**
**❷ Mounting bracket**
**❸ Aluminum SuperTrough 970-30-SL**

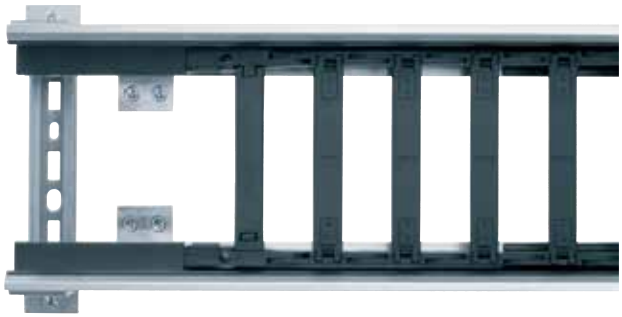
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Guide Trough Systems
# Aluminum SuperTrough
# Fixed End Module

| Part No. | For Aluminum SuperTrough | For E-Chain® Series | Application including inner width (*Bi*) | Mounting Bracket |
|---|---|---|---|---|
| **970-80**[1] | **970-30-SL \| 970-31-SL** | 10, B15, 15/R15 | .050 | one-piece |
| **970-80**[1] | **970-30-SL \| 970-32-SL** | 1500 | .050 | one-piece |
| **971-80-4**[1] | **971-30-SL \| 971-31-SL** | 2500, 255 | .07 | KMA |
| **972-80-4**[1] | **972-02-30-SL \| 972-02-31-SL** | E4-28/R4-28, E6-35 | .06 | KMA |
| **972-80-4**[1] | **972-30-SL \| 972-31-SL** | E4-32/H4-32/R4-32, E4-38L/R4-38L, E6-40/R6-40 | .06 | KMA |
| **972-80-4**[1] | **972-30-SL \| 972-32-SL** | 2700, R58 | .06 | KMA |
| **973-81-5**[1] | **973-30-SL \| 973-31-SL** | E4-42/H4-42/R4-42, E4-48L/R4-48L, E6-52/R6-52 | .10 | KMA |
| **973-80-5**[1] | **973-30-SL \| 973-31-SL** | 3500, R68 | .100 | KMA |
| **974-81-5**[1] | **974-30-SL \| 974-31-SL** | 14040/14140/R18840, 14240/14340 | .10 | KMA |
| **974-80-5**[1] | **974-30-SL \| 974-31-SL** | E4-56/H4-56/R4-56, E6-62 | .10 | KMA |
| **975-80**[2] | **975-30-SL \| 975-31-SL** | E4-80/H4-80/R4-80, E6-80 | .10 | KMA |
| **975-81**[2] | **975-30-SL \| 975-31-SL** | 15050/15150/R19850, 15250/15350 | .10 | KMA |

1) Material: plastic  2) Material: Aluminum AlMg3, seawater resistant
Material screw kits: Standard steel, galvanized. Optional stainless steel: V4A, material 1.4571 (AISI 316Ti)



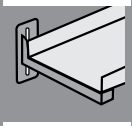


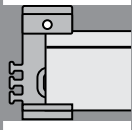
**Fixed-end module - Simple fastening of the E-Chain® without drilling**

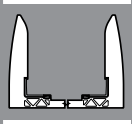
The igus® aluminum SuperTrough has been tested since 2005.
Test “Axis 1”: Speed 4.92 ft/s (1.5 m/s), Travel: 59 ft (18m), Mileage to date: approximately 31,069 miles (50,000 km)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









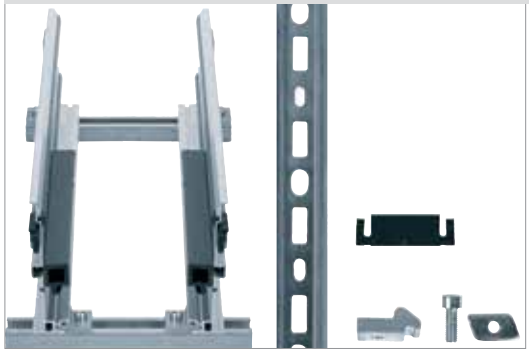
# Guide Trough Systems
# Aluminum SuperTrough



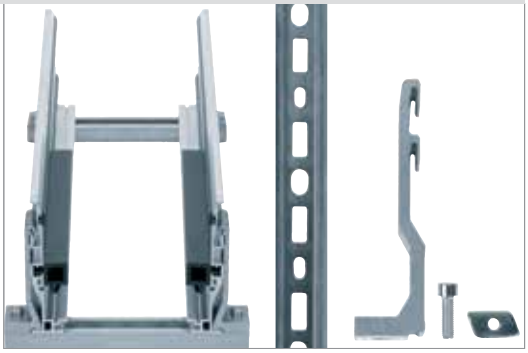
Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Installation Sets | Basic and Heavy Duty



Installation Set Basic

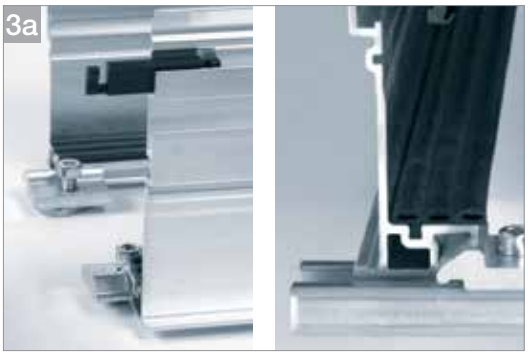


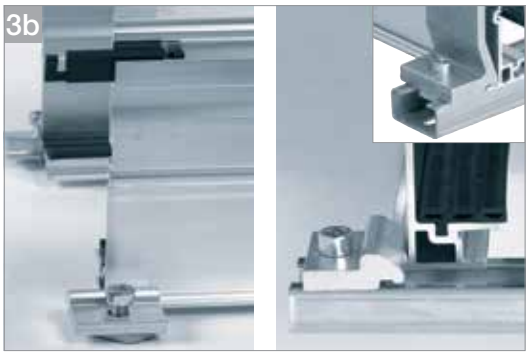
Installation Set Heavy Duty

## Installation Set | Basic (Standard)

❶ Pre-assemble clamp and screw

❷ Clip in polymer connector on both sides of the designated support




Fasten Basic assembly set inside ❸a or outside ❸b (Please check if the stability of the attachment is adequate). Please note: half the length of the assembly set and connector must protrude out of the trough. The glide nut should be well fastened in the profile rail

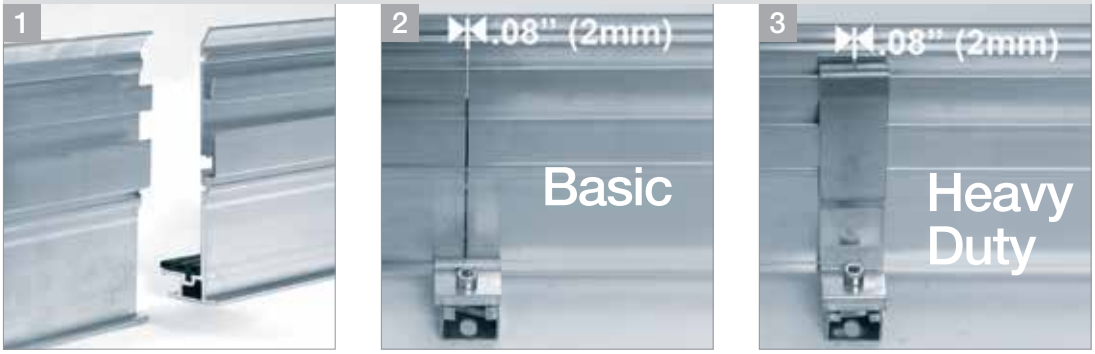
## Installation Set | Heavy Duty (Alternative)

❶ Pre-assemble heavy duty bracket and screw set ❷ Fasten Heavy Duty assembly set outside. Please note: half the length of the assembly set and connector must protrude out of the trough.

## Installing the silencer profile (optional)

Cut the rubber profile in accordance to the length of the trough, standard 6.56 ft. (2 m), and press it into the designated groove. (Pictured: although this shows the left hand side, the instructions are the same for the right hand side. To be repeated for each trough section.)

## Connecting the trough sections




❶ Join the sides of the trough side parts by pushing them together (min. +.08 (2mm) gap!)
❷ + ❸ The pre-assembled parts join each trough section

## Adjusting the tolerance and aligning trough sections

❶ Adjust the necessary minimum “chain/trough” tolerance of .08” (2mm) on both sides. Please note: the inner width $B_{Ri}$ of the trough decreases .08” (2mm) per side with the assembled glide strip (pictured)

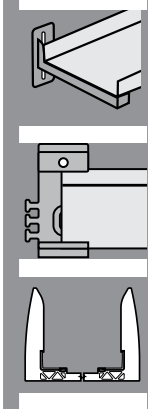
❷ Test to ensure the E-Chain® runs problem free and with low friction in the channel

❸ After adjusting the minimum tolerance and alignment of all trough sections, please tighten all trough connections. Pay attention to the correct installation direction of the sliding nut (see detail)
Starting torque of the assembly set’s fixing bolts: M6: 10 Nm / M8: 23 Nm.

**Please consider health & safety regulations while handling sheet metals.**
**We recommend using protective Category II gloves to protect against cuts when handling the aluminum profiles.**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS





# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 970-30-SL and 970-31-SL - Trough Height: 3.03 in. (77 mm)

## Aluminum SuperTrough — Basic Version

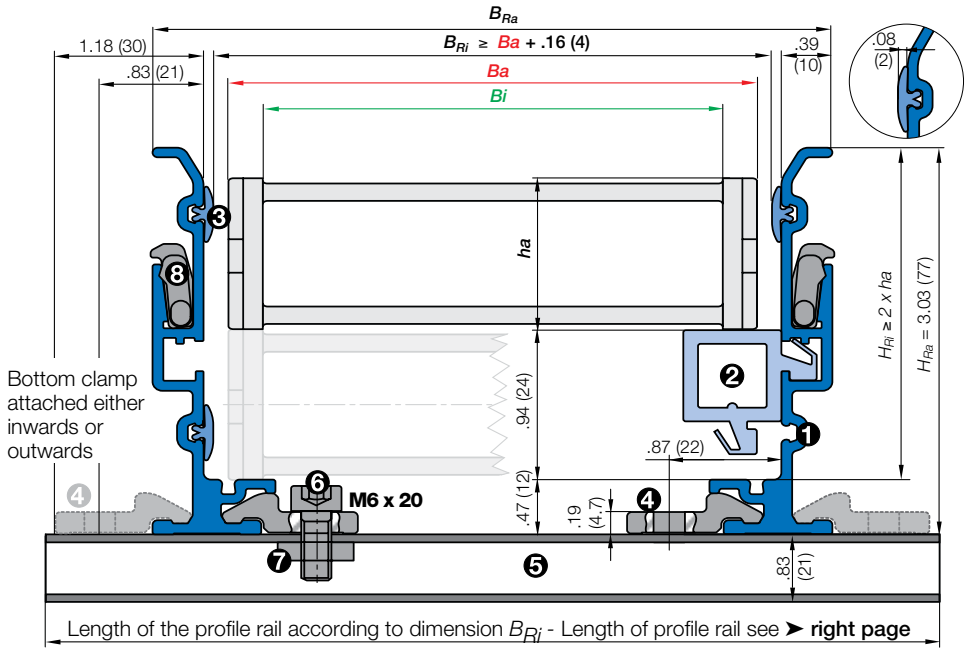
**For the following E-Chains®/ E-Tubes**

| System E2 Series |
|---|
| ● 10 |
| ● B15 |
| **Zipper Series** |
| ● 15/R15 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

**$H_{Ri} \geq 2 \bullet ha$**
**$B_{Ri} \geq Ba + 4$**

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail



● **Components, trough “Basic”:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

● **Components, installation set “Basic”:**

## Basic Version: Components

| Complete guide trough sets - description | Part No. | Weight (lbs) |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) sections | **970-30-SL** | 9.26 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) sections | **970-31-SL** | 10.8 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | .13 lbs |
| 1 Bottom clamp, individual | **75-40** | 0.07 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **81-79** | |
| 1 profile rail, individual | **92-52G____** | .60 lbs/ft |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-125** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

igus® E-Chain System®
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

### 10

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -015 | 1.18 (30) | * | **960-30-125** |
| -025 | 1.57 (40) | * | **960-30-150** |
| -038 | 2.09 (53) | * | **960-30-150** |
| -050 | 2.56 (65) | **960-30-125** | **960-30-175** |
| -5 | 3.15 (80) | **960-30-125** | **960-30-175** |
| -6 | 3.86 (98) | **960-30-150** | **960-30-200** |
| -7 | 4.61 (117) | **960-30-175** | **960-30-225** |

* upon request

### B15

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -015 | 1.18 (30) | * | **960-30-125** |
| -025 | 1.57 (40) | * | **960-30-150** |
| -038 | 2.09 (53) | * | **960-30-150** |
| -050 | 2.56 (65) | **960-30-125** | **960-30-175** |
| -5 | 3.15 (80) | **960-30-125** | **960-30-175** |
| -6 | 3.86 (98) | **960-30-150** | **960-30-200** |
| -7 | 4.61 (117) | **960-30-175** | **960-30-225** |

* upon request

### 15

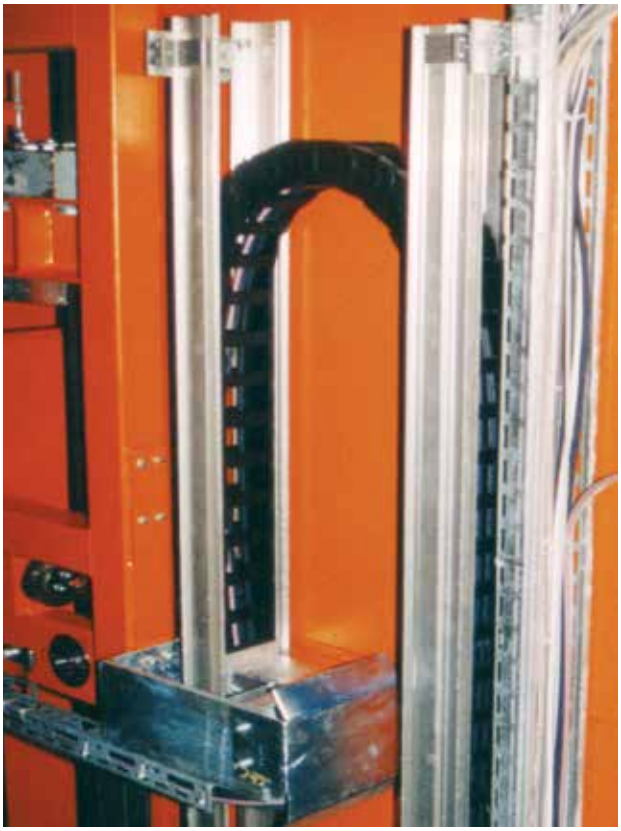
| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -015 | 1.18 (30) | * | **960-30-125** |
| -025 | 1.57 (40) | * | **960-30-150** |
| -038 | 2.09 (53) | * | **960-30-150** |
| -050 | 2.56 (65) | **960-30-125** | **960-30-175** |
| -5 | 3.15 (80) | **960-30-125** | **960-30-175** |
| -6 | 3.86 (98) | **960-30-150** | **960-30-200** |
| -7 | 4.61 (117) | **960-30-175** | **960-30-225** |

* upon request

### R15

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -025 | 1.57 (40) | * | **960-30-150** |
| -038 | 2.09 (53) | * | **960-30-150** |
| -063 | 3.15 (80) | * | **960-30-175** |
| -080 | 3.86 (98) | **960-30-150** | **960-30-200** |

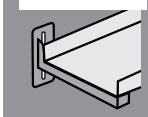
* upon request

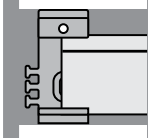


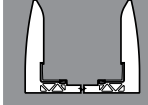
E-Chain® on the tower of the storage and retrieval unit for high-bay warehouses rolls off from one aluminum guide trough to the opposite one











# Guide Trough Systems
# Aluminum SuperTrough

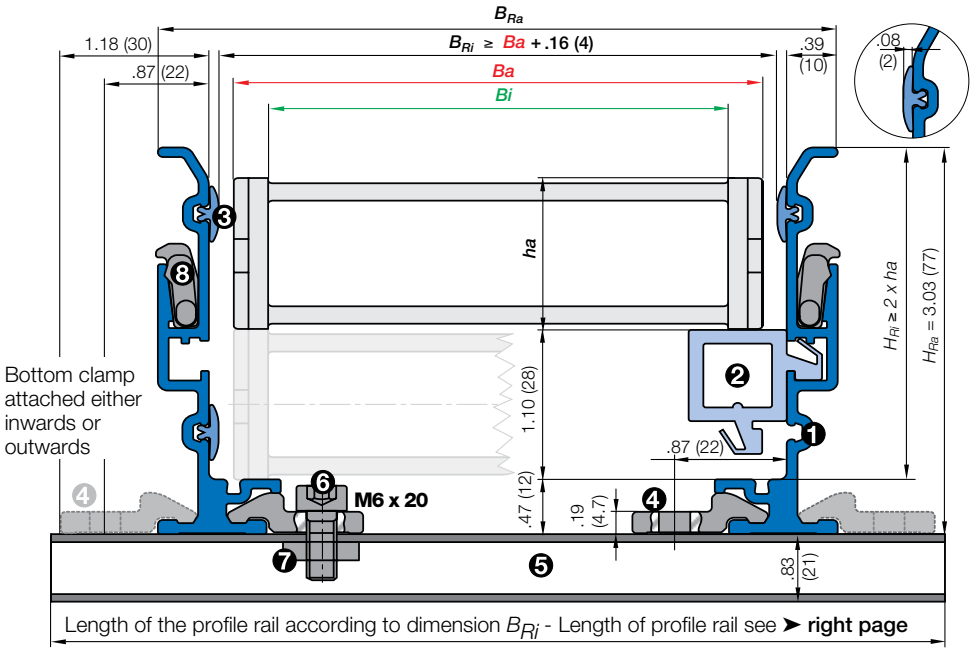
## Part No. 970-30-SL and 970-32-SL - Trough Height: 3.03 in. (77 mm)

## Aluminum SuperTrough — Basic Version

**For the following E-Chains®/ E-Tubes**

| |
|---|
| **System E2 Series** |
| ● 1400/1450/1480/1500 |
| **System E4-1 Series** |
| ● E4-21 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |
| ! | | $H_{Ri} \geq 2 \bullet ha$<br>$B_{Ri} \geq Ba + 4$ |
| ● | = | Guide trough |
| ● | = | Glide bar |
| ● | = | Installation set “Basic” |
| ● | = | profile rail |




● **Components, trough “Basic”:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

## Basic Version: Components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft (2 m) section | **970-30-SL** | 9.26 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **970-32-SL** | 11.02 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | .13 lbs |
| 1 Bottom clamp, individual | **75-40** | 0.07 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **82-79** | |
| 1 profile rail, individual | **92-52G____** | .60 lbs/ft |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-125** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

igus® E-Chain System®
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Lengths of profile rail - Basic Version - Bottom Clamp attached either **inwards** or **outwards**

### 1400/1500

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -015 | 1.30 (33) | * | **960-30-125** |
| -020 | 1.50 (38) | * | **960-30-125** |
| -025 | 1.69 (43) | * | **960-30-150** |
| -038 | 2.20 (56) | * | **960-30-150** |
| -050 | 2.68 (68) | **960-30-125** | **960-30-175** |
| -068 | 3.39 (86) | **960-30-150** | **960-30-175** |
| -080 | 3.86 (98) | **960-30-150** | **960-30-200** |
| -100 | 4.65 (118) | **960-30-175** | **960-30-225** |
| -125 | 5.63 (143) | **960-30-200** | **960-30-250** |

* upon request

### E4-21

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -030 | 1.89 (48) | * | **960-30-150** |
| -040 | 2.28 (58) | **960-30-125** | **960-30-150** |
| -050 | 2.68 (68) | **960-30-125** | **960-30-175** |
| -060 | 3.07 (78) | **960-30-125** | **960-30-175** |
| -070 | 3.46 (88) | **960-30-150** | **960-30-175** |
| -080 | 3.86 (98) | **960-30-150** | **960-30-200** |
| -100 | 4.65 (118) | **960-30-175** | **960-30-225** |
| -120 | 5.43 (138) | **960-30-200** | **960-30-225** |

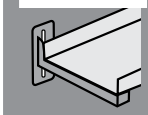
* upon request

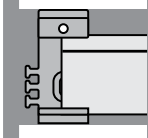
Seawater resistant aluminum SuperTrough in a RTG-crane. Long travel with the E4/4 E-Chain System®.

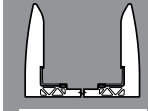
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







# Guide Trough Systems
# Aluminum SuperTrough

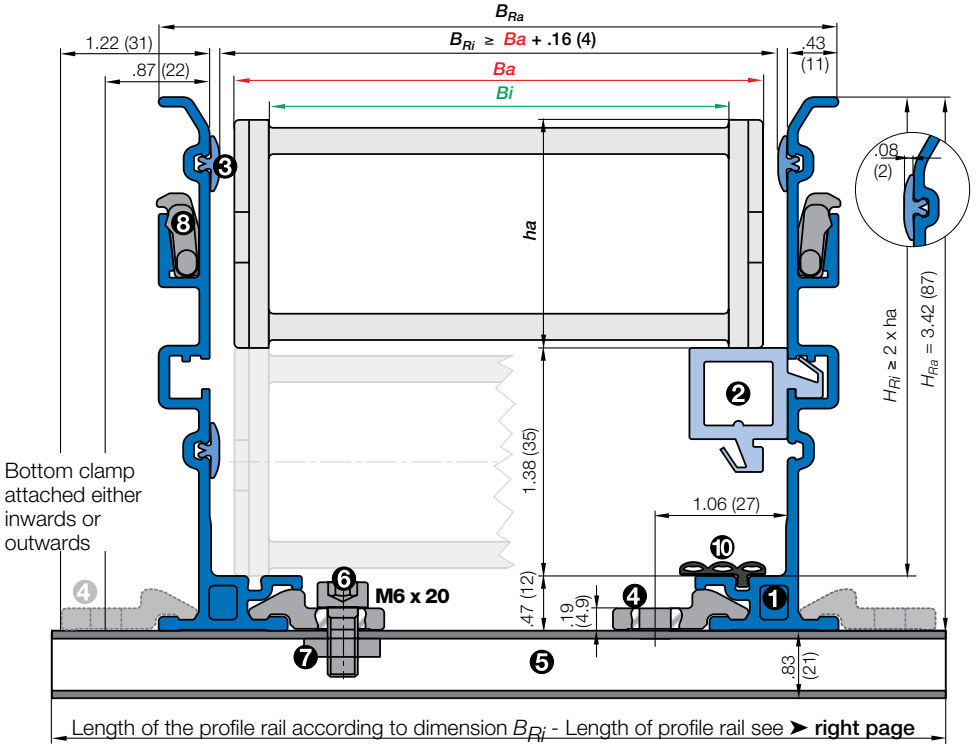
## Part No. 971-30-SL and 971-31-SL - Trough Height: 3.42 in. (87 mm)

## Aluminum SuperTrough — Basic Version

**For the following Series**

| |
|---|
| **System E2 Series:** |
| ● 2480 |
| ● 200/240/250 |
| **System E2 Tube Series:** |
| ● R48 |
| **System E6 Series:** |
| ● E6-29/R6-29 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |
| ! | | $H_{Ri} \geq 2 \bullet ha$<br>$B_{Ri} \geq Ba + 4$ |
| ● | = | Guide trough |
| ● | = | Glide bar |
| ● | = | Installation set “Basic” |
| ● | = | profile rail |




● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

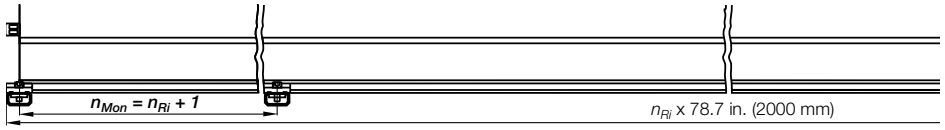
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **971-30-SL** | ≈11.02 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **971-31-SL** | ≈ 14.11 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | ≈ .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75-40** | ≈ .07 lkbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bar, 6.56 ft. (2m) sections | **82-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft |
| Silencer profile | **75-76-H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

### Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough

## Lengths of profile rail - Basic Version

## Bottom Clamp can be attached either **inwards** or **outwards**

### 240/250/2400/2500

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -02 | 1.77 (45) | * | 960-30-150 |
| -03 | 2.28 (58) | * | 960-30-150 |
| -05 | 3.03 (77) | 960-30-125 | 960-30-175 |
| -07 | 3.82 (97) | 960-30-150 | 960-30-200 |
| -09 | 4.29 (109) | 960-30-175 | 960-30-225 |
| -10 | 4.84 (123) | 960-30-175 | 960-30-225 |
| -12 | 5.71 (145) | 960-30-200 | 960-30-250 |

* upon request

### 255

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -03 | 2.28 (58) | * | 960-30-150 |
| -05 | 3.03 (77) | 960-30-125 | 960-30-175 |
| -07 | 3.82 (97) | 960-30-150 | 960-30-200 |
| -10 | 4.84 (123) | 960-30-175 | 960-30-225 |

* upon request

### R48

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -025 | 1.57 (40) | * | 960-30-150 |
| -050 | 2.56 (65) | * | 960-30-175 |
| -075 | 3.54 (90) | 960-30-150 | 960-30-200 |
| -100 | 4.53 (115) | 960-30-175 | 960-30-225 |
| -130 | 5.71 (145) | 960-30-200 | 960-30-250 |

* upon request

For the “Heavy Duty” installation set:
Insert Part No. **971-50-____**
instead of **960-30-____**
on the right column “attached outwards”

### E6-29

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -030 | 1.97 (50) | * | 960-30-150 |
| -040 | 2.36 (60) | * | 960-30-175 |
| -050 | 2.76 (70) | * | 960-30-175 |
| -060 | 3.15 (80) | 960-30-150 | 960-30-175 |
| -070 | 3.54 (90) | 960-30-150 | 960-30-200 |
| -080 | 3.94 (100) | 960-30-150 | 960-30-200 |
| -090 | 4.33 (110) | 960-30-175 | 960-30-225 |
| -100 | 4.72 (120) | 960-30-175 | 960-30-225 |
| -110 | 5.12 (130) | 960-30-200 | 960-30-225 |
| -120 | 5.51 (140) | 960-30-200 | 960-30-250 |

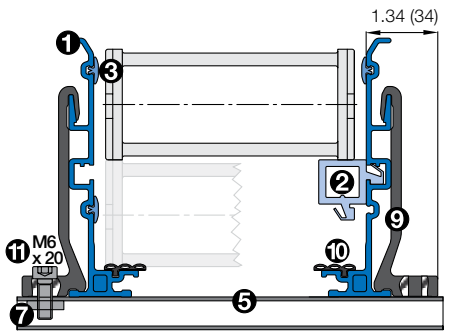
* upon request

### R6-29

| E-Chain® | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -030 | 1.97 (50) | * | 960-30-150 |
| -050 | 2.76 (70) | * | 960-30-175 |
| -060 | 3.15 (80) | 960-30-150 | 960-30-175 |
| -080 | 3.94 (100) | 960-30-150 | 960-30-200 |
| -100 | 4.72 (120) | 960-30-175 | 960-30-225 |
| -110 | 5.12 (130) | 960-30-200 | 960-30-225 |
| -120 | 5.51 (140) | 960-30-200 | 960-30-250 |

* upon request

# Heavy Duty Version - Installation Set Part No. 971-50




- **Components, trough “Heavy Duty”:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
  - ❺ profile rail, steel galvanized
  - ❼ Sliding nut M6
  - ❾ Heavy duty bracket, aluminum
  - ⓫ Screw M6 x 20

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Aluminum SuperTrough

**Part No. 972-02-30-SL and 972-02-31-SL**
**Trough Height: 4.61 in. (117 mm)**
Aluminum SuperTrough — Basic Version

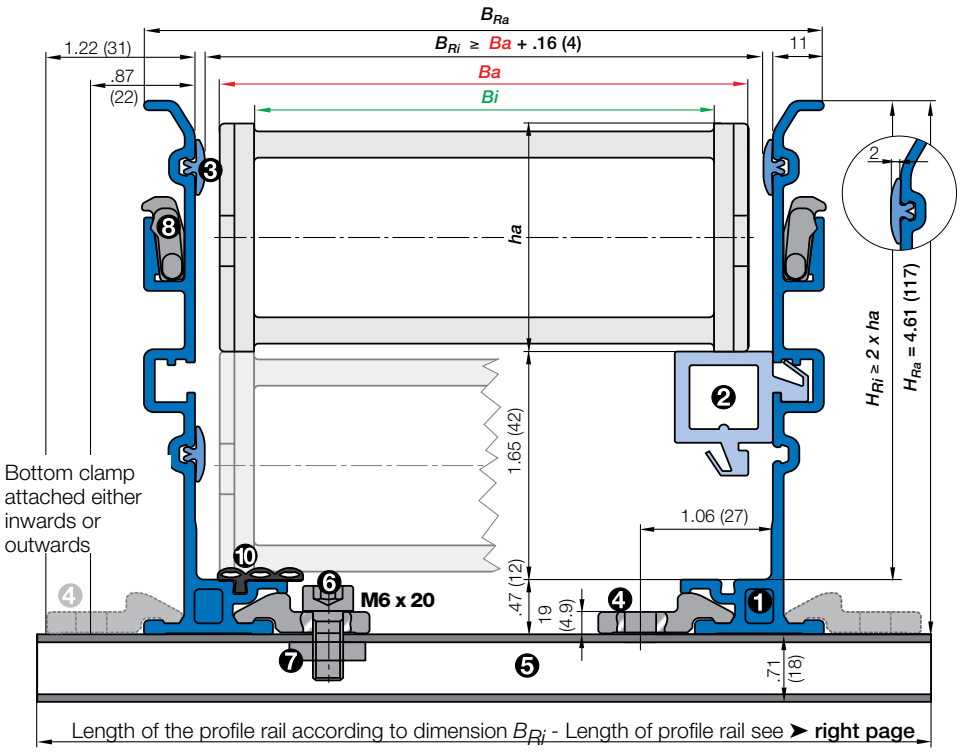
**For the following Series**

| |
|---|
| **System E4-1 Series** |
| ● E4-28/R4-28 |
| **System E4 Series:** |
| ● 220/R760 |
| **System E6 Series:** |
| ● E6-35 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail




● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

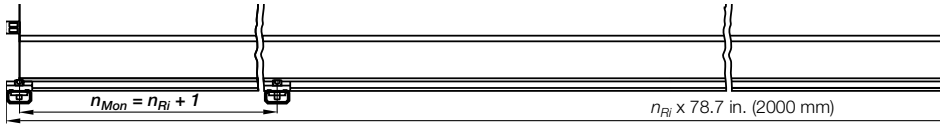
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **972-02-30-SL** | ≈ 13.23 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **972-02-31-SL** | ≈ 16.31 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | ≈ .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75.40** | ≈ .07 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **82-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-67H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-175** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

## Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough

## Lengths of profile rail - Basic Version
## Bottom Clamp can be attached either **inwards** or **outwards**

### E4-28/R4-28

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -040 | 2.52 (64) | * | **960-30-175** |
| -050 | 2.91 (74) | **960-30-125** | **960-30-175** |
| -062 | 3.39 (86) | **960-30-150** | **960-30-200** |
| -070 | 3.31 (94) | **960-30-150** | **960-30-200** |
| -075 | 3.90 (99) | **960-30-175** | **960-30-225** |
| -087 | 4.37 (111) | **960-30-175** | **960-30-225** |
| -100 | 4.88 (124) | **960-30-200** | **960-30-250** |
| -125 | 5.87 (149) | **960-30-200** | **960-30-250** |
| -150 | 6.85 (174) | **960-30-200** | **960-30-250** |
| -175 | 7.83 (199) | **960-30-225** | **960-30-275** |
| -200 | 8.82 (224) | **960-30-225** | **960-30-275** |
| -225 | 9.80 (249) | **960-30-250** | **960-30-300** |
| -250 | 10.78 (274) | **960-30-250** | **960-30-300** |
| -275 | 11.77 (299) | **960-30-250** | **960-30-300** |
| -300 | 12.76 (324) | **960-30-275** | **960-30-325** |

### 220/R760

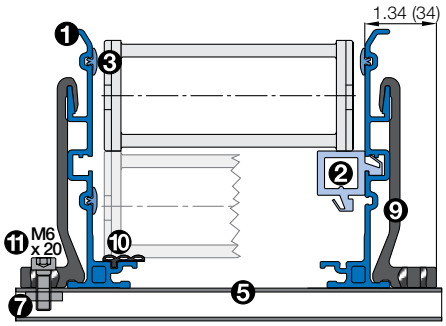
| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -040 | 2.52 (64) | * | **960-30-175** |
| -050 | 2.91 (74) | **960-30-125** | **960-30-175** |
| -062 | 3.39 (86) | **960-30-150** | **960-30-200** |
| -070 | 3.31 (94) | **960-30-150** | **960-30-200** |
| -075 | 3.90 (99) | **960-30-175** | **960-30-225** |
| -087 | 4.37 (111) | **960-30-175** | **960-30-225** |
| -100 | 4.88 (124) | **960-30-200** | **960-30-250** |
| -125 | 5.87 (149) | **960-30-200** | **960-30-250** |
| -150 | 6.85 (174) | **960-30-200** | **960-30-250** |
| -175 | 7.83 (199) | **960-30-225** | **960-30-275** |
| -200 | 8.82 (224) | **960-30-225** | **960-30-275** |
| -225 | 9.80 (249) | **960-30-250** | **960-30-300** |
| -250 | 10.78 (274) | **960-30-250** | **960-30-300** |
| -275 | 11.77 (299) | **960-30-250** | **960-30-300** |
| -300 | 12.76 (324) | **960-30-275** | **960-30-325** |

### E6-35

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -030 | 2.13 (54) | * | **960-30-150** |
| -040 | 2.52 (64) | * | **960-30-175** |
| -050 | 2.91 (74) | **960-30-125** | **960-30-175** |
| -060 | 3.31 (84) | **960-30-150** | **960-30-200** |
| -070 | 3.70 (94) | **960-30-150** | **960-30-200** |
| -080 | 4.09 (104) | **960-30-150** | **960-30-200** |
| -090 | 4.49 (114) | **960-30-175** | **960-30-225** |
| -100 | 4.88 (124) | **960-30-175** | **960-30-225** |
| -110 | 5.28 (134) | **960-30-200** | **960-30-250** |
| -120 | 5.67 (144) | **960-30-200** | **960-30-250** |

- For the “Heavy Duty” installation set: Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

# Heavy Duty Version - Installation Set Part No. 972-50




- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut M6
❾ Heavy duty bracket, aluminum
⓫ Screw M6 x 20

● = Guide trough
● = Glide bar
● = Installation set “Heavy duty”
● = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 972-30-SL and 972-31-SL Trough Height: 4.61 in. (117 mm)

## Aluminum SuperTrough — Basic Version

**For the following Series**

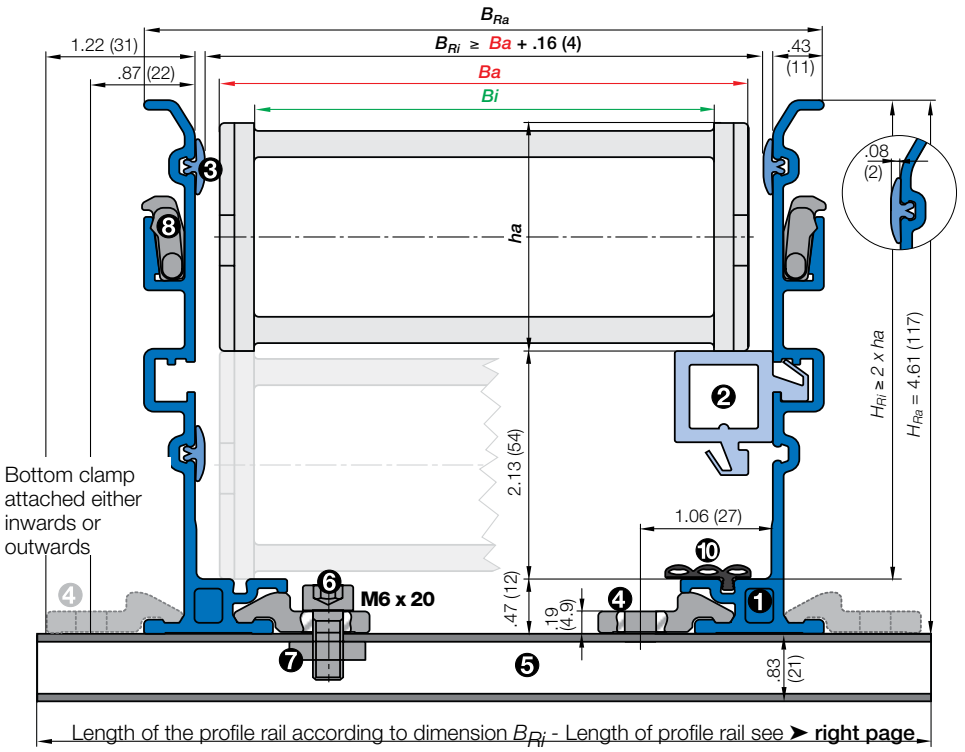
| |
|---|
| **System E4 Series:** |
| ● 280/290/R770 |
| ● 2828/2928/R7728 |
| **System E6 Series:** |
| ● E6-40/R6-40 |
| **System E4-1 Series** |
| ● E4-32/H4-32/R4-32 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail




● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

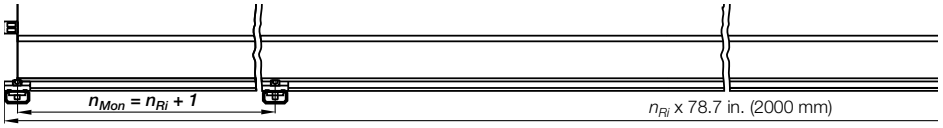
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **972-30-SL** | ≈ 13.23 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **972-31-SL** | ≈ 16.31 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | ≈ .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75.40** | ≈ .07 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **82-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-67H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

## Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough

## Lengths of profile rail - Basic Version
## Bottom Clamp can be attached either **inwards** or **outwards**

### 280/290/R770
### E4-32/H4-32/R4-32

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.03 (77) | 960-30-125 | 960-30-175 |
| -06 | 3.74 (95) | 960-30-150 | 960-30-200 |
| -07 | 4.02 (102) | 960-30-150 | 960-30-200 |
| -087 | 4.49 (114) | 960-30-175 | 960-30-225 |
| -10 | 5.00 (127) | 960-30-175 | 960-30-225 |
| -11 | 5.31 (135) | 960-30-200 | 960-30-250 |
| -112 | 5.51 (140) | 960-30-200 | 960-30-250 |
| -12 | 5.98 (152) | 960-30-200 | 960-30-250 |
| -137 | 6.50 (165) | 960-30-225 | 960-30-275 |
| -15 | 6.97 (177) | 960-30-225 | 960-30-275 |
| -162 | 7.48 (190) | 960-30-250 | 960-30-300 |
| -17 | 7.68 (195) | 960-30-250 | 960-30-300 |
| -18 | 7.95 (202) | 960-30-250 | 960-30-300 |
| -187 | 8.46 (215) | 960-30-275 | 960-30-325 |
| -20 | 8.94 (227) | 960-30-275 | 960-30-325 |
| -212 | 9.45 (240) | 960-30-300 | 960-30-350 |
| -23 | 9.92 (252) | 960-30-300 | 960-30-350 |
| -237 | 10.43 (265) | 960-30-325 | 960-30-375 |
| -25 | 10.91 (277) | 960-30-325 | 960-30-375 |
| -262 | 11.42 (290) | 960-30-350 | 960-30-400 |
| -28 | 11.89 (302) | 960-30-350 | 960-30-400 |
| -29 | 12.40 (315) | 960-30-375 | 960-30-425 |
| -30 | 12.87 (327) | 960-30-375 | 960-30-425 |
| -312 | 13.39 (340) | 960-30-400 | 960-30-450 |
| -325 | 13.86 (352) | 960-30-400 | 960-30-450 |
| -337 | 14.37 (365) | 960-30-425 | 960-30-475 |
| -350 | 14.84 (377) | 960-30-425 | 960-30-475 |
| -362 | 15.35 (390) | 960-30-450 | 960-30-500 |
| -375 | 15.83 (402) | 960-30-450 | 960-30-500 |
| -387 | 16.34 (415) | 960-30-475 | 960-30-525 |
| -400 | 16.81 (427) | 960-30-475 | 960-30-525 |

### 2828/2928/R7728

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.07 (78) | 960-30-125 | 960-30-175 |
| -06 | 3.78 (96) | 960-30-150 | 960-30-200 |
| -07 | 4.06 (103) | 960-30-150 | 960-30-200 |
| -087 | 4.53 (115) | 960-30-175 | 960-30-225 |
| -10 | 5.04 (128) | 960-30-175 | 960-30-225 |
| -11 | 5.35 (136) | 960-30-200 | 960-30-225 |
| -112 | 5.55 (141) | 960-30-200 | 960-30-250 |
| -12 | 6.02 (153) | 960-30-200 | 960-30-250 |
| -137 | 6.54 (166) | 960-30-225 | 960-30-275 |
| -15 | 7.01 (178) | 960-30-225 | 960-30-275 |
| -162 | 7.52 (191) | 960-30-250 | 960-30-300 |
| -17 | 7.72 (196) | 960-30-250 | 960-30-300 |
| -18 | 7.99 (203) | 960-30-250 | 960-30-300 |
| -187 | 8.50 (216) | 960-30-275 | 960-30-325 |
| -20 | 8.98 (228) | 960-30-275 | 960-30-325 |
| -212 | 9.49 (241) | 960-30-300 | 960-30-350 |
| -23 | 9.96 (253) | 960-30-300 | 960-30-350 |
| -237 | 10.47 (266) | 960-30-325 | 960-30-375 |
| -25 | 10.94 (278) | 960-30-325 | 960-30-375 |
| -262 | 11.46 (291) | 960-30-350 | 960-30-400 |
| -28 | 11.93 (303) | 960-30-350 | 960-30-400 |
| -29 | 12.44 (316) | 960-30-375 | 960-30-425 |
| -30 | 12.91 (328) | 960-30-375 | 960-30-425 |
| -312 | 13.43 (341) | 960-30-400 | 960-30-450 |
| -325 | 13.90 (353) | 960-30-400 | 960-30-450 |
| -337 | 14.41 (366) | 960-30-425 | 960-30-475 |
| -350 | 14.88 (378) | 960-30-425 | 960-30-475 |
| -362 | 15.39 (391) | 960-30-450 | 960-30-500 |
| -375 | 15.87 (403) | 960-30-450 | 960-30-500 |
| -387 | 16.38 (416) | 960-30-475 | 960-30-525 |
| -400 | 16.85 (428) | 960-30-475 | 960-30-525 |

- For the “Heavy Duty” installation set: Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

### E6-40/R6-40

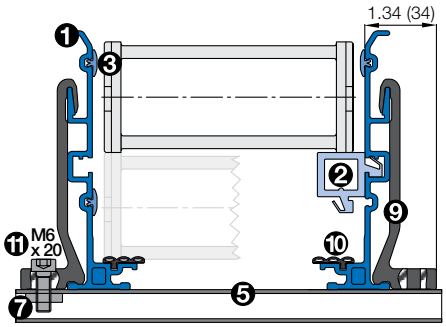
| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -040 | 2.52 (64) | * | 960-30-175 |
| -050 | 2.91 (74) | 960-30-125 | 960-30-175 |
| -062 | 3.39 (86) | 960-30-150 | 960-30-200 |
| -070 | 3.70 (94) | 960-30-150 | 960-30-200 |
| -075 | 3.90 (99) | 960-30-150 | 960-30-200 |
| -087 | 4.37 (111) | 960-30-175 | 960-30-225 |
| -100 | 4.88 (124) | 960-30-175 | 960-30-225 |
| -125 | 5.87 (149) | 960-30-200 | 960-30-250 |
| -150 | 6.85 (174) | 960-30-225 | 960-30-275 |
| -175 | 7.83 (199) | 960-30-250 | 960-30-300 |
| -200 | 8.82 (224) | 960-30-275 | 960-30-325 |
| -225 | 9.80 (249) | 960-30-300 | 960-30-350 |
| -250 | 10.78 (274) | 960-30-325 | 960-30-375 |
| -275 | 11.77 (299) | 960-30-350 | 960-30-400 |
| -300 | 12.76 (324) | 960-30-375 | 960-30-425 |

### E4-38L/R4-38L

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -050 | 2.76 (70) | * | 960-30-200 |
| -062 | 3.23 (82) | * | 960-30-200 |
| -075 | 3.74 (95) | * | 960-30-225 |
| -087 | 4.21 (107) | * | 960-30-225 |
| -100 | 4.72 (120) | 960-30-175 | 960-30-250 |
| -112 | 5.20 (132) | 960-30-200 | 960-30-250 |
| -125 | 5.71 (145) | 960-30-200 | 960-30-275 |
| -137 | 6.18 (157) | 960-30-225 | 960-30-275 |
| -150 | 6.69 (170) | 960-30-225 | 960-30-300 |
| -162 | 7.17 (182) | 960-30-250 | 960-30-300 |
| -175 | 7.68 (195) | 960-30-250 | 960-30-325 |
| -200 | 8.66 (220) | 960-30-275 | 960-30-350 |
| -250 | 10.63 (270) | 960-30-325 | 960-30-400 |

*upon request

# Heavy Duty Version - Installation Set Part No. 972-50




- **Components, trough “Heavy Duty”:**
  - ❶ Trough side parts, aluminum, 6.56 ft. (2m)
  - ❷ Glide bar, plastic, 6.56 ft. (2m)
  - ❸ Glide strips, plastic 6.56 ft. (2m) (without glide strips on request)
  - ❿ Optional: Silencer profile, rubber
- **Components, installation set “Heavy Duty”:**
  - ❺ profile rail, steel galvanized
  - ❼ Sliding nut M6
  - ❾ Heavy duty bracket, aluminum
  - ⓫ Screw M6 x 20

**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 972-30-SL and 972-32-SL Trough Height: 4.61 in. (117 mm)

## Aluminum SuperTrough — Basic Version

**For the following Series**

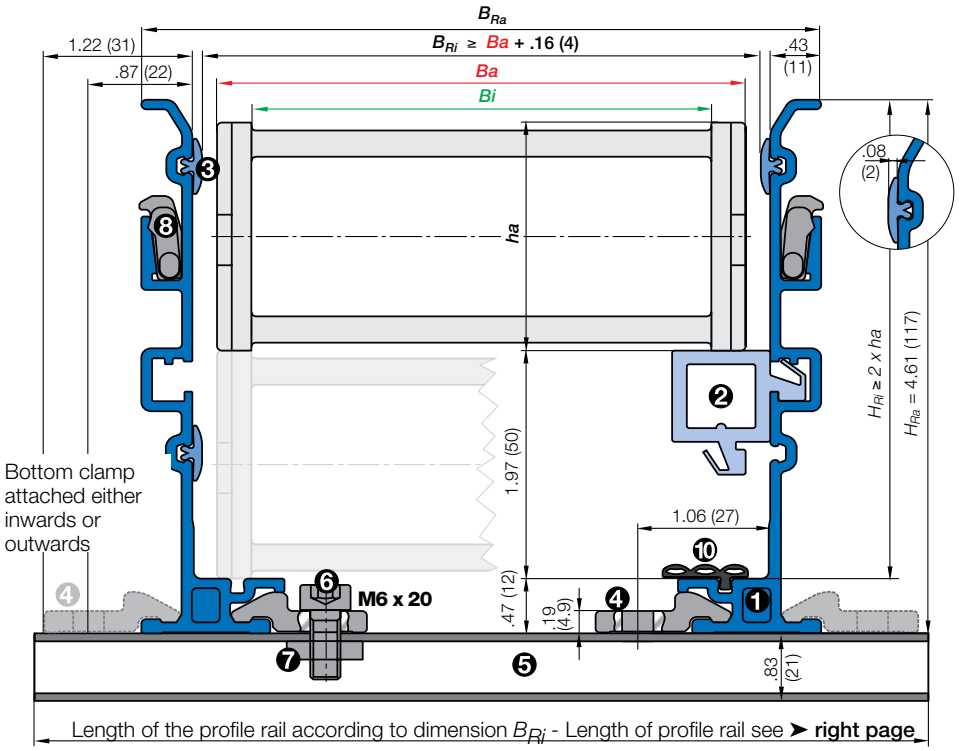
| |
|---|
| **System E2 Series:** |
| ● 2680 |
| ● 26/27i/27 |
| **System E2 Tube Series:** |
| ● R58 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail




● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

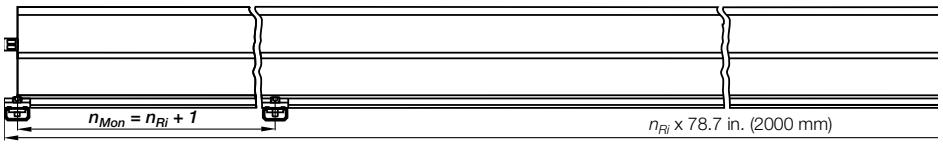
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw M6 x20
❼ Sliding nut M6
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **972-30-SL** | ≈ 13.23 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **972-32-SL** | ≈ 16.31lbs |
| 1 Installation set **“Basic”** without profile rail | **960-30** | ≈ .13 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-30-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75-40** | ≈ .07 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw M6 x 20, individual | **M6X20SOCKETCAP** | |
| 1 Sliding nut M6, individual | **ZBNUT-LG** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **82-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-67H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

## Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough

## Lengths of profile rail - Basic Version

## Bottom Clamp can be attached either **inwards** or **outwards**

### 2600/2700

2680-**05**-200-0

| | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 2.76 (70) | * | **960-30-175** |
| -06 | 3.35 (85) | **960-30-150** | **960-30-200** |
| -07 | 3.74 (95) | **960-30-150** | **960-30-200** |
| -09 | 4.33 (110) | **960-30-175** | **960-30-225** |
| -10 | 4.72 (120) | **960-30-175** | **960-30-225** |
| -12 | 5.71 (145) | **960-30-200** | **960-30-250** |
| -15 | 6.69 (170) | **960-30-225** | **960-30-275** |
| -17 | 7.79 (198) | **960-30-250** | **960-30-300** |

### R58

58-**075**-200-0

| | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -050 | 2.76 (70) | * | **960-30-175** |
| -075 | 3.74 (95) | **960-30-150** | **960-30-200** |
| -100 | 4.72 (120) | **960-30-175** | **960-30-225** |
| -125 | 5.71 (145) | **960-30-200** | **960-30-250** |
| -150 | 6.69 (170) | **960-30-225** | **960-30-275** |
| -175 | 7.58 (195) | **960-30-250** | **960-30-300** |
| -200 | 8.66 (220) | **960-30-275** | **960-30-325** |

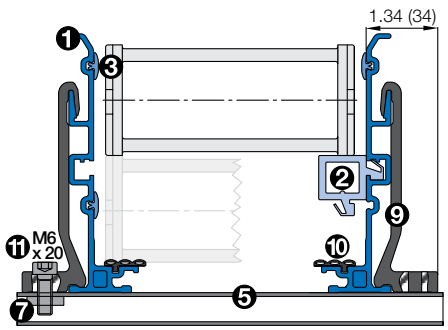
### 26/27i/27

26-**05**-200-0

| | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 2.76 (70) | **960-30-125** | **960-30-175** |
| -07 | 3.74 (95) | **960-30-150** | **960-30-200** |
| -10 | 4.72 (120) | **960-30-175** | **960-30-225** |
| -12 | 5.71 (145) | **960-30-200** | **960-30-250** |
| -15 | 6.69 (170) | **960-30-225** | **960-30-275** |
| -17 | 7.79 (198) | **960-30-250** | **960-30-300** |
| -20 | 8.78 (223) | **960-30-275** | **960-30-325** |

**Stable guidance without oscillation. Because of the compact design of the aluminum SuperTrough the need for space along the travel path is small.**
**Travel 105 ft. (32 m) Crane operating speed 262 ft./min. (80 m/min).**

# Heavy Duty Version - Installation Set Part No. 972-50




For the “Heavy Duty” installation set:
Insert Part No. **972-50-____** instead of **960-30-____** on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
⑩ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut M6
❾ Heavy duty bracket, aluminum
⑪ Screw M6 x 20

**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 973-30-SL and 973-31-SL Trough Height: 5.67 in. (144 mm)

## Aluminum SuperTrough — Basic Version

For the following Series

**System E2 Series:**
- 3480
- 340/350

**System E2 Tube Series:**
- R68

**System E4 Series:**
- 380/390/R780
- 3838/3938/R7838

**System E6 Series:**
- E6-52/R6-52

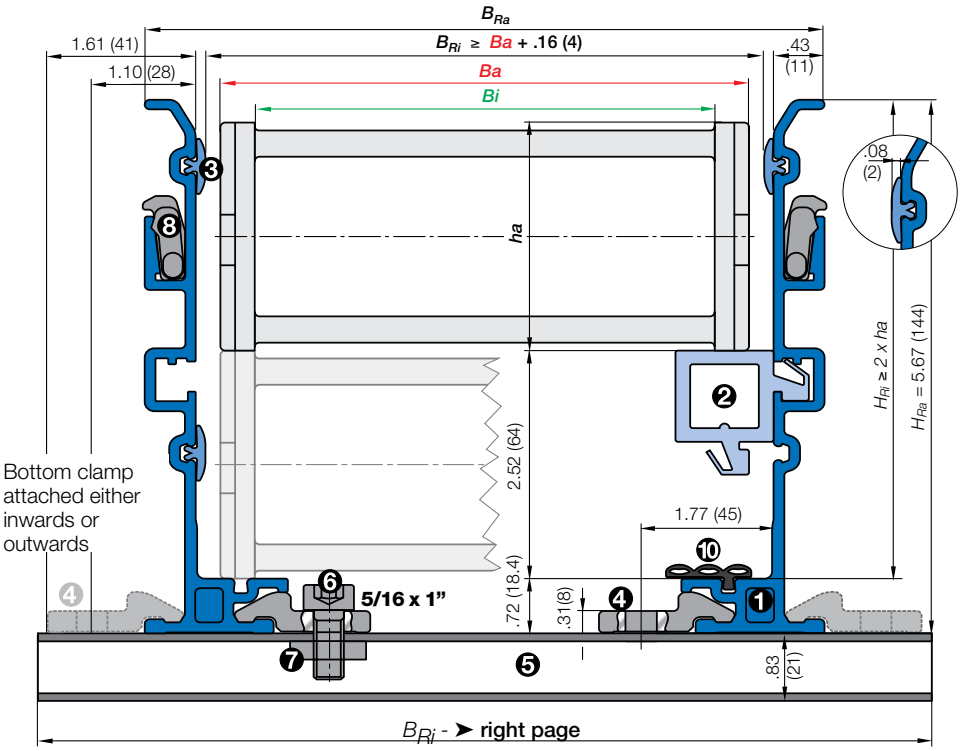
**System E4-1 Series**
- E4-42/H4-42/R4-42

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$

$B_{Ri} \geq Ba + 4$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail




● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw 5/16 x 1”
❼ Sliding nut 5/16
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **973-30-SL** | ≈ 17.64 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **973-31-SL** | ≈ 23.81 lbs |
| 1 Installation set **“Basic”** without profile rail | **960-40** | ≈ .18 lbs |
| 1 Installation set **“Basic”** with profile rail | **960-40-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈.13 lbs |
| 1 Bottom clamp, individual | **75.50** | ≈ .09 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw 5/16 x 1”, individual | **82-55** | |
| 1 Sliding nut 5/16, individual | **82-56** | |
| 2 Glide bars, 6.56 ft. (2m) sections | **83-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-68H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

### Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough

## Lengths of profile rail - Basic Version
## Bottom Clamp can be attached either **inwards** or **outwards**

### 340/350/3400/3500

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -050 | 2.91 (74) | * | 960-40-200 |
| -075 | 3.90 (99) | * | 960-40-225 |
| -100 | 4.88 (124) | 960-40-175 | 960-40-250 |
| -115 | 5.47 (139) | 960-40-200 | 960-40-275 |
| -125 | 5.87 (149) | 960-40-200 | 960-40-275 |
| -150 | 6.85 (174) | 960-40-225 | 960-40-300 |
| -175 | 7.83 (199) | 960-40-250 | 960-40-325 |
| -200 | 8.82 (224) | 960-40-275 | 960-40-350 |
| -225 | 9.80 (249) | 960-40-300 | 960-40-375 |
| -250 | 10.79 (274) | 960-40-325 | 960-40-400 |

### R68

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -050 | 2.83 (72) | * | 960-40-200 |
| -075 | 3.82 (97) | * | 960-40-225 |
| -100 | 4.80 (122) | 960-40-175 | 960-40-250 |
| -115 | 5.39 (137) | 960-40-200 | 960-40-275 |
| -125 | 5.79 (147) | 960-40-200 | 960-40-275 |
| -150 | 6.77 (172) | 960-40-225 | 960-40-300 |
| -175 | 7.76 (197) | 960-40-250 | 960-40-325 |
| -200 | 8.74 (222) | 960-40-275 | 960-40-350 |
| -225 | 9.72 (247) | 960-40-300 | 960-40-375 |
| -250 | 10.71 (272) | 960-40-325 | 960-40-400 |

### 380/390/R780 E4-42/H4-42/R4-42

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.15 (80) | * | 960-40-200 |
| -06 | 3.86 (98) | * | 960-40-225 |
| -07 | 4.13 (105) | * | 960-40-225 |
| -087 | 4.65 (118) | 960-40-175 | 960-40-250 |
| -10 | 5.12 (130) | 960-40-200 | 960-40-250 |
| -11 | 5.43 (138) | 960-40-200 | 960-40-275 |
| -112 | 5.63 (143) | 960-40-200 | 960-40-275 |
| -12 | 6.10 (155) | 960-40-225 | 960-40-275 |
| -137 | 6.61 (168) | 960-40-225 | 960-40-300 |
| -15 | 7.09 (180) | 960-40-250 | 960-40-300 |
| -162 | 7.60 (193) | 960-40-250 | 960-40-325 |
| -17 | 7.80 (198) | 960-40-250 | 960-40-325 |
| -18 | 8.07 (205) | 960-40-275 | 960-40-325 |
| -187 | 8.58 (218) | 960-40-275 | 960-40-350 |
| -20 | 9.06 (230) | 960-40-300 | 960-40-350 |
| -212 | 9.57 (243) | 960-40-300 | 960-40-375 |
| -23 | 10.04 (255) | 960-40-325 | 960-40-375 |
| -237 | 10.55 (268) | 960-40-325 | 960-40-400 |
| -25 | 11.02 (280) | 960-40-350 | 960-40-400 |
| -262 | 11.54 (293) | 960-40-350 | 960-40-425 |
| -28 | 12.01 (305) | 960-40-375 | 960-40-425 |
| -29 | 12.52 (318) | 960-40-375 | 960-40-450 |
| -30 | 12.99 (330) | 960-40-400 | 960-40-450 |
| -312 | 13.50 (343) | 960-40-400 | 960-40-475 |
| -325 | 13.98 (355) | 960-40-425 | 960-40-475 |
| -337 | 14.49 (368) | 960-40-425 | 960-40-500 |
| -350 | 14.96 (380) | 960-40-450 | 960-40-500 |
| -362 | 15.47 (393) | 960-40-450 | 960-40-525 |
| -375 | 15.98 (406) | 960-40-475 | 960-40-525 |
| -387 | 16.46 (418) | 960-40-475 | 960-40-550 |
| -400 | 16.93 (430) | 960-40-500 | 960-40-550 |

### 3838/3938/R7838

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.19 (81) | * | 960-40-200 |
| -06 | 3.90 (99) | * | 960-40-225 |
| -07 | 4.17 (106) | * | 960-40-225 |
| -087 | 4.69 (119) | 960-40-175 | 960-40-250 |
| -10 | 5.16 (131) | 960-40-200 | 960-40-250 |
| -11 | 5.47 (139) | 960-40-200 | 960-40-275 |
| -112 | 5.67 (144) | 960-40-200 | 960-40-275 |
| -12 | 6.14 (156) | 960-40-225 | 960-40-275 |
| -137 | 6.65 (169) | 960-40-225 | 960-40-300 |
| -15 | 7.13 (181) | 960-40-250 | 960-40-300 |
| -162 | 7.64 (194) | 960-40-250 | 960-40-325 |
| -17 | 7.83 (199) | 960-40-250 | 960-40-325 |
| -18 | 8.11 (206) | 960-40-275 | 960-40-325 |
| -187 | 8.62 (219) | 960-40-275 | 960-40-350 |
| -20 | 9.09 (231) | 960-40-300 | 960-40-350 |
| -212 | 9.61 (244) | 960-40-300 | 960-40-375 |
| -23 | 10.08 (256) | 960-40-325 | 960-40-375 |
| -237 | 10.59 (269) | 960-40-325 | 960-40-400 |
| -25 | 11.06 (281) | 960-40-350 | 960-40-400 |
| -262 | 11.57 (294) | 960-40-350 | 960-40-425 |
| -28 | 12.05 (306) | 960-40-375 | 960-40-425 |
| -29 | 12.56 (319) | 960-40-375 | 960-40-450 |
| -30 | 13.03 (331) | 960-40-400 | 960-40-450 |
| -312 | 13.54 (344) | 960-40-400 | 960-40-475 |
| -325 | 14.02 (356) | 960-40-425 | 960-40-475 |
| -337 | 14.53 (369) | 960-40-425 | 960-40-500 |
| -350 | 15.00 (381) | 960-40-450 | 960-40-500 |
| -362 | 15.51 (394) | 960-40-450 | 960-40-525 |
| -375 | 15.98 (406) | 960-40-475 | 960-40-525 |
| -387 | 16.50 (419) | 960-40-475 | 960-40-550 |
| -400 | 16.97 (431) | 960-40-500 | 960-40-550 |

### E6-52/R6-52

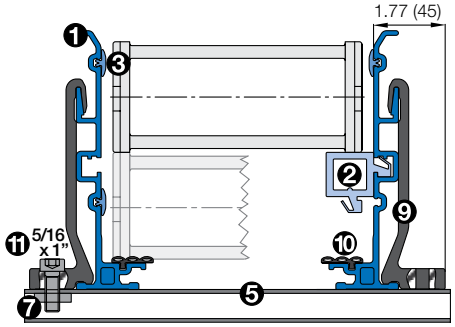
| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -040 | 2.68 (68) | * | 960-40-200 |
| -050 | 3.07 (78) | * | 960-40-200 |
| -062 | 3.54 (90) | * | 960-40-225 |
| -070 | 3.86 (98) | * | 960-40-225 |
| -075 | 4.06 (103) | * | 960-40-225 |
| -100 | 5.04 (128) | 960-40-175 | 960-40-250 |
| -125 | 6.02 (153) | 960-40-200 | 960-40-275 |
| -150 | 7.01 (178) | 960-40-225 | 960-40-300 |
| -175 | 7.99 (203) | 960-40-250 | 960-40-325 |
| -200 | 8.98 (228) | 960-40-275 | 960-40-350 |
| -225 | 9.96 (253) | 960-40-300 | 960-40-375 |
| -250 | 10.94 (278) | 960-40-325 | 960-40-400 |
| -275 | 11.92 (303) | 960-40-350 | 960-40-425 |
| -300 | 12.91 (328) | 960-40-375 | 960-40-450 |

### E4-48L/R4-48L

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -050 | 2.91 (74) | * | 960-30-200 |
| -062 | 3.39 (86) | * | 960-30-200 |
| -075 | 3.90 (99) | * | 960-30-225 |
| -087 | 4.37 (111) | * | 960-30-225 |
| -100 | 4.88 (124) | 960-30-175 | 960-30-250 |
| -125 | 5.87 (149) | 960-30-200 | 960-30-275 |
| -150 | 6.85 (174) | 960-30-225 | 960-30-300 |
| -175 | 7.83 (199) | 960-30-250 | 960-30-325 |
| -200 | 8.82 (224) | 960-30-275 | 960-30-350 |
| -250 | 10.79 (274) | 960-30-325 | 960-30-400 |

*upon request

# Heavy Duty Version - Installation Set Part No. 973-50




For the "Heavy Duty" installation set:
Insert Part No. **973-40-____** instead of **960-40-____**
on the right column "attached outwards"

- **Components, trough "Heavy Duty":**
- ❶ Trough side parts, aluminum, 6.56 ft. (2m)
- ❷ Glide bar, plastic, 6.56 ft. (2m)
- ❸ Glide strips, plastic 6.56 ft. (2m)
  (without glide strips on request)
- ❿ Optional: Silencer profile, rubber
- **Components, installation set "Heavy Duty":**
- ❺ profile rail, steel galvanized
- ❼ Sliding nut 5/16
- ❾ Heavy duty bracket, aluminum
- ⓫ Screw 5/16 x 1"

**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

- = Guide trough
- = Glide bar
- = Installation set "Heavy duty"
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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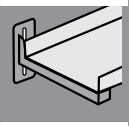
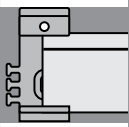
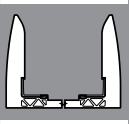






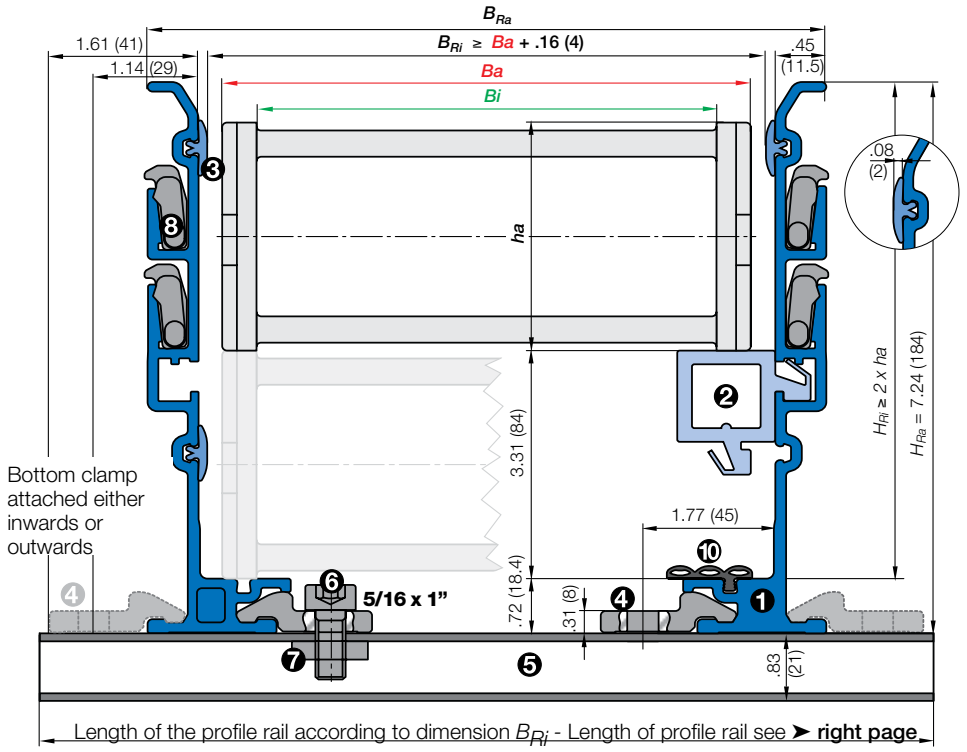
# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 974-30-SL and 974-31-SL Trough Height: 7.24 in. (184 mm)

## Aluminum SuperTrough — Basic Version

**For the following Series**

| |
|---|
| **System E4 Series:** |
| ● 14040/14140/R18840 |
| ● 14240/14340 |
| **System E6 Series:** |
| ● E6-62 |
| **System E4-1 Series** |
| ● E4-56/H4-56/R4-56 |




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

**!** $H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

● = Guide trough
● = Glide bar
● = Installation set "Basic"
● = profile rail

● **Components, trough:**
❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
❿ Optional: Silencer profile, rubber

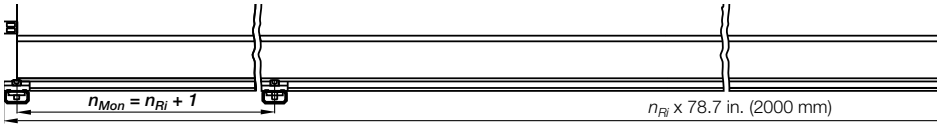
● **Components, installation set:**
❹ Bottom clamp, aluminum
❺ profile rail, steel galvanized
❻ Screw 5/16 x 1"
❼ Sliding nut 5/16
❽ Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **974-30-SL** | ≈ 22.05 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **974-31-SL** | ≈ 28.22 lbs |
| 1 Installation set **"Basic"** without profile rail | **960-50** | ≈ .18 lbs |
| 1 Installation set **"Basic"** with profile rail | **960-50-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75.50** | ≈ .09 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw 5/16 x 1", individual | **82-55** | |
| 1 Sliding nut 5/16, individual | **82-56** | |
| 2 Glide bars, 6.56 ft. (2m) section | **83-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-68H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

### Number of installation sets which have to be installed




igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## E4-56/H4-56/R4-56

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.46 (88) | * | 960-50-225 |
| -06 | 4.06 (103) | * | 960-50-225 |
| -07 | 4.45 (113) | * | 960-50-250 |
| -10 | 5.43 (138) | 960-50-200 | 960-50-275 |
| -11 | 5.94 (151) | 960-50-200 | 960-50-275 |
| -12 | 6.42 (163) | 960-50-225 | 960-50-300 |
| -13 | 6.93 (176) | 960-50-225 | 960-50-300 |
| -15 | 7.40 (188) | 960-50-250 | 960-50-325 |
| -16 | 7.91 (201) | 960-50-250 | 960-50-325 |
| -17 | 8.39 (213) | 960-50-275 | 960-50-350 |
| -18 | 8.90 (226) | 960-50-275 | 960-50-350 |
| -20 | 9.37 (238) | 960-50-300 | 960-50-375 |
| -21- | 9.88 (251) | 960-50-300 | 960-50-375 |
| -22 | 10.35 (263) | 960-50-325 | 960-50-400 |
| -23 | 10.87 (276) | 960-50-325 | 960-50-400 |
| -25 | 11.34 (288) | 960-50-350 | 960-50-425 |
| -26 | 11.85 (301) | 960-50-350 | 960-50-425 |
| -27 | 12.32 (313) | 960-50-375 | 960-50-450 |
| -28 | 12.83 (326) | 960-50-375 | 960-50-450 |
| -30 | 13.31 (338) | 960-50-400 | 960-50-475 |
| -31 | 13.82 (351) | 960-50-400 | 960-50-475 |
| -32 | 14.29 (363) | 960-50-425 | 960-50-500 |
| -33 | 14.80 (376) | 960-50-425 | 960-50-500 |
| -35 | 15.28 (388) | 960-50-450 | 960-50-525 |
| -36 | 15.79 (401) | 960-50-450 | 960-50-525 |
| -37 | 16.26 (413) | 960-50-475 | 960-50-550 |
| -38 | 16.77 (426) | 960-50-475 | 960-50-550 |
| -40 | 17.24 (438) | 960-50-500 | 960-50-575 |
| -41 | 17.76 (451) | 960-50-500 | 960-50-575 |
| -42 | 18.23 (463) | 960-50-525 | 960-50-600 |
| -43 | 18.74 (476) | 960-50-525 | 960-50-600 |
| -45 | 19.21 (488) | 960-50-550 | 960-50-625 |
| -46 | 19.72 (501) | 960-50-550 | 960-50-625 |
| -47 | 20.20 (513) | 960-50-575 | 960-50-650 |
| -48 | 20.71 (526) | 960-50-575 | 960-50-650 |
| -50 | 21.18 (538) | 960-50-600 | 960-50-675 |
| -51 | 21.69 (551) | 960-50-600 | 960-50-675 |
| -52 | 22.17 (563) | 960-50-625 | 960-50-700 |
| -53 | 22.68 (576) | 960-50-625 | 960-50-700 |
| -55 | 23.15 (588) | 960-50-650 | 960-50-725 |
| -60 | 25.12 (638) | 960-50-700 | 960-50-775 |

## 14240/14340

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.15 (80) | * | 960-50-200 |
| -06 | 3.86 (98) | * | 960-50-225 |
| -07 | 4.13 (105) | * | 960-50-225 |
| -087 | 4.65 (118) | 960-50-175 | 960-50-250 |
| -10 | 5.12 (130) | 960-50-200 | 960-50-250 |
| -11 | 5.43 (138) | 960-50-200 | 960-50-275 |
| -112 | 5.63 (143) | 960-50-200 | 960-50-275 |
| -12 | 6.10 (155) | 960-50-225 | 960-50-275 |
| -137 | 6.61 (168) | 960-50-225 | 960-50-300 |
| -15 | 7.08 (180) | 960-50-250 | 960-50-300 |
| -162 | 7.60 (193) | 960-50-250 | 960-50-325 |
| -17 | 7.79 (198) | 960-50-250 | 960-50-325 |
| -18 | 8.07 (205) | 960-50-275 | 960-50-325 |
| -187 | 8.58 (218) | 960-50-275 | 960-50-350 |
| -20 | 9.05 (230) | 960-50-300 | 960-50-350 |
| -212 | 9.57 (243) | 960-50-300 | 960-50-375 |
| -23 | 10.04 (255) | 960-50-325 | 960-50-375 |
| -237 | 10.55 (268) | 960-50-325 | 960-50-400 |
| -25 | 11.02 (280) | 960-50-350 | 960-50-400 |
| -262 | 11.54 (293) | 960-50-350 | 960-50-425 |
| -28 | 12.01 (305) | 960-50-375 | 960-50-425 |
| -29 | 12.52 (318) | 960-50-375 | 960-50-450 |
| -30 | 12.99 (330) | 960-50-400 | 960-50-450 |
| -312 | 13.50 (343) | 960-50-400 | 960-50-475 |
| -325 | 13.98 (355) | 960-50-425 | 960-50-475 |
| -337 | 14.49 (368) | 960-50-425 | 960-50-500 |
| -350 | 14.96 (380) | 960-50-450 | 960-50-500 |
| -362 | 15.47 (393) | 960-50-450 | 960-50-525 |
| -375 | 15.94 (405) | 960-50-475 | 960-50-525 |
| -387 | 16.46 (418) | 960-50-475 | 960-50-550 |
| -400 | 16.93 (430) | 960-50-500 | 960-50-550 |

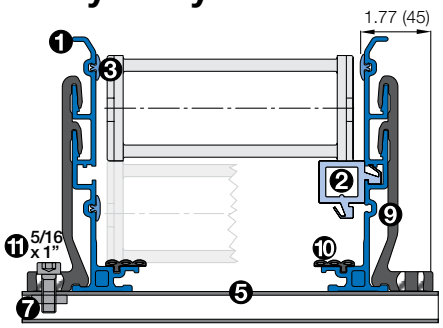
## 14040/14140/R18840

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.15 (80) | * | 960-50-200 |
| -06 | 3.74 (95) | * | 960-50-225 |
| -07 | 4.13 (105) | * | 960-50-225 |
| -10 | 5.12 (130) | 960-50-200 | 960-50-250 |
| -11 | 5.63 (143) | 960-50-200 | 960-50-275 |
| -12 | 6.10 (155) | 960-50-225 | 960-50-275 |
| -13 | 6.61 (168) | 960-50-225 | 960-50-300 |
| -15 | 7.09 (180) | 960-50-250 | 960-50-300 |
| -16 | 7.60 (193) | 960-50-250 | 960-50-325 |
| -17 | 8.07 (205) | 960-50-275 | 960-50-325 |
| -18 | 8.58 (218) | 960-50-275 | 960-50-350 |
| -20 | 9.39 (230) | 960-50-300 | 960-50-350 |
| -21 | 9.57 (243) | 960-50-300 | 960-50-375 |
| -22 | 10.04 (255) | 960-50-325 | 960-50-375 |
| -23 | 10.55 (268) | 960-50-325 | 960-50-400 |
| -25 | 11.02 (280) | 960-50-350 | 960-50-400 |
| -26 | 11.53 (293) | 960-50-350 | 960-50-425 |
| -27 | 12.01(305) | 960-50-375 | 960-50-425 |
| -28 | 12.52 (318) | 960-50-375 | 960-50-450 |
| -30 | 12.99 (330) | 960-50-400 | 960-50-450 |
| -31 | 13.50 (343) | 960-50-400 | 960-50-475 |
| -32 | 13.98 (355) | 960-50-425 | 960-50-475 |
| -33 | 14.49 (368) | 960-50-425 | 960-50-500 |
| -35 | 14.96 (380) | 960-50-450 | 960-50-500 |
| -36 | 15.47 (393) | 960-50-450 | 960-50-525 |
| -37 | 15.94 (405) | 960-50-475 | 960-50-525 |
| -38 | 16.46 (418) | 960-50-475 | 960-50-550 |
| -40 | 16.93 (430) | 960-50-500 | 960-50-550 |
| -41 | 17.44 (443) | 960-50-500 | 960-50-575 |
| -42 | 17.91 (455) | 960-50-525 | 960-50-575 |
| -43 | 18.43 (468) | 960-50-525 | 960-50-600 |
| -45 | 18.90 (480) | 960-50-550 | 960-50-600 |
| -46 | 19.41 (493) | 960-50-550 | 960-50-625 |
| -47 | 19.88 (505) | 960-50-575 | 960-50-625 |
| -48 | 20.39 (518) | 960-50-575 | 960-50-650 |
| -50 | 20.87 (530) | 960-50-600 | 960-50-650 |
| -51 | 21.38 (543) | 960-50-600 | 960-50-675 |
| -52 | 21.85 (555) | 960-50-625 | 960-50-675 |
| -53 | 22.36 (568) | 960-50-625 | 960-50-700 |
| -55 | 22.83 (580) | 960-50-650 | 960-50-700 |
| -60 | 24.80 (630) | 960-50-700 | 960-50-750 |

## E6-62

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.54 (90) | * | 960-50-225 |
| -06 | 4.25 (108) | * | 960-50-225 |
| -07 | 4.53 (115) | * | 960-50-250 |
| -087 | 5.00 (127) | 960-50-175 | 960-50-250 |
| -10 | 5.51 (140) | 960-50-200 | 960-50-275 |
| -11 | 5.83 (148) | 960-50-200 | 960-50-275 |
| -112 | 5.98 (152) | 960-50-200 | 960-50-275 |
| -12 | 6.50 (165) | 960-50-225 | 960-50-300 |
| -137 | 6.97 (177) | 960-50-225 | 960-50-300 |
| -15 | 7.48 (190) | 960-50-250 | 960-50-325 |
| -162 | 7.95 (202) | 960-50-250 | 960-50-325 |
| -17 | 8.19 (208) | 960-50-275 | 960-50-325 |
| -18 | 8.46 (215) | 960-50-275 | 960-50-350 |
| -187 | 8.94 (227) | 960-50-275 | 960-50-350 |
| -20 | 9.45 (240) | 960-50-300 | 960-50-375 |
| -212 | 9.92 (252) | 960-50-300 | 960-50-375 |
| -23 | 10.43 (265) | 960-50-325 | 960-50-400 |
| -237 | 10.91 (277) | 960-50-325 | 960-50-400 |
| -25 | 11.42 (290) | 960-50-350 | 960-50-425 |
| -262 | 11.89 (302) | 960-50-350 | 960-50-425 |
| -28 | 12.40 (315) | 960-50-375 | 960-50-450 |
| -29 | 12.87 (327) | 960-50-375 | 960-50-450 |
| -30 | 13.39 (340) | 960-50-400 | 960-50-475 |
| -312 | 13.86 (352) | 960-50-400 | 960-50-475 |
| -325 | 14.37 (365) | 960-50-425 | 960-50-500 |
| -337 | 14.84 (377) | 960-50-425 | 960-50-500 |
| -350 | 15.35 (390) | 960-50-450 | 960-50-525 |
| -362 | 15.83 (402) | 960-50-450 | 960-50-525 |
| -375 | 16.34 (415) | 960-50-475 | 960-50-550 |
| -387 | 16.81 (427) | 960-50-475 | 960-50-550 |
| -400 | 17.32 (440) | 960-50-500 | 960-50-575 |

# Heavy Duty Version - Installation Set Part No. 974-50




For the “Heavy Duty” installation set:
Insert Part No. **974-50-____** instead of **960-50-____**
on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⓫ Screw 5/16 x 1”

**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

- = Guide trough
- = Glide bar
- = Installation set “Heavy duty”
- = profile rail

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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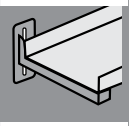
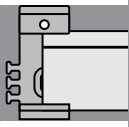
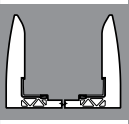






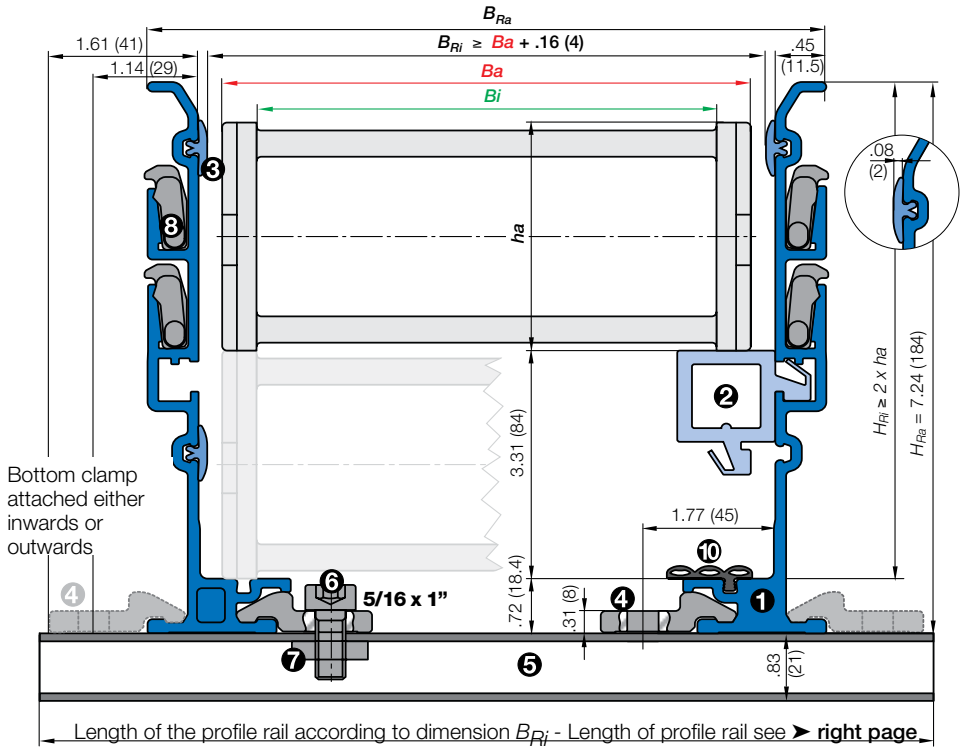
# Guide Trough Systems
# Aluminum SuperTrough

**Part No. 974-30-SL and 974-31-SL Trough Height: 7.24 in. (184 mm)**

## Aluminum SuperTrough — Basic Version

**For the following Series**

**System E4 Series:**
- 400/410/R880
- 4040/4140/R8840




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set "Basic"
- = profile rail

**● Components, trough:**
1. Trough side parts, aluminum, 6.56 ft. (2m)
2. Glide bar, plastic, 6.56 ft. (2m)
3. Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
10. Optional: Silencer profile, rubber

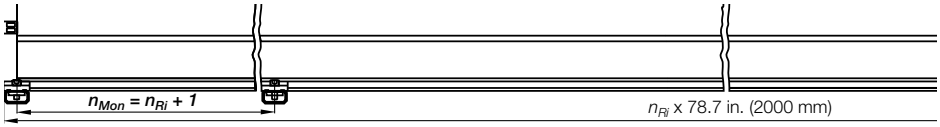
**● Components, installation set:**
4. Bottom clamp, aluminum
5. profile rail, steel galvanized
6. Screw 5/16 x 1"
7. Sliding nut 5/16
8. Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **974-30-SL** | ≈ 22.05 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **974-31-SL** | ≈ 28.22 lbs |
| 1 Installation set **"Basic"** without profile rail | **960-50** | ≈ .18 lbs |
| 1 Installation set **"Basic"** with profile rail | **960-50-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75.50** | ≈ .09 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw 5/16 x 1", individual | **82-55** | |
| 1 Sliding nut 5/16, individual | **82-56** | |
| 2 Glide bars, 6.56 ft. (2m) section | **83-79** | ≈ |
| 1 profile rail, individual | **92-52G____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-68H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

**Number of installation sets which have to be installed**

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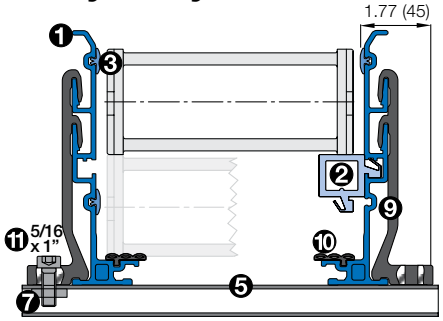
# Guide Trough Systems
# Aluminum SuperTrough

| 400/410/R880 | | | | 4040/4140/R8840 | | | |
|---|---|---|---|---|---|---|---|
| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards | E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
| -05 | 3.46 (88) | * | 960-50-225 | -05 | 3.54 (90) | * | 960-50-225 |
| -06 | 4.06 (103) | * | 960-50-225 | -06 | 4.13 (105) | * | 960-50-225 |
| -07 | 4.45 (113) | * | 960-50-250 | -07 | 4.53 (115) | * | 960-50-250 |
| -10 | 5.43 (138) | 960-50-200 | 960-50-275 | -10 | 5.51 (140) | 960-50-200 | 960-50-275 |
| -11 | 5.94 (151) | 960-50-200 | 960-50-275 | -11 | 6.02 (153) | 960-50-200 | 960-50-275 |
| -12 | 6.42 (163) | 960-50-225 | 960-50-300 | -12 | 6.50 (165) | 960-50-225 | 960-50-300 |
| -13 | 6.93 (176) | 960-50-225 | 960-50-300 | -13 | 7.01 (178) | 960-50-225 | 960-50-300 |
| -15 | 7.40 (188) | 960-50-250 | 960-50-325 | -15 | 7.48 (190) | 960-50-250 | 960-50-325 |
| -16 | 7.91 (201) | 960-50-250 | 960-50-325 | -16 | 7.99 (203) | 960-50-250 | 960-50-325 |
| -17 | 8.39 (213) | 960-50-275 | 960-50-350 | -17 | 8.46 (215) | 960-50-275 | 960-50-350 |
| -18 | 8.90 (226) | 960-50-275 | 960-50-350 | -18 | 8.98 (228) | 960-50-275 | 960-50-350 |
| -20 | 9.37 (238) | 960-50-300 | 960-50-375 | -20 | 9.45 (240) | 960-50-300 | 960-50-375 |
| -21- | 9.88 (251) | 960-50-300 | 960-50-375 | -21 | 9.96 (253) | 960-50-300 | 960-50-375 |
| -22 | 10.35 (263) | 960-50-325 | 960-50-400 | -22 | 10.43 (265) | 960-50-325 | 960-50-400 |
| -23 | 10.87 (276) | 960-50-325 | 960-50-400 | -23 | 10.94 (278) | 960-50-325 | 960-50-400 |
| -25 | 11.34 (288) | 960-50-350 | 960-50-425 | -25 | 11.42 (290) | 960-50-350 | 960-50-425 |
| -26 | 11.85 (301) | 960-50-350 | 960-50-425 | -26 | 11.93 (303) | 960-50-350 | 960-50-425 |
| -27 | 12.32 (313) | 960-50-375 | 960-50-450 | -27 | 12.40 (315) | 960-50-375 | 960-50-450 |
| -28 | 12.83 (326) | 960-50-375 | 960-50-450 | -28 | 12.91 (328) | 960-50-375 | 960-50-450 |
| -30 | 13.31 (338) | 960-50-400 | 960-50-475 | -30 | 13.39 (340) | 960-50-400 | 960-50-475 |
| -31 | 13.82 (351) | 960-50-400 | 960-50-475 | -31 | 13.90 (353) | 960-50-400 | 960-50-475 |
| -32 | 14.29 (363) | 960-50-425 | 960-50-500 | -32 | 14.37 (365) | 960-50-425 | 960-50-500 |
| -33 | 14.80 (376) | 960-50-425 | 960-50-500 | -33 | 14.88 (378) | 960-50-425 | 960-50-500 |
| -35 | 15.28 (388) | 960-50-450 | 960-50-525 | -35 | 15.35 (390) | 960-50-450 | 960-50-525 |
| -36 | 15.79 (401) | 960-50-450 | 960-50-525 | -36 | 15.87 (403) | 960-50-450 | 960-50-525 |
| -37 | 16.26 (413) | 960-50-475 | 960-50-550 | -37 | 16.34 (415) | 960-50-475 | 960-50-550 |
| -38 | 16.77 (426) | 960-50-475 | 960-50-550 | -38 | 16.85 (428) | 960-50-475 | 960-50-550 |
| -40 | 17.24 (438) | 960-50-500 | 960-50-575 | -40 | 17.32 (440) | 960-50-500 | 960-50-575 |
| -41 | 17.76 (451) | 960-50-500 | 960-50-575 | -41 | 17.83 (453) | 960-50-500 | 960-50-575 |
| -42 | 18.23 (463) | 960-50-525 | 960-50-600 | -42 | 18.31 (465) | 960-50-525 | 960-50-600 |
| -43 | 18.74 (476) | 960-50-525 | 960-50-600 | -43 | 18.82 (478) | 960-50-525 | 960-50-600 |
| -45 | 19.21 (488) | 960-50-550 | 960-50-625 | -45 | 19.29 (490) | 960-50-550 | 960-50-625 |
| -46 | 19.72 (501) | 960-50-550 | 960-50-625 | -46 | 19.80 (503) | 960-50-550 | 960-50-625 |
| -47 | 20.20 (513) | 960-50-575 | 960-50-650 | -47 | 20.28 (515) | 960-50-575 | 960-50-650 |
| -48 | 20.71 (526) | 960-50-575 | 960-50-650 | -48 | 20.79 (528) | 960-50-575 | 960-50-650 |
| -50 | 21.18 (538) | 960-50-600 | 960-50-675 | -50 | 21.26 (540) | 960-50-600 | 960-50-675 |
| -51 | 21.69 (551) | 960-50-600 | 960-50-675 | -51 | 21.77 (553) | 960-50-600 | 960-50-675 |
| -52 | 22.17 (563) | 960-50-625 | 960-50-700 | -52 | 22.24 (565) | 960-50-625 | 960-50-700 |
| -53 | 22.68 (576) | 960-50-625 | 960-50-700 | -53 | 22.76 (578) | 960-50-625 | 960-50-700 |
| -55 | 23.15 (588) | 960-50-650 | 960-50-725 | -55 | 23.23 (590) | 960-50-650 | 960-50-725 |
| -60 | 25.12 (638) | 960-50-700 | 960-50-775 | -60 | 25.20 (640) | 960-50-700 | 960-50-775 |

# Heavy Duty Version - Installation Set Part No. 974-50




For the “Heavy Duty” installation set:
Insert Part No. **974-50-____** instead of **960-50-____**
on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⓫ Screw 5/16 x 1”

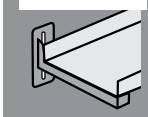
**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

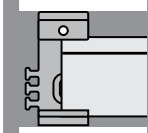
= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

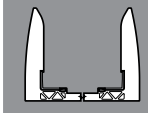



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS







# Guide Trough Systems
# Aluminum SuperTrough

## Part No. 975-30-SL and 975-31-SL Trough Height: 9.29 in. (236 mm)

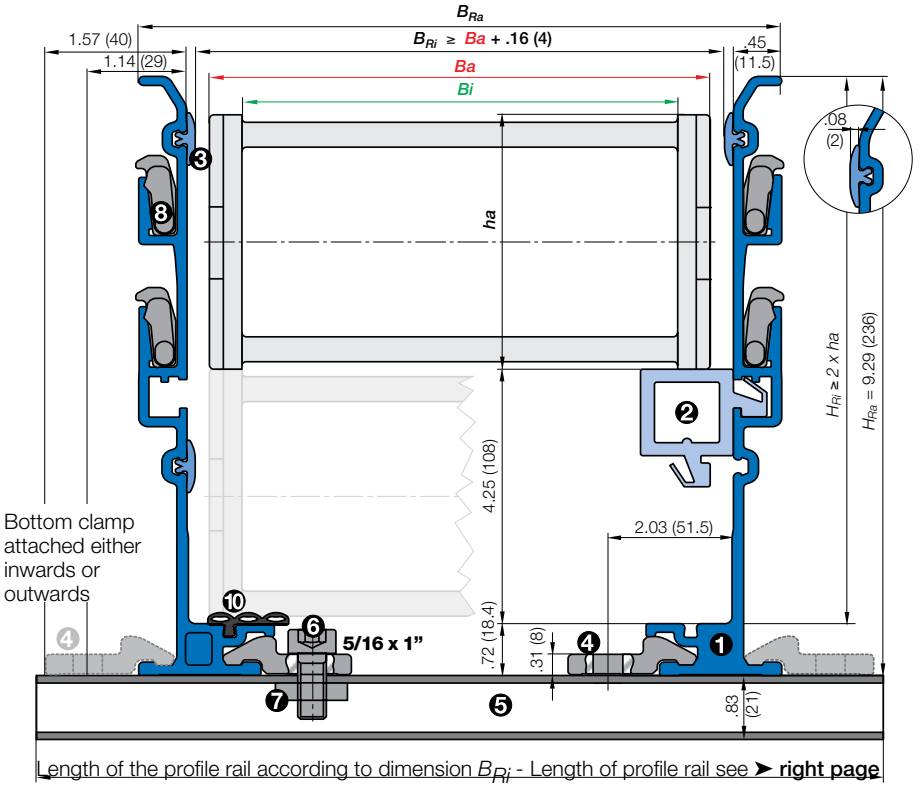
## Aluminum SuperTrough — Basic Version

**For the following Series**

**System E4 Series:**
- 5050/5150/R9850
- 15050/15150/R19850

**System E6 Series:**
- E6-80

**System E4-1 Series**
- E4-80/H4-80/R4-80




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 4$

- = Guide trough
- = Glide bar
- = Installation set "Basic"
- = profile rail

**● Components, trough:**
1. Trough side parts, aluminum, 6.56 ft. (2m)
2. Glide bar, plastic, 6.56 ft. (2m)
3. Glide strips, plastic, 6.56 ft. (2m) (without glide strips on request)
10. Optional: Silencer profile, rubber

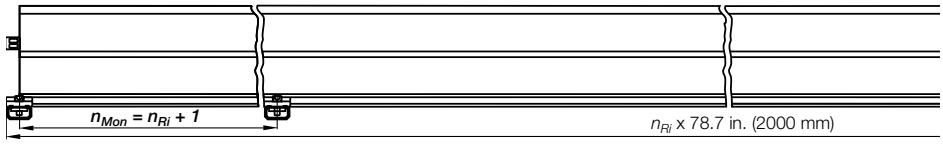
**● Components, installation set:**
4. Bottom clamp, aluminum
5. profile rail, steel galvanized
6. Screw 5/16 x 1"
7. Sliding nut 5/16
8. Interface connector, plastic

## **Basic version:** Aluminum SuperTrough components

| Complete guide trough sets - description | Part No. | Weight |
|---|---|---|
| Set of 2 trough side parts, incl. glide strips, without glide bars, 6.56 ft. (2m) section | **975-30-SL** | ≈ 30.87 lbs |
| Set of 2 trough side parts, incl. glide strips, with glide bars, 6.56 ft. (2m) section | **975-31-SL** | ≈ 36.60 lbs |
| 1 Installation set **"Basic"** without profile rail | **960-50** | ≈ .18 lbs |
| 1 Installation set **"Basic"** with profile rail | **960-50-____** | |
| **Single parts - description** | | |
| 1 Glide strip, individual, 6.56 ft. (2m) section | **75-01** | ≈ .13 lbs |
| 1 Bottom clamp, individual | **75.50** | ≈ .09 lbs |
| 1 Interface connector, individual | **75-60** | |
| 1 Screw 5/16 x 1" individual | **82-55** | |
| 1 Sliding nut 5/16, individual | **82-56** | |
| 2 Glide bars, 6.56 ft. (2m) section | **83-79** | ≈ |
| 1 profile rail, individual | **92-52-____** | ≈ .60 lbs/ft. |
| Silencer profile | **75-68H** | |

Supplement Part No. with the indicated profile rail-length-index.
**Example: 960-30-150** profile rail-length-index for your chosen trough inner width $B_{Ri}$
➤ See table on the right or the respective page for chosen series

## Number of installation sets which have to be installed

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# Guide Trough Systems
# Aluminum SuperTrough



## 5050/5150/R9850
## E4-80/H4-80/R4-80

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 4.09 (104) | * | 960-50-225 |
| -06 | 4.68 (119) | * | 960-50-250 |
| -07 | 5.08 (129) | * | 960-50-250 |
| -10 | 6.06 (154) | 960-50-225 | 960-50-275 |
| -11 | 6.57 (167) | 960-50-225 | 960-50-300 |
| -12 | 7.05 (179) | 960-50-250 | 960-50-300 |
| -13 | 7.56 (192) | 960-50-250 | 960-50-325 |
| -15 | 8.03 (204) | 960-50-275 | 960-50-325 |
| -16 | 8.54 (217) | 960-50-275 | 960-50-350 |
| -17 | 9.02 (229) | 960-50-300 | 960-50-350 |
| -18 | 9.53 (242) | 960-50-300 | 960-50-375 |
| -20 | 10.00 (254) | 960-50-325 | 960-50-375 |
| -21 | 10.51 (267) | 960-50-325 | 960-50-400 |
| -22 | 10.98 (279) | 960-50-350 | 960-50-400 |
| -23 | 11.50 (292) | 960-50-350 | 960-50-425 |
| -25 | 11.97 (304) | 960-50-375 | 960-50-425 |
| -26 | 12.48 (317) | 960-50-375 | 960-50-450 |
| -27 | 12.95 (329) | 960-50-400 | 960-50-450 |
| -28 | 13.46 (342) | 960-50-400 | 960-50-475 |
| -30 | 13.94 (354) | 960-50-425 | 960-50-475 |
| -31 | 14.45 (367) | 960-50-425 | 960-50-500 |
| -32 | 14.92 (379) | 960-50-450 | 960-50-500 |
| -33 | 15.43 (392) | 960-50-450 | 960-50-525 |
| -35 | 15.91 (404) | 960-50-475 | 960-50-525 |
| -36 | 16.42 (417) | 960-50-475 | 960-50-550 |
| -37 | 16.89 (429) | 960-50-500 | 960-50-550 |
| -38 | 17.40 (442) | 960-50-500 | 960-50-575 |
| -40 | 17.87 (454) | 960-50-525 | 960-50-575 |
| -41 | 18.39 (467) | 960-50-525 | 960-50-600 |
| -42 | 18.86 (479) | 960-50-550 | 960-50-600 |
| -43 | 19.37 (492) | 960-50-550 | 960-50-625 |
| -45 | 19.84 (504) | 960-50-575 | 960-50-625 |
| -46 | 20.35 (517) | 960-50-575 | 960-50-650 |
| -47 | 20.83 (529) | 960-50-600 | 960-50-650 |
| -48 | 21.34 (542) | 960-50-600 | 960-50-675 |
| -50 | 21.81 (554) | 960-50-625 | 960-50-675 |
| -51 | 22.32 (567) | 960-50-625 | 960-50-700 |
| -52 | 22.80 (579) | 960-50-650 | 960-50-700 |
| -53 | 23.31 (592) | 960-50-650 | 960-50-725 |
| -55 | 24.17 (604) | 960-50-675 | 960-50-725 |
| -60 | 25.75 (654) | 960-50-725 | 960-50-775 |

## 15050/15150/R19850

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.31 (84) | * | 960-50-200 |
| -07 | 4.29 (109) | * | 960-50-225 |
| -10 | 5.28 (134) | * | 960-50-250 |
| -11 | 5.75 (146) | 960-50-200 | 960-50-275 |
| -12 | 6.26 (159) | 960-50-225 | 960-50-275 |
| -13 | 6.73 (171) | 960-50-225 | 960-50-300 |
| -15 | 7.24 (184) | 960-50-250 | 960-50-300 |
| -16 | 7.72 (196) | 960-50-250 | 960-50-325 |
| -17 | 8.23 (209) | 960-50-275 | 960-50-325 |
| -18 | 8.70 (221) | 960-50-275 | 960-50-350 |
| -20 | 9.21 (234) | 960-50-300 | 960-50-350 |
| -21 | 9.69 (246) | 960-50-300 | 960-50-375 |
| -22 | 10.20 (259) | 960-50-325 | 960-50-375 |
| -23 | 10.67 (271) | 960-50-325 | 960-50-400 |
| -25 | 11.18 (284) | 960-50-350 | 960-50-400 |
| -26 | 11.65 (296) | 960-50-350 | 960-50-425 |
| -27 | 12.16 (309) | 960-50-375 | 960-50-425 |
| -28 | 12.64 (321) | 960-50-375 | 960-50-450 |
| -30 | 13.15 (334) | 960-50-400 | 960-50-450 |
| -31 | 13.62 (346) | 960-50-400 | 960-50-475 |
| -32 | 14.13 (359) | 960-50-425 | 960-50-475 |
| -33 | 14.61 (371) | 960-50-425 | 960-50-500 |
| -35 | 15.12 (384) | 960-50-450 | 960-50-500 |
| -36 | 15.59 (396) | 960-50-450 | 960-50-525 |
| -37 | 16.10 (409) | 960-50-475 | 960-50-525 |
| -38 | 16.57 (421) | 960-50-475 | 960-50-550 |
| -40 | 17.07 (434) | 960-50-500 | 960-50-550 |
| -41 | 17.56 (446) | 960-50-500 | 960-50-575 |
| -42 | 18.07 (459) | 960-50-525 | 960-50-575 |
| -43 | 18.54 (471) | 960-50-525 | 960-50-600 |
| -45 | 19.06 (484) | 960-50-550 | 960-50-600 |
| -46 | 19.53 (496) | 960-50-550 | 960-50-625 |
| -47 | 20.04 (509) | 960-50-575 | 960-50-625 |
| -48 | 20.51 (521) | 960-50-575 | 960-50-650 |
| -50 | 21.02 (534) | 960-50-600 | 960-50-650 |
| -51 | 21.50 (546) | 960-50-600 | 960-50-675 |
| -52 | 22.01 (559) | 960-50-625 | 960-50-675 |
| -53 | 22.48 (571) | 960-50-625 | 960-50-700 |
| -55 | 22.99 (584) | 960-50-650 | 960-50-700 |
| -60 | 24.96 (634) | 960-50-700 | 960-50-750 |

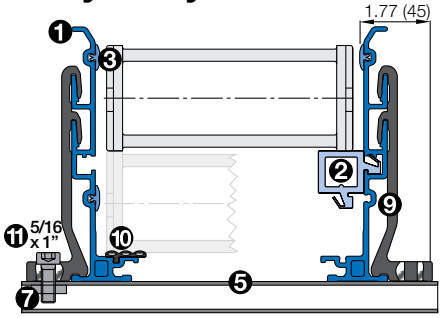
## E6-80

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 4.09 (104) | * | 960-50-225 |
| -06 | 4.68 (119) | * | 960-50-250 |
| -07 | 5.08 (129) | * | 960-50-250 |
| -10 | 6.06 (154) | 960-50-225 | 960-50-275 |
| -11 | 6.57 (167) | 960-50-225 | 960-50-300 |
| -12 | 7.05 (179) | 960-50-250 | 960-50-300 |
| -13 | 7.56 (192) | 960-50-250 | 960-50-325 |
| -15 | 8.03 (204) | 960-50-275 | 960-50-325 |
| -16 | 8.54 (217) | 960-50-275 | 960-50-350 |
| -17 | 9.02 (229) | 960-50-300 | 960-50-350 |
| -18 | 9.53 (242) | 960-50-300 | 960-50-375 |
| -20 | 10.00 (254) | 960-50-325 | 960-50-375 |
| -21 | 10.51 (267) | 960-50-325 | 960-50-400 |
| -22 | 10.98 (279) | 960-50-350 | 960-50-400 |
| -23 | 11.50 (292) | 960-50-350 | 960-50-425 |
| -25 | 11.97 (304) | 960-50-375 | 960-50-425 |
| -26 | 12.48 (317) | 960-50-375 | 960-50-450 |
| -27 | 12.95 (329) | 960-50-400 | 960-50-450 |
| -28 | 13.46 (342) | 960-50-400 | 960-50-475 |
| -30 | 13.94 (354) | 960-50-425 | 960-50-475 |
| -31 | 14.45 (367) | 960-50-425 | 960-50-500 |
| -32 | 14.92 (379) | 960-50-450 | 960-50-500 |
| -33 | 15.43 (392) | 960-50-450 | 960-50-525 |
| -35 | 15.91 (404) | 960-50-475 | 960-50-525 |
| -36 | 16.42 (417) | 960-50-475 | 960-50-550 |
| -37 | 16.89 (429) | 960-50-500 | 960-50-550 |
| -38 | 17.40 (442) | 960-50-500 | 960-50-575 |
| -40 | 17.87 (454) | 960-50-525 | 960-50-575 |
| -41 | 18.39 (467) | 960-50-525 | 960-50-600 |
| -42 | 18.86 (479) | 960-50-550 | 960-50-600 |
| -43 | 19.37 (492) | 960-50-550 | 960-50-625 |
| -45 | 19.84 (504) | 960-50-575 | 960-50-625 |
| -46 | 20.35 (517) | 960-50-575 | 960-50-650 |
| -47 | 20.83 (529) | 960-50-600 | 960-50-650 |
| -48 | 21.34 (542) | 960-50-600 | 960-50-675 |
| -50 | 21.81 (554) | 960-50-625 | 960-50-675 |
| -51 | 22.32 (567) | 960-50-625 | 960-50-700 |
| -52 | 22.80 (579) | 960-50-650 | 960-50-700 |
| -53 | 23.31 (592) | 960-50-650 | 960-50-725 |
| -55 | 24.17 (604) | 960-50-675 | 960-50-725 |
| -60 | 25.75 (654) | 960-50-725 | 960-50-775 |

## 15250/15350

| E-Chain® Width Index | $B_{Ri}$ in. (mm) | Part No. attached inwards | Part No. attached outwards |
|---|---|---|---|
| -05 | 3.31 (84) | * | 960-50-200 |
| -06 | 4.02 (102) | * | 960-50-225 |
| -07 | 4.29 (109) | * | 960-50-225 |
| -087 | 4.76 (121) | * | 960-50-250 |
| -09 | 5.16 (131) | * | 960-50-250 |
| -10 | 5.28 (134) | * | 960-50-250 |
| -11 | 5.59 (142) | 960-50-200 | 960-50-250 |
| -112 | 5.79 (147) | 960-50-200 | 960-50-275 |
| -12 | 6.26 (159) | 960-50-225 | 960-50-275 |
| -137 | 6.73 (171) | 960-50-225 | 960-50-300 |
| -15 | 7.24 (184) | 960-50-250 | 960-50-300 |
| -162 | 7.76 (197) | 960-50-250 | 960-50-325 |
| -17 | 7.95 (202) | 960-50-250 | 960-50-325 |
| -18 | 8.23 (209) | 960-50-275 | 960-50-325 |
| -187 | 8.74 (222) | 960-50-275 | 960-50-350 |
| -20 | 9.21 (234) | 960-50-300 | 960-50-350 |
| -212 | 9.72 (247) | 960-50-300 | 960-50-375 |
| -23 | 10.20 (259) | 960-50-325 | 960-50-375 |
| -237 | 10.71 (272) | 960-50-325 | 960-50-400 |
| -25 | 11.18 (284) | 960-50-350 | 960-50-400 |
| -262 | 11.69 (297) | 960-50-350 | 960-50-425 |
| -28 | 12.16 (309) | 960-50-375 | 960-50-425 |
| -29 | 12.68 (322) | 960-50-375 | 960-50-450 |
| -30 | 13.15 (334) | 960-50-400 | 960-50-450 |
| -312 | 13.66 (347) | 960-50-400 | 960-50-475 |
| -325 | 14.13 (359) | 960-50-425 | 960-50-475 |
| -337 | 14.65 (372) | 960-50-425 | 960-50-500 |
| -350 | 15.12 (384) | 960-50-450 | 960-50-500 |
| -362 | 15.63 (397) | 960-50-450 | 960-50-525 |
| -375 | 16.10 (409) | 960-50-475 | 960-50-525 |
| -387 | 16.61 (422) | 960-50-475 | 960-50-550 |
| -400 | 17.09 (434) | 960-50-500 | 960-50-550 |

# Heavy Duty Version - Installation Set Part No. 975-50




For the “Heavy Duty” installation set:
Insert Part No. **975-50-____** instead of **960-50-____**
on the right column “attached outwards”

- **Components, trough “Heavy Duty”:**

❶ Trough side parts, aluminum, 6.56 ft. (2m)
❷ Glide bar, plastic, 6.56 ft. (2m)
❸ Glide strips, plastic 6.56 ft. (2m)
(without glide strips on request)
❿ Optional: Silencer profile, rubber

- **Components, installation set “Heavy Duty”:**

❺ profile rail, steel galvanized
❼ Sliding nut 5/16
❾ Heavy duty bracket, aluminum
⓫ Screw 5/16 x 1”

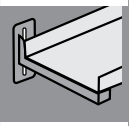
**Note: Dimensions similar to Basic version!**
**Exception: Heavy duty bracket, see drawing**

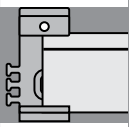
= Guide trough
= Glide bar
= Installation set “Heavy duty”
= profile rail

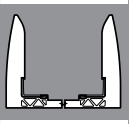
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST



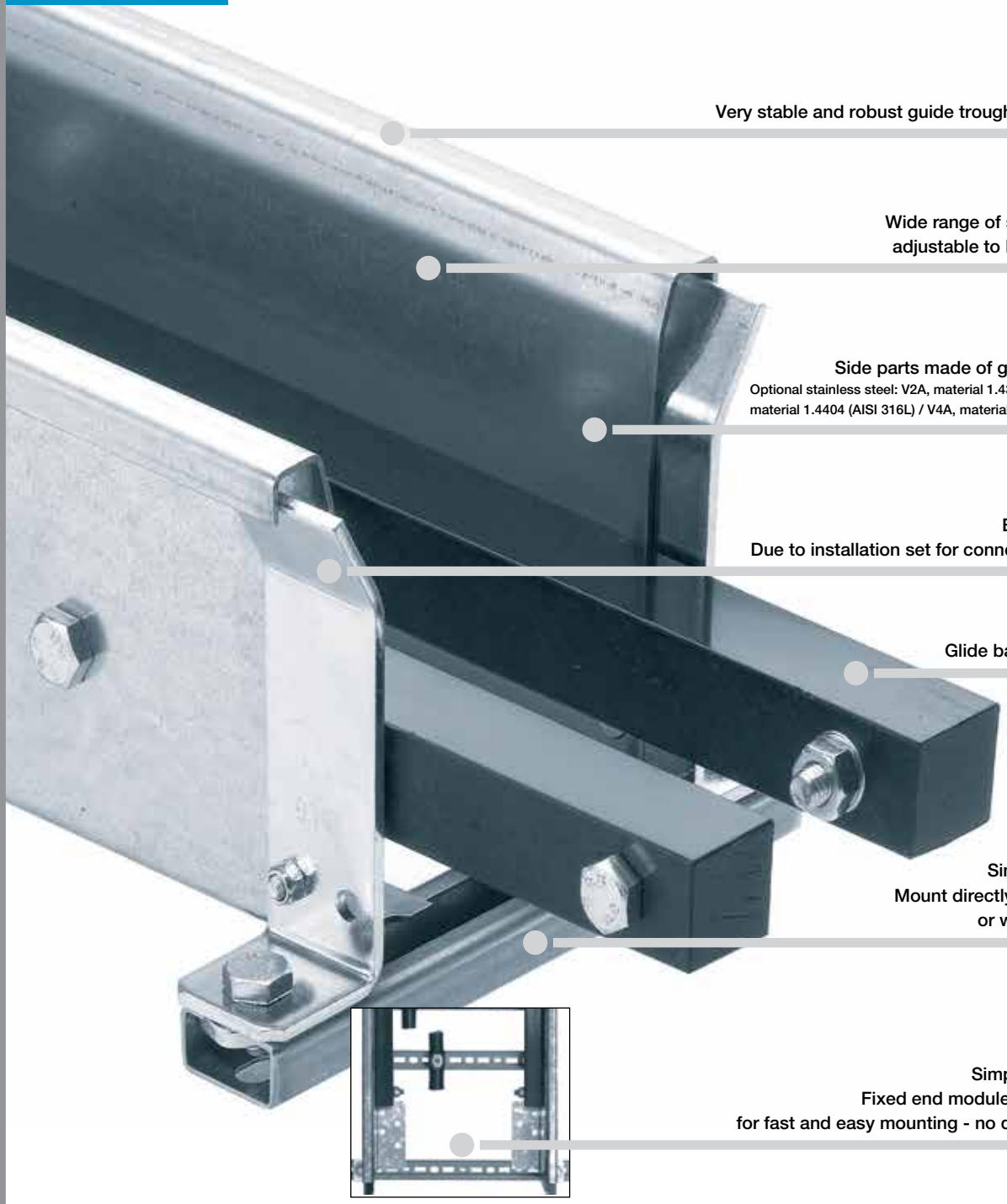




igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



# Guide Trough Systems
# Steel Guide Trough



**Heavy-Duty:**
Very stable and robust guide trough made of steel

**Large offering:**
Wide range of sizes available, adjustable to E-Chain® width

**Resistant:**
Side parts made of galvanized steel
Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)

**Easy assembly:**
Due to installation set for connecting sections

**Low friction:**
Glide bars made of PE

**Simple fastening:**
Mount directly to the ground or with profile rails

**Simple connection:**
Fixed end module (add-on item), for fast and easy mounting - no drilling required

# Very stable and rugged for Heavy-Duty applications - Steel guide trough

If the igus® installation sets are used, the guide troughs are particularly easy to assemble. All steel guide troughs are constructed according to the same basic principle. On the following pages, you will find information about dimensions, weights and accessories according to the trough size. All sizes use a common profile rail on which the guide parts are assembled. The assembly brackets used vary in height only.

**Installation Guide-PDF with detailed assembly information ➤ www.igus.com/installation-guide-pdf**

# Guide Trough Systems
# Steel Guide Trough
# Overview - Sizes

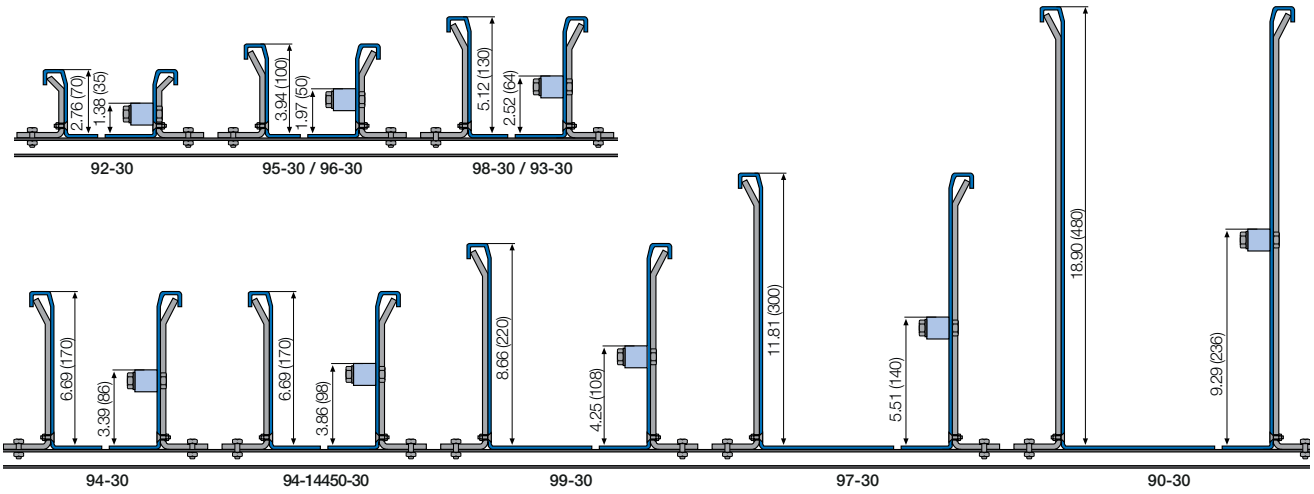
## Steel guide troughs

Very stable and rugged for Heavy-Duty applications

Standard in Galvanized Steel
Optional in stainless steel:
V2A, material 1.4301 (AISI 304)
V4A, material 1.4404 (AISI 316L)
V4A, material 1.4571 (AISI 316Ti)

| Trough Part No. | For E-Chain® Series | | | Outer trough height | Installation set* Part No. |
|---|---|---|---|---|---|
| | E2 Series | E4 Series | E6 Series | $H_{Ra}$ in. (mm) | |
| **92-30** | 2400/2500 | | E6-29/R6-29 | 2.76 (70) | **92.50** |
| | 200/240/250, 255 | | | | |
| **95-30** | 26/27/27i | | | 3.94 (100) | **95.50** |
| | 2600/2700 | | | | |
| | R58 | | | | |
| **96-30** | | E4-28/R4-28 | E6-35 | 3.94 (100) | **95.50** |
| | | 220 | | | |
| **98-30** | | E4-32/H4-32/R4-32 | E6-40/R6-40 | 5.12 (130) | **93.50** |
| | | 280/290/R770 | | | |
| | | 2828/2928/R7728 | | | |
| **93-30** | 3400/3500 | E4-42/H4-42/R4-42 | E6-52/R6-52 | 5.12 (130) | **93.50** |
| | 340/350 | 380/390/R780 | | | |
| | R68 | 3838/3938/R7838 | | | |
| **94-30** | | E4-56/H4-56/R4-56 | E6-62 | 6.69 (170) | **94-50** |
| | | 400/410/R880 | | | |
| | | 4040/4140/R8840 | | | |
| | | 14040/14140/R18840 | | | |
| | | 14240/14340 | | | |
| **94-14550-30** | | 14550/14650/R19050 | | 6.69 (170) | **94-50** |
| **99-30** | | 15050/15150/R19850 | E6-80 | 8.66 (220) | **96-50** |
| | | 15250/15350 | | | |
| **97-30** | | E4-112/H4-112/R4-112 | | 11.81 (300) | **98.50** |
| | | 600/601/R608 | | | |
| | | 640, 1640/1608 | | | |
| **90-30** | | 800, 840 | | 18.90 (480) | **90.50** |

| One-Piece Steel Trough - Only for series 10, 15 and B15 - Galvanized Steel only | | |
|---|---|---|
| **91-10 - 91-71** [2] | 1.89 (48) | – |




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Steel Guide Trough - Components



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Internet: http://www.igus.com
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QuickSpec: http://www.igus.com/quickspec

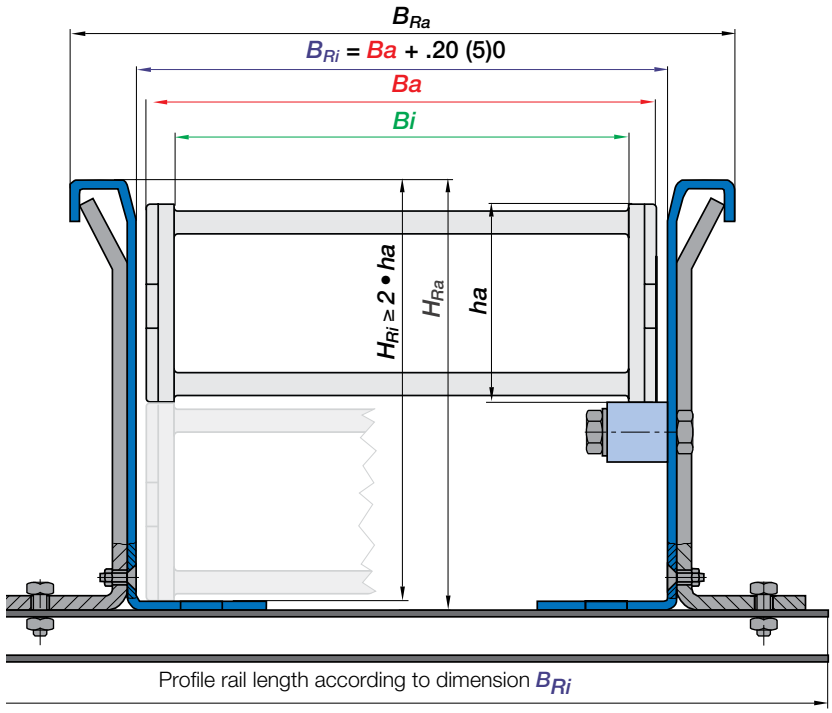
**Components**

- = Guide trough [1)]
- = Glide bar
- = Installation set
- = Profile rail [2)]

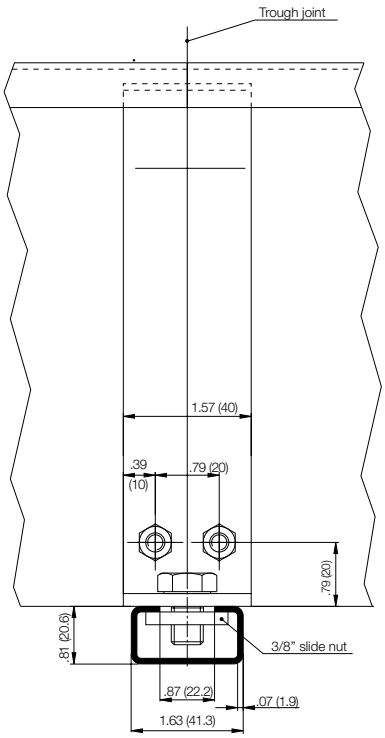
| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | Number of installation sets (left/right) |
| $n_{Ri}$ | = | Number of trough sets (left/right) |

**$H_{Ri}$ ≥ 2 x ha**

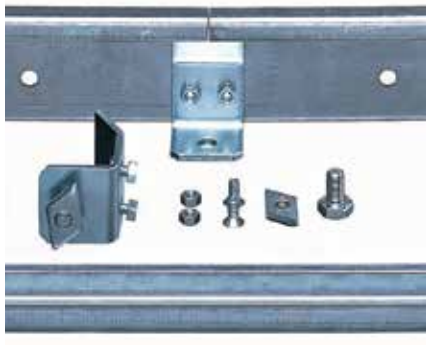
**$B_{Ri}$ = Ba + 5**




1) Guide trough side parts, galvanized steel. Optional stainless steel: V2A, material 1.4301 (AISI 304) / V4A, material 1.4404 (AISI 316L) / V4A, material 1.4571 (AISI 316Ti)
2) Profile rail also available in stainless steel V2A, material 1.4301 (AISI 304)




Side view of trough joint. All the dimensions, apart from the height, apply to all sizes.

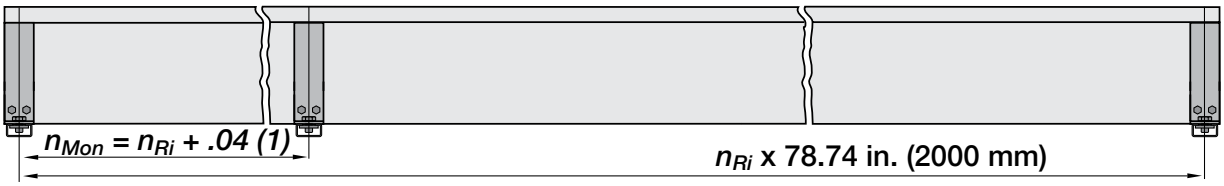


Installation set for joint and attachment surface connections, secure connection without misalignment and without welding.

## Steel Guide Trough - Configured according to your requirements

## Quick and easy assemble the right trough for your application

- Selection of the suitable guide trough according to the E-Chain® Series and E-Chain® width *Bi*
- Determine the feeding point of the cables
- Determine travel distance and thus the length of the required guide trough and the number of trough pieces. Standard length of a trough side plate: 78.7" (2000 mm). The length of the guide trough - for axial feeding - is calculated from half the travel length with and half the travel length without the glide bar
- Number and selection of the assembly kit
  **The quantity of the assembly kit is calculated from the number of the trough pieces + 1 kit:**




- The assembly kit matches the igus® profile rail option
- If you have opted for an E-Chain® with KMA mounting brackets, we offer you a fixed-end module for the quick and simple fastening of the E-Chain® in the trough without holes

**Installation Guide-PDF with detailed assembly information**
**➤ www.igus.com/installation-guide-pdf**

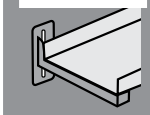
## Order example Based on Part No. 94-30

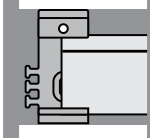
**Order example: Length of travel 98.4 ft. (30 m) -**
**Center mounted for Series E4-56-20-300-0 with $B_{Ri}$ = 239**

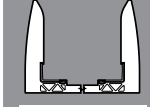
| | |
|---|---|
| Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar | |
| **Order text: 52.5 ft. (16 m) guide trough without glide bar (8 x 6.56 ft. (2 m) sections)** | **Part No. 94-30** |
| Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar | |
| **Order text: 52.5 ft. (16 m) guide trough with glide bar (8 x 6.56 ft. (2 m) sections)** | **Part No. 94-31** |
| Installation set “Basic” complete **(guide trough-sets + 1)** | |
| **Order text: 17 installation sets “Basic”** | **Part No. 94-50-350** |
| Module for the fixed end | |
| **Order text: 1 set** | **Part No. 94-80-01** |

**Calculation - travel center mounted:** Half travel length, rounded down to full 2 m sections = X m guide trough length without glide bars + X m guide trough length with glide bars + installation sets Basic (number of trough pieces + 1)



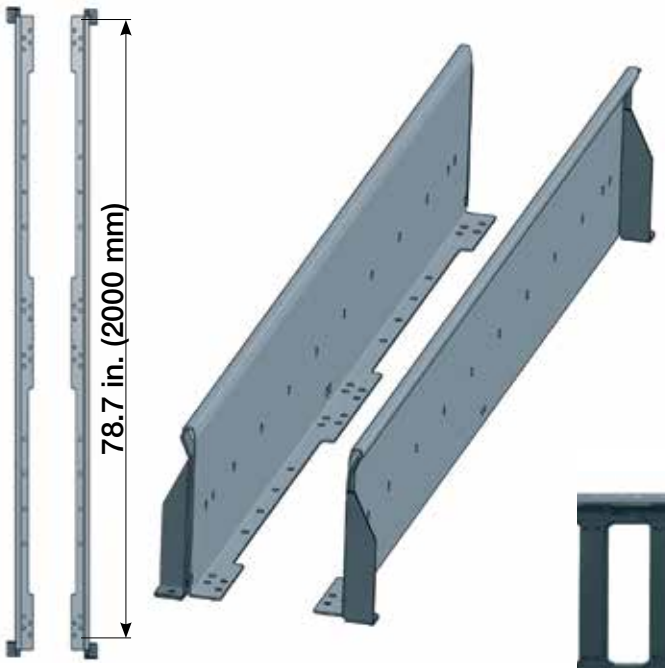






# Guide Trough Systems
# Steel Guide Trough - Fixed End Module

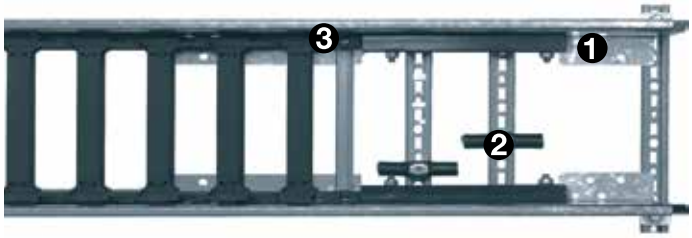
## Fixed end module - Quick and simple fastening onto the steel guide trough




Until now, the steel trough had to be modified on site to fit the mounting brackets at the stationary end of the E-Chain®. That is now history. With its prefabricated boreholes, the 78.7" (2,000 mm) long kit can be used for middle-feed, end-feed and opposed installation.

❶ Fast fixation of mounting brackets thanks to prefabricated boreholes
❷ Fast installation of profile rail for strain relief
❸ Fast bolting of glide bars

**Industries**: Power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants, etc.




| Part No. | For Steel Guide Troughs | For E-Chain® Series |
|---|---|---|
| 90-80-01* | 90-30 \| 90-31 | 800, 840 |
| 92-80-01* | 92-30 \| 92-31 | 2500, 255, E6-29/R6-29 |
| 93-80-01 | 93-30 \| 93-31 | 3500, R68, E4-42/H4-42/R4-42, E4-48L/R4-48L, E6-52/R6-52 |
| 94-80-01 | 94-30 \| 94-31 | E4-56/H4-56/R4-56, 14040/14140 /R18840, 14240/14340, E6-62 |
| 95-80-01* | 95-30 \| 95-31 | 2700 |
| 96-80-01 | 96-30 \| 96-31 | E4-80/H4-80/R4-80, 15050/5150/R19850, E6-80 |
| 97-80-01 | 97-30 \| 97-31 | E4-32/H4-32/R4-32, E4-38L/R4-38L, E6-40/R6-40 |
| 98-80-01 | 98-30 \| 98-31 | E4-112/H4-112/R4-112, 1640/R1608 |
| 99-80-01 | 99-30 \| 99-31 | E4-28/R4-28, E6-35 |
| 94-14550-80-01* | 94-14550-30 \| 94-14550-31 | 14550/14650/R19050 |

*Available upon request, please consult igus® for delivery time!

Fxed end module - length 78.7 in. (2000 mm)

igus® E-Chain System®
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email: sales@igus.com
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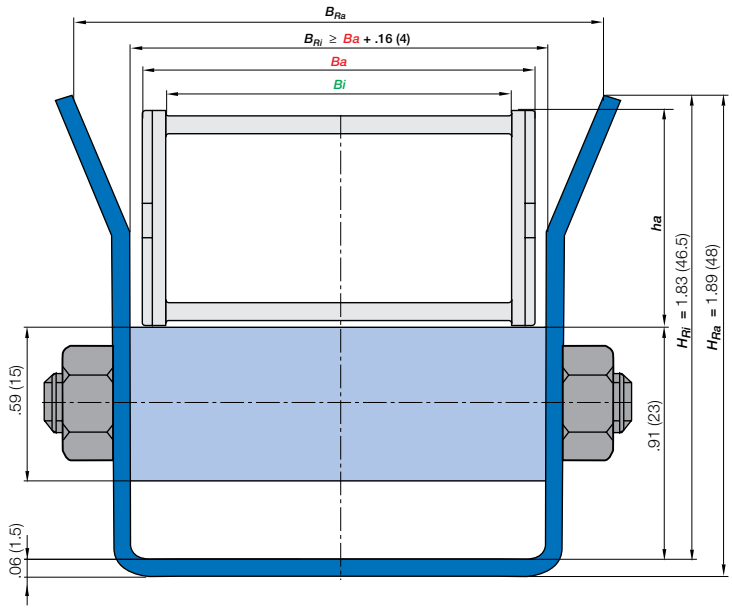
# Guide Trough Systems
# Steel Guide Troughs - One-Piece - U-Shaped
# Special solutions for Series 10, 15 and B15



One-piece guide troughs made of steel are available for the following Energy Chains®: Series 10, 15 and B15. These guide troughs are available from stock for outer chain widths up to 2.36 in. (60 mm). For wider E-Chains® and Tubes, special solutions are possible with short lead times.
No installation sets are required for these trough sizes since the guide troughs consist of a one-piece U-profile. The joint connection with this type of guide trough is specified individually for every application.

**For the following Series**

| System E2 Series: |
|---|
| ● 10 |
| ● B15 |
| **System Zipper Series:** |
| ● 15 |




*Ba* = Outer E-Chain® width
*Bi* = Inner E-Chain® width
*ha* = E-Chain® outer height
$H_{Ri}$ = Inner trough height
$H_{Ra}$ = Outer trough height
$B_{Ri}$ = Inner trough width
$B_{Ra}$ = Outer trough width

**Dimensions Guide troughs 91-10 — 91-71**

| For Series | Part No. | $B_{Ra}$ in. | $B_{Ra}$ (mm) | $B_{Ri}$ in. | $B_{Ri}$ (mm) | Weight lbs/ft | Weight (kg/m) |
|---|---|---|---|---|---|---|---|
| **10-015/15-015/B15-015** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-10** | 1.59 | (40.5) | 1.18 | (30) | 1.01 | (1.50) |
| Glide bar 6.56 ft. (2m section) | **91-11** | 1.59 | (40.5) | 1.18 | (30) | .30 | (.45) |
| **10-025/15-025/B15-025** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-20** | 1.99 | (50.5) | 1.57 | (40) | 1.11 | (1.65) |
| Glide bar 6.56 ft. (2m section) | **91-21** | 1.99 | (50.5) | 1.57 | (40) | .38 | (.57) |
| **10-038/15-038/B15-038** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-30** | 2.46 | (62.5) | 2.05 | (52) | 1.21 | (1.80) |
| Glide bar 6.56 ft. (2m section) | **91-31** | 2.46 | (62.5) | 2.05 | (52) | .46 | (.68) |
| **10-050/15-050/B15-050** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-40** | 2.85 | (72.5) | 2.44 | (62) | 1.28 | (1.90) |
| Glide bar 6.56 ft. (2m section) | **91-41** | 2.85 | (72.5) | 2.44 | (62) | .61 | (.91) |
| **10-5/15-5/B15-5** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-50** | 3.60 | (91.5) | 3.19 | (81) | 1.52 | (2.26) |
| Glide bar 6.56 ft. (2m section) | **91-51** | 3.60 | (91.5) | 3.19 | (81) | .84 | (1.25) |
| **10-6/15-6/B15-6** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-60** | 4.27 | (108.5) | 3.86 | (98) | 1.83 | (2.72) |
| Glide bar 6.56 ft. (2m section) | **91-61** | 4.27 | (108.5) | 3.86 | (98) | .91 | (1.35) |
| **10-7/15-7/B15-7** | | | | | | | |
| Trough **without** glide bar 6.56 ft. (2m section) | **91-70** | 5.06 | (128.5) | 4.65 | (118) | 2.13 | (3.17) |
| Glide bar 6.56 ft. (2m section) | **91-71** | 5.06 | (128.5) | 4.65 | (118) | 1.14 | (1.70) |

**Trough material in general: St 1203 galvanized**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guide Trough Systems
# Steel Guide Troughs

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Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



For the following Series

**System E2/000 Series:**
- 2400/2500
- 255

**System E2 Series:**
- 200/240/250

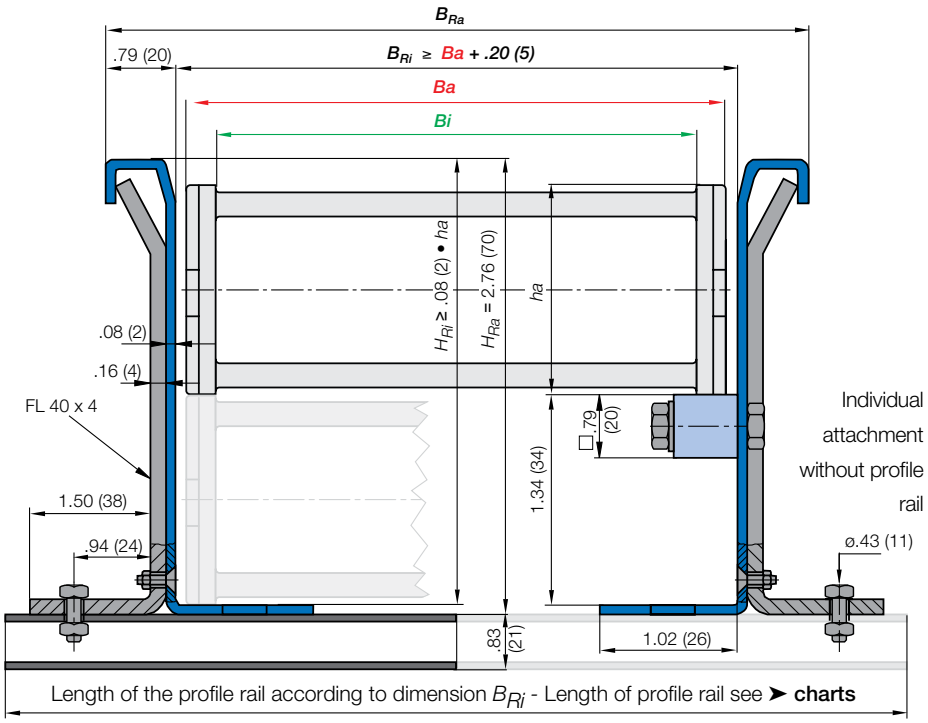
**System E6 Series:**
- E6-29/R6-29

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

## Part No. **92-30** - Trough Height: 2.76 in. (70 mm)



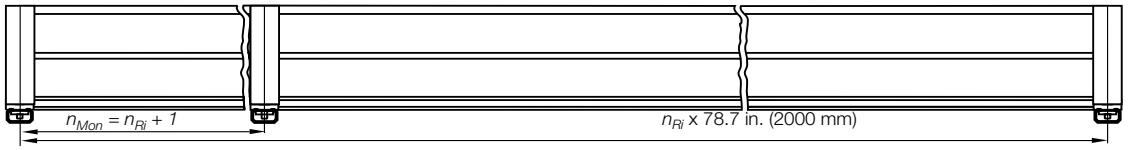

## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **92-30** | **19.85** |
| 1 Installation set “Basic” **with** profile rail | **92-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **92-50** | **.84** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **92-01** | **4.52** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft.** |
| 1 Clamping brackets, 2 pcs | **92-51** | **.31** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs. | **92-21** | **1.21** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 92-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### 2400/2500

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -02 | 1.81 (46) | * |
| -03 | 2.32 (59) | 92-50-175 |
| -05 | 3.07 (78) | 92-50-200 |
| -07 | 3.86 (98) | 92-50-225 |
| -09 | 4.33 (110) | 92-50-225 |
| -10 | 4.88 (124) | 92-50-250 |
| -12 | 5.75 (146) | 92-50-275 |

### 200/240/250

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -02 | 1.81 (46) | * |
| -03 | 2.32 (59) | 92-50-175 |
| -05 | 3.07 (78) | 92-50-175 |
| -07 | 3.86 (98) | 92-50-200 |
| -09 | 4.37 (111) | 92-50-250 |
| -10 | 4.88 (124) | 92-50-250 |
| -12 | 5.75 (146) | 92-50-300 |

*upon request

### E6-29

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -030 | 2.01 (51) | * |
| -040 | 2.40 (61) | 92-50-175 |
| -050 | 2.80 (71) | 92-50-200 |
| -060 | 3.19 (81) | 92-50-200 |
| -070 | 3.58 (91) | 92-50-200 |
| -080 | 3.98 (101) | 92-50-225 |
| -090 | 4.37 (111) | 92-50-225 |
| -100 | 4.76 (121) | 92-50-250 |
| -110 | 5.16 (131) | 92-50-250 |
| -120 | 5.55 (141) | 92-50-250 |

*upon request

### R6-29

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -030 | 2.01 (51) | * |
| -050 | 2.80 (71) | 92-50-200 |
| -060 | 3.19 (81) | 92-50-200 |
| -080 | 3.98 (101) | 92-50-225 |
| -110 | 5.16 (131) | 92-50-250 |
| -120 | 5.55 (141) | 92-50-250 |

*upon request

### 255

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -03 | 2.32 (59) | 92-50-175 |
| -05 | 3.07 (78) | 92-50-200 |
| -07 | 3.86 (98) | 92-50-225 |
| -10 | 4.88 (124) | 92-50-250 |

igus® steel guide trough used in a robotics application

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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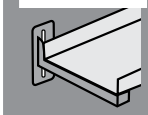

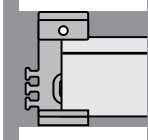

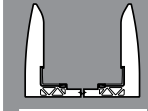

# Guide Trough Systems
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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



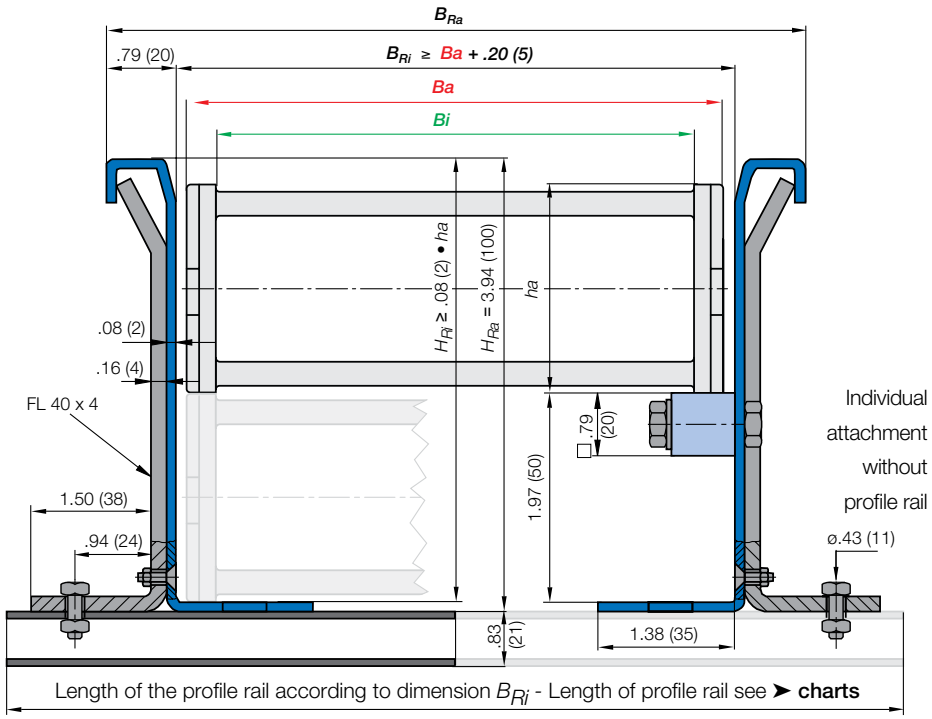
**For the following Series**

**System E2/000 Series:**
- 2600/2700

**System E2 Series:**
- 26/27/27I

**System E2 Tube Series:**
- R58

## Part No. **95-30** - Trough Height: 3.94 in. (100 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

● = Guide trough
● = Glide bar
● = Installation set “Basic”
● = profile rail

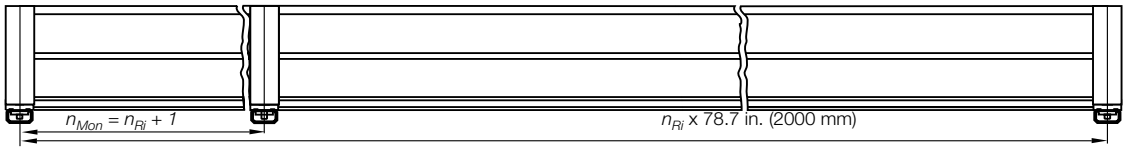
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **95-30** | **23.81** |
| 1 Installation set “Basic” **with** profile rail | **95-50-___** | |
| 1 Installation set “Basic” **without** profile rail | **95-50** | **1.01** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **92-01** | **4.52** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-___** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **95-51** | **.40** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **92-21** | **1.21** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

**26/27/27i**

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 2.80 | (71) | 95-50-200 |
| -07 | 3.78 | (96) | 95-50-200 |
| -10 | 4.76 | (121) | 95-50-250 |
| -12 | 5.75 | (146) | 95-50-250 |
| -15 | 6.73 | (171) | 95-50-300 |
| -17 | 7.83 | (199) | 95-50-300 |
| -20 | 8.82 | (224) | 95-50-350 |

**2600/2700**

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 2.80 | (71) | 95-50-200 |
| -06 | 3.39 | (86) | 95-50-200 |
| -07 | 3.78 | (96) | 95-50-225 |
| -09 | 4.37 | (111) | 95-50-225 |
| -10 | 4.76 | (121) | 95-50-250 |
| -12 | 5.75 | (146) | 95-50-275 |
| -15 | 6.73 | (171) | 95-50-300 |
| -17 | 7.83 | (199) | 95-50-300 |

**R58**

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -050 | 2.80 | (71) | 95-50-200 |
| -075 | 3.78 | (96) | 95-50-225 |
| -100 | 4.76 | (121) | 95-50-250 |
| -125 | 5.75 | (146) | 95-50-275 |
| -150 | 6.73 | (171) | 95-50-300 |
| -175 | 7.72 | (196) | 95-50-325 |
| -200 | 8.70 | (221) | 95-50-350 |

igus® steel guide trough used in a shelf conveyor application, Series E2/000 and Chainflex® cables

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Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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# Guide Trough Systems
# Steel Guide Troughs



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QuickSpec: http://www.igus.com/quickspec

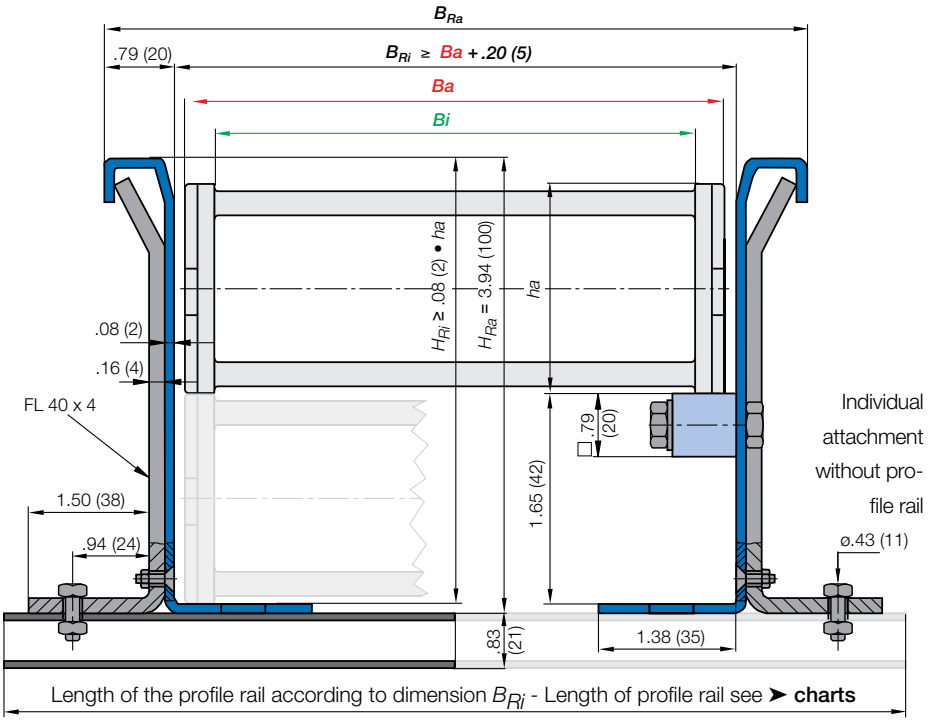


**For the following Series**

**System E4 Series:**
- 220/R760
- E6-35

**System E4-1 Series**
- E4-28/R4-28

## Part No. **96-30** - Trough Height: 3.94 in. (100 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

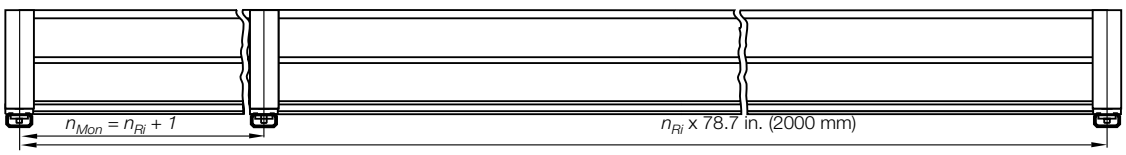
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **96-30** | **23.81** |
| 1 Installation set “Basic” **with** profile rail | **95-50-___** | |
| 1 Installation set “Basic” **without** profile rail | **96-50** | **1.01** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **92-01** | **4.52** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-___** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **95-51** | **.40** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **92-21** | **1.21** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 95-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

**220/R760**
**E4-28/R4-28**

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -040 | 2.56 (65) | * |
| -050 | 2.95 (75) | 95-50-200 |
| -062 | 3.43 (87) | 95-50-200 |
| -070 | 3.74 (95) | 95-50-200 |
| -075 | 3.94 (100) | 95-50-225 |
| -100 | 4.92 (125) | 95-50-250 |
| -125 | 5.91 (150) | 95-50-275 |
| -150 | 6.89 (175) | 95-50-300 |
| -175 | 7.87 (200) | 95-50-325 |
| -200 | 8.86 (225) | 95-50-350 |
| -225 | 9.84 (250) | 95-50-375 |
| -250 | 10.83 (275) | 95-50-400 |
| -275 | 11.81 (300) | 95-50-425 |
| -300 | 12.80 (325) | 95-50-450 |

*upon request

**E6-35**

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -030 | 2.01 (55) | * |
| -040 | 2.40 (65) | * |
| -050 | 2.80 (75) | 95-50-200 |
| -060 | 3.19 (85) | 95-50-200 |
| -070 | 3.58 (95) | 95-50-200 |
| -080 | 3.98 (105) | 95-50-225 |
| -090 | 4.37 (115) | 95-50-225 |
| -100 | 4.76 (125) | 95-50-250 |
| -110 | 5.16 (135) | 95-50-250 |
| -120 | 5.55 (145) | 95-50-250 |

*upon request

Lightweight and high stability: igus® E-Chain® tames stiff hydraulic hoses

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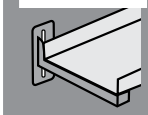
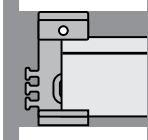
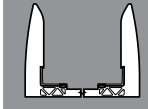
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



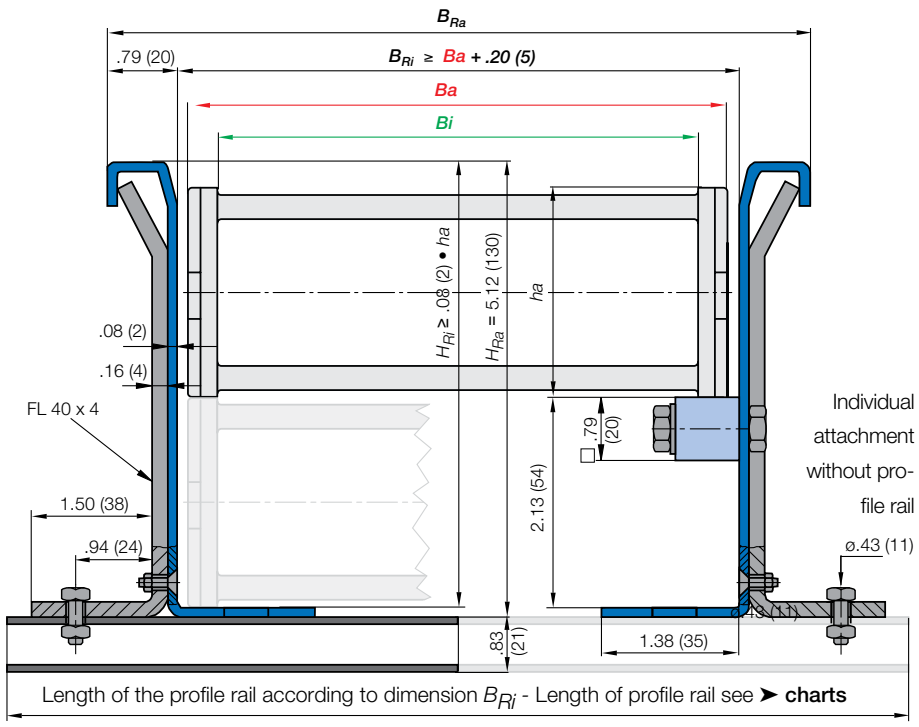
**For the following Series**

**System E4 Series:**
- 280/290/R770
- 2828/2928/R7728

**System E6 Series:**
- E6-40/R6-40

**System E4-1 Series**
- E4-32/H4-320/R4-32

## Part No. **98-30** - Trough Height: 5.12 in. (130 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

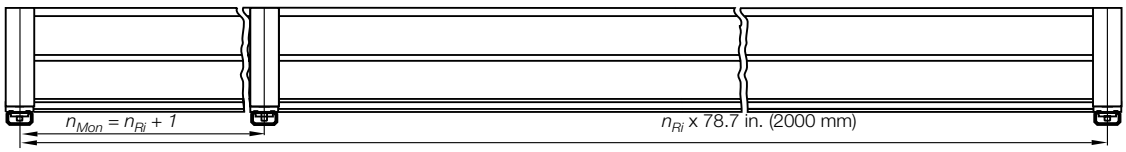
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **98-30** | **28.22** |
| 1 Installation set “Basic” **with** profile rail | **93-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **93-50** | **1.19** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **92-01** | **4.52** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **93-51** | **.49** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **1.21** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### 280/290/R770 E4-32/H4-32/R4-32

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.15 | (78) | 93-50-200 |
| -06 | 3.86 | (96) | 93-50-225 |
| -07 | 4.13 | (103) | 93-50-225 |
| -087 | 4.61 | (115) | 93-50-225 |
| -10 | 5.12 | (128) | 93-50-250 |
| -11 | 5.43 | (136) | 93-50-250 |
| -112 | 5.59 | (141) | 93-50-250 |
| -12 | 6.10 | (153) | 93-50-275 |
| -137 | 6.57 | (166) | 93-50-275 |
| -15 | 7.09 | (178) | 93-50-300 |
| -162 | 7.56 | (191) | 93-50-300 |
| -17 | 7.80 | (196) | 93-50-325 |
| -18 | 8.07 | (203) | 93-50-325 |
| -187 | 8.54 | (216) | 93-50-325 |
| -20 | 9.06 | (228) | 93-50-350 |
| -212 | 9.53 | (241) | 93-50-350 |
| -23 | 10.04 | (253) | 93-50-375 |
| -237 | 10.51 | (266) | 93-50-375 |
| -25 | 11.02 | (278) | 93-50-400 |
| -262 | 11.50 | (291) | 93-50-400 |
| -28 | 12.01 | (303) | 93-50-425 |
| -29 | 12.48 | (316) | 93-50-425 |
| -30 | 12.99 | (328) | 93-50-450 |
| -312 | 13.46 | (341) | 93-50-450 |
| -325 | 13.98 | (353) | 93-50-475 |
| -337 | 14.45 | (366) | 93-50-475 |
| -350 | 14.96 | (378) | 93-50-500 |
| -362 | 15.43 | (391) | 93-50-500 |
| -375 | 15.94 | (403) | 93-50-525 |
| -387 | 16.42 | (416) | 93-50-525 |
| -400 | 16-93 | (428) | 93-50-550 |

### 2828/2928/R7728

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.11 | (79) | 93-50-200 |
| -06 | 3.82 | (97) | 93-50-225 |
| -07 | 4.09 | (104) | 93-50-225 |
| -087 | 4.57 | (116) | 93-50-225 |
| -10 | 5.08 | (129) | 93-50-250 |
| -11 | 5.39 | (137) | 93-50-250 |
| -112 | 5.59 | (142) | 93-50-250 |
| -12 | 6.06 | (154) | 93-50-275 |
| -137 | 6.57 | (167) | 93-50-275 |
| -15 | 7.05 | (179) | 93-50-300 |
| -162 | 7.56 | (192) | 93-50-300 |
| -17 | 7.76 | (197) | 93-50-325 |
| -18 | 8.03 | (204) | 93-50-325 |
| -187 | 8.54 | (217) | 93-50-325 |
| -20 | 9.02 | (229) | 93-50-350 |
| -212 | 9.53 | (242) | 93-50-350 |
| -23 | 10.00 | (254) | 93-50-375 |
| -237 | 10.51 | (267) | 93-50-375 |
| -25 | 10.98 | (279) | 93-50-400 |
| -262 | 11.50 | (292) | 93-50-400 |
| -28 | 11.97 | (304) | 93-50-425 |
| -29 | 12.48 | (317) | 93-50-425 |
| -30 | 12.95 | (329) | 93-50-450 |
| -312 | 13.46 | (342) | 93-50-450 |
| -325 | 13.94 | (354) | 93-50-475 |
| -337 | 14.45 | (367) | 93-50-475 |
| -350 | 14.92 | (379) | 93-50-500 |
| -362 | 15.43 | (392) | 93-50-500 |
| -375 | 15.91 | (404) | 93-50-525 |
| -387 | 16.42 | (417) | 93-50-525 |
| -400 | 16.89 | (429) | 93-50-550 |

### E6-40

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -040 | 2.56 | (65) | * |
| -050 | 2.95 | (75) | 93-50-200 |
| -062 | 3.43 | (87) | 93-50-200 |
| -070 | 3.74 | (95) | 93-50-225 |
| -075 | 3.94 | (100) | 93-50-225 |
| -100 | 4.92 | (125) | 93-50-250 |
| -125 | 5.91 | (150) | 93-50-275 |
| -150 | 6.89 | (175) | 93-50-300 |
| -175 | 7.87 | (200) | 93-50-325 |
| -200 | 8.86 | (225) | 93-50-350 |
| -225 | 9.84 | (250) | 93-50-375 |
| -250 | 10.83 | (275) | 93-50-400 |
| -275 | 11.81 | (300) | 93-50-425 |
| -300 | 12.80 | (325) | 93-50-450 |

*upon request

### E4-38L/R4-38L

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -050 | 2.80 | (71) | 93-50-200 |
| -062 | 3.27 | (83) | 93-50-200 |
| -075 | 3.78 | (96) | 93-50-225 |
| -087 | 4.25 | (108) | 93-50-225 |
| -100 | 4.76 | (121) | 93-50-250 |
| -112 | 5.24 | (133) | 93-50-250 |
| -125 | 5.75 | (146) | 93-50-275 |
| -137 | 6.22 | (158) | 93-50-275 |
| -150 | 6.73 | (171) | 93-50-300 |
| -162 | 7.21 | (183) | 93-50-300 |
| -175 | 7.72 | (196) | 93-50-325 |
| -200 | 8.70 | (221) | 93-50-350 |
| -250 | 10.67 | (271) | 93-50-400 |

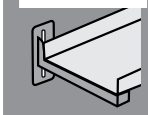
### R6-40

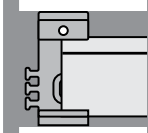
| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -062 | 3.43 | (87) | 93-50-200 |
| -075 | 3.94 | (100) | 93-50-225 |

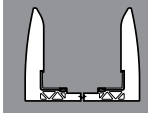
igus® System E4 with extension link at a ship loader for the coal unloading.
Travel 344.5 ft.(105 m), speed 787 ft/min (240 m/min), load 35.6 lbs/ft (53 kg/m)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









# Guide Trough Systems
# Steel Guide Troughs

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

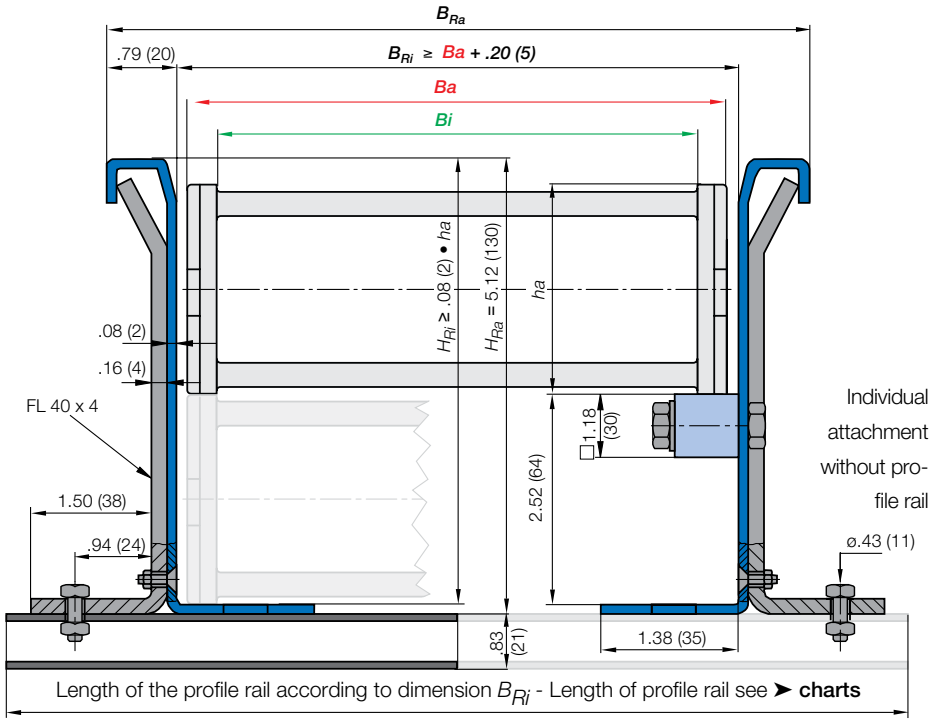


For the following Series

| |
|---|
| **System E2/000 Series:** |
| ● 3400/3500 |
| **System E2 Series:** |
| ● 340/350 |
| **System E2 Tube Series:** |
| ● R68 |
| **System E4 Series:** |
| ● 380/390 |
| ● 3838/3938/R7838 |
| **System E6 Series:** |
| ● E6-52/R6-52 |
| **System E4-1 Series** |
| ● E4-42/H4-42/R4-42 |
| **System E4-1 Light Series:** |
| ● E4-38L/R4-38L |
| ● 255 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |
| ! | | $H_{Ri} \geq 2 \bullet ha$<br>$B_{Ri} \geq Ba + 5$ |
| ● | = | Guide trough |
| ● | = | Glide bar |
| ● | = | Installation set “Basic” |
| ● | = | profile rail |

## Part No. **93-30** - Trough Height: 5.12 in. (130 mm)



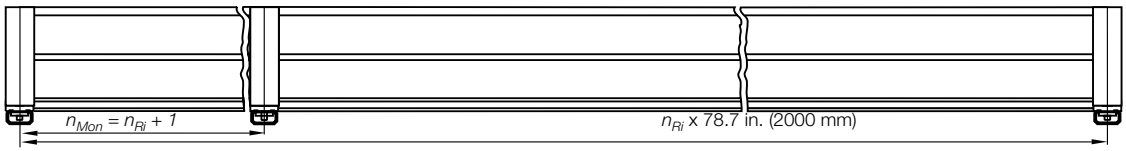

## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **93-30** | **28.22** |
| 1 Installation set “Basic” **with** profile rail | **93-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **93-50** | **1.19** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **93-01** | **9.95** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft.** |
| 1 Clamping brackets, 2 pcs | **93-51** | **.49** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **2.67** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 93-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### 3400/3500

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -075 | 3.94 (100) | 93-50-225 |
| -115 | 5.51 (140) | 93-50-250 |
| -175 | 7.87 (200) | 93-50-300 |

### 340/350

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -050 | 2.95 (75) | 93-50-150 |
| -075 | 3.94 (100) | 93-50-200 |
| -100 | 4.92 (125) | 93-50-250 |
| -115 | 5.51 (140) | 93-50-250 |
| -125 | 5.91 (150) | 93-50-300 |
| -150 | 6.89 (175) | 93-50-300 |
| -175 | 7.87 (200) | 93-50-300 |
| -200 | 8.86 (225) | 93-50-350 |
| -225 | 9.84 (250) | 93-50-350 |
| -250 | 10.83 (275) | 93-50-400 |

### R68

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -050 | 2.87 (73) | 93-50-200 |
| -075 | 3.86 (98) | 93-50-225 |
| -100 | 4.84 (123) | 93-50-250 |
| -115 | 5.43 (138) | 93-50-250 |
| -125 | 5.83 (148) | 93-50-275 |
| -150 | 6.81 (173) | 93-50-300 |
| -175 | 7.80 (198) | 93-50-325 |
| -200 | 8.78 (223) | 93-50-350 |
| -225 | 9.76 (248) | 93-50-375 |
| -250 | 10.75 (273) | 93-50-400 |

### 380/390/R780 E4-42/H4-42/R4-42

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.19 (81) | 93-50-200 |
| -06 | 3.90 (99) | 93-50-225 |
| -07 | 4.17 (106) | 93-50-225 |
| -087 | 4.69 (119) | 93-50-250 |
| -10 | 5.16 (131) | 93-50-250 |
| -11 | 5.47 (139) | 93-50-250 |
| -112 | 5.67 (144) | 93-50-275 |
| -12 | 6.14 (156) | 93-50-275 |
| -137 | 6.65 (169) | 93-50-300 |
| -15 | 7.12 (181) | 93-50-300 |
| -162 | 7.64 (194) | 93-50-325 |
| -17 | 7.83 (199) | 93-50-325 |
| -18 | 8.11 (206) | 93-50-325 |
| -187 | 8.62 (219) | 93-50-350 |
| -20 | 9.09 (231) | 93-50-350 |
| -212 | 9.61 (244) | 93-50-375 |
| -23 | 10.08 (256) | 93-50-375 |
| -237 | 10.59 (269) | 93-50-400 |
| -25 | 11.06 (281) | 93-50-400 |
| -262 | 11.57 (294) | 93-50-425 |
| -28 | 12.05 (306) | 93-50-425 |
| -29 | 12.56 (319) | 93-50-450 |
| -30 | 13.03 (331) | 93-50-450 |
| -312 | 13.54 (344) | 93-50-475 |
| -325 | 14.01 (356) | 93-50-475 |
| -337 | 14.52 (369) | 93-50-500 |
| -350 | 15.00 (381) | 93-50-500 |
| -362 | 15.51 (394) | 93-50-525 |
| -375 | 16.02 (407) | 93-50-525 |
| -387 | 16.50 (419) | 93-50-550 |
| -400 | 16.97 (431) | 93-50-550 |

### E4-38L/R4-38L

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -050 | 2.95 (75) | 93-50-200 |
| -062 | 3.43 (87) | 93-50-200 |
| -075 | 3.94 (100) | 93-50-225 |
| -087 | 4.41 (112) | 93-50-225 |
| -100 | 4.92 (125) | 93-50-250 |
| -125 | 5.91 (150) | 93-50-275 |
| -150 | 6.89 (175) | 93-50-300 |
| -175 | 7.87 (200) | 93-50-325 |
| -200 | 8.86 (225) | 93-50-350 |

### 3838/3938/R7838

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.23 (82) | 93-50-200 |
| -06 | 3.94 (100) | 93-50-225 |
| -07 | 4.21 (107) | 93-50-225 |
| -087 | 4.72 (120) | 93-50-250 |
| -10 | 5.20 (132) | 93-50-250 |
| -11 | 5.51 (140) | 93-50-250 |
| -112 | 5.71 (145) | 93-50-275 |
| -12 | 6.18 (157) | 93-50-275 |
| -137 | 6.69 (170) | 93-50-300 |
| -15 | 7.16 (182) | 93-50-300 |
| -162 | 7.68 (195) | 93-50-325 |
| -17 | 7.87 (200) | 93-50-325 |
| -18 | 8.15 (207) | 93-50-325 |
| -187 | 8.66 (220) | 93-50-350 |
| -20 | 9.13 (232) | 93-50-350 |
| -212 | 9.65 (245) | 93-50-375 |
| -23 | 10.12 (257) | 93-50-375 |
| -237 | 10.63 (270) | 93-50-400 |
| -25 | 11.10 (282) | 93-50-400 |
| -262 | 11.61 (295) | 93-50-425 |
| -28 | 12.09 (307) | 93-50-425 |
| -29 | 12.60 (320) | 93-50-450 |
| -30 | 13.07 (332) | 93-50-450 |
| -312 | 13.58 (345) | 93-50-475 |
| -325 | 14.06 (357) | 93-50-475 |
| -337 | 14.57 (370) | 93-50-500 |
| -350 | 15.04 (382) | 93-50-500 |
| -362 | 15.55 (395) | 93-50-525 |
| -375 | 16.02 (407) | 93-50-525 |
| -387 | 16.53 (420) | 93-50-550 |
| -400 | 17.01 (432) | 93-50-550 |

### E6-52

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -040 | 2.72 (69) | * |
| -050 | 3.11 (79) | 93-50-200 |
| -075 | 4.09 (104) | 93-50-225 |
| -100 | 5.08 (129) | 93-50-250 |
| -125 | 6.06 (154) | 93-50-275 |
| -150 | 7.04 (179) | 93-50-300 |
| -175 | 8.03 (204) | 93-50-325 |
| -200 | 9.01 (229) | 93-50-350 |
| -225 | 10.00 (254) | 93-50-375 |
| -250 | 10.98 (279) | 93-50-400 |
| -275 | 11.97 (304) | 93-50-425 |
| -300 | 12.95 (329) | 93-50-450 |

*upon request

### R6-52

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -050 | 3.11 (79) | 93-50-200 |
| -075 | 4.09 (104) | 93-50-225 |
| -100 | 5.08 (129) | 93-50-250 |
| -125 | 6.06 (154) | 93-50-275 |
| -150 | 7.04 (179) | 93-50-300 |
| -175 | 8.03 (204) | 93-50-325 |

Travel up to 639.7 ft. (195 m) with the igus® System E4, safely guided in an igus® steel trough

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

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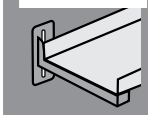
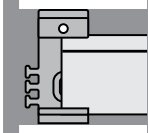
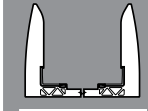






# Guide Trough Systems
# Steel Guide Troughs

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



For the following Series

**System E4 Series:**
- 400/410/R880
- 4040/4140/R8840
- 14040/14140/R18840
- 14240/14340

**System E6 Series:**
- E6-62

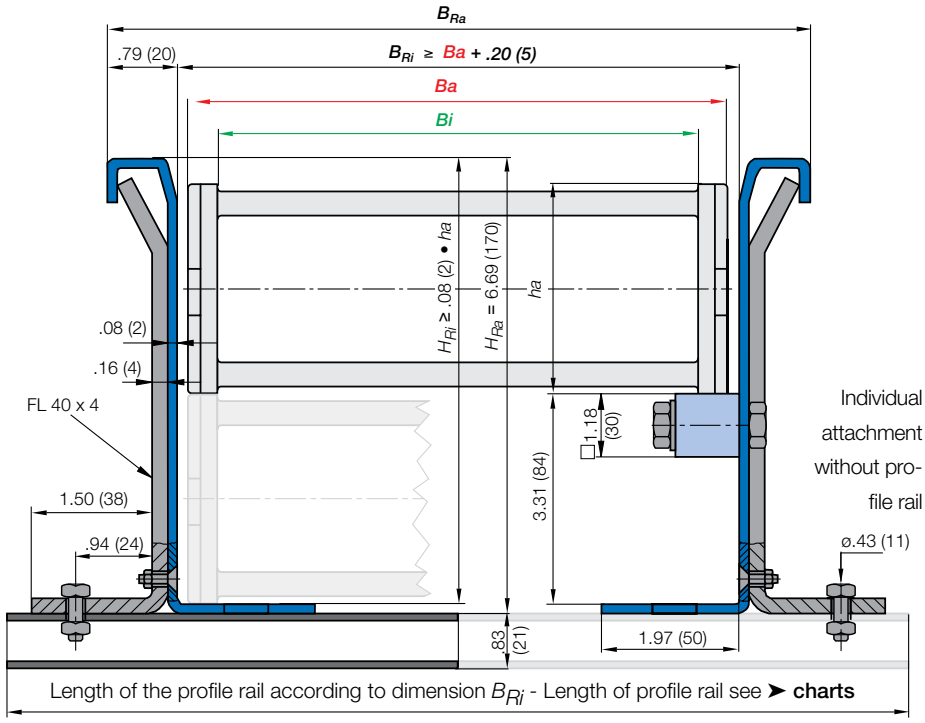
**System E4-1 Series**
- E4-56/H4-56/R4-56

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

## Part No. **94-30** - Trough Height: 6.69 in. (170 mm)



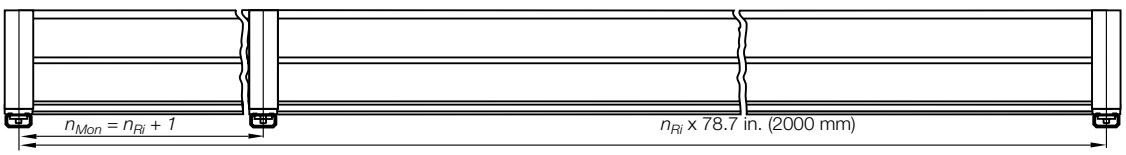

## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **94-30** | **37.04** |
| 1 Installation set “Basic” **with** profile rail | **94-50-___** | |
| 1 Installation set “Basic” **without** profile rail | **94-50** | **1.41** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **93-01** | **4.30** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-___** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **94-51** | **.60** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **2.65** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### 400/410/R880 4040/4140 E4-56/H4-56/R4-56

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.50 | (89) | * |
| -06 | 4.23 | (104) | 94-50-225 |
| -07 | 4.49 | (114) | 94-50-225 |
| -08 | 4.76 | (121) | 94-50-225 |
| -10 | 5.47 | (139) | 94-50-250 |
| -11 | 5.98 | (152) | 94-50-275 |
| -12 | 6.46 | (164) | 94-50-275 |
| -13 | 6.97 | (177) | 94-50-300 |
| -15 | 7.44 | (189) | 94-50-300 |
| -16 | 7.95 | (202) | 94-50-325 |
| -17 | 8.42 | (214) | 94-50-325 |
| -18 | 8.94 | (227) | 94-50-350 |
| -20 | 9.41 | (239) | 94-50-350 |
| -21 | 9.92 | (252) | 94-50-375 |
| -22 | 10.39 | (264) | 94-50-375 |
| -23 | 10.91 | (277) | 94-50-400 |
| -25 | 11.38 | (289) | 94-50-400 |
| -26 | 11.89 | (302) | 94-50-425 |
| -27 | 12.36 | (314) | 94-50-425 |
| -28 | 12.87 | (327) | 94-50-450 |
| -30 | 13.35 | (339) | 94-50-450 |
| -31 | 13.86 | (352) | 94-50-475 |
| -32 | 14.33 | (364) | 94-50-475 |
| -33 | 14.84 | (377) | 94-50-500 |
| -35 | 15.31 | (389) | 94-50-500 |
| -36 | 15.82 | (402) | 94-50-525 |
| -37 | 16.30 | (414) | 94-50-525 |
| -38 | 16.81 | (427) | 94-50-550 |
| -40 | 17.28 | (439) | 94-50-550 |
| -41 | 17.79 | (452) | 94-50-575 |
| -42 | 18.27 | (464) | 94-50-575 |
| -43 | 18.78 | (477) | 94-50-600 |
| -45 | 19.25 | (489) | 94-50-600 |
| -46 | 19.76 | (502) | 94-50-625 |
| -47 | 20.24 | (514) | 94-50-625 |
| -48 | 20.75 | (527) | 94-50-650 |
| -50 | 21.22 | (539) | 94-50-650 |
| -51 | 21.73 | (552) | 94-50-675 |
| -52 | 22.20 | (564) | 94-50-675 |
| -53 | 22.72 | (577) | 94-50-700 |
| -55 | 23.19 | (589) | 94-50-700 |
| -60 | 25.28 | (639) | 94-50-750 |

### 14040/14140/R18840

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.19 | (81) | * |
| -06 | 3.78 | (96) | * |
| -07 | 4.17 | (106) | 94-50-225 |
| -10 | 5.16 | (131) | 94-50-250 |
| -11 | 5.63 | (143) | 94-50-275 |
| -12 | 6.14 | (156) | 94-50-275 |
| -13 | 6.61 | (168) | 94-50-300 |
| -15 | 7.13 | (181) | 94-50-300 |
| -16 | 7.60 | (193) | 94-50-325 |
| -17 | 8.11 | (206) | 94-50-325 |
| -18 | 8.58 | (218) | 94-50-350 |
| -20 | 9.09 | (231) | 94-50-350 |
| -21 | 9.57 | (243) | 94-50-375 |
| -22 | 10.08 | (256) | 94-50-375 |
| -23 | 10.55 | (268) | 94-50-400 |
| -25 | 11.06 | (281) | 94-50-400 |
| -26 | 11.54 | (293) | 94-50-425 |
| -27 | 12.05 | (306) | 94-50-425 |
| -28 | 12.52 | (318) | 94-50-450 |
| -30 | 13.03 | (331) | 94-50-450 |
| -31 | 13.50 | (343) | 94-50-475 |
| -32 | 14.02 | (356) | 94-50-475 |
| -33 | 14.49 | (368) | 94-50-500 |
| -35 | 15.00 | (381) | 94-50-500 |
| -36 | 15.47 | (393) | 94-50-525 |
| -37 | 15.98 | (406) | 94-50-525 |
| -38 | 16.46 | (418) | 94-50-550 |
| -40 | 16.97 | (431) | 94-50-550 |
| -41 | 17.44 | (443) | 94-50-575 |
| -42 | 17.95 | (456) | 94-50-575 |
| -43 | 18.43 | (468) | 94-50-600 |
| -45 | 18.94 | (481) | 94-50-600 |
| -46 | 19.41 | (493) | 94-50-625 |
| -47 | 19.92 | (506) | 94-50-625 |
| -48 | 20.59 | (518) | 94-50-650 |
| -50 | 20.91 | (531) | 94-50-650 |
| -51 | 21.38 | (543) | 94-50-675 |
| -52 | 21.89 | (556) | 94-50-675 |
| -53 | 22.36 | (568) | 94-50-700 |
| -55 | 22.87 | (581) | 94-50-700 |
| -60 | 24.84 | (631) | 94-50-750 |

### 14240/14340

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.19 | (81) | * |
| -06 | 3.90 | (99) | * |
| -07 | 4.17 | (106) | 94-50-225 |
| -087 | 4.65 | (118) | 94-50-250 |
| -10 | 5.16 | (131) | 94-50-250 |
| -11 | 5.47 | (139) | 94-50-250 |
| -112 | 5.63 | (143) | 94-50-275 |
| -12 | 6.14 | (156) | 94-50-275 |
| -137 | 6.61 | (168) | 94-50-300 |
| -15 | 7.12 | (181) | 94-50-300 |
| -162 | 7.60 | (193) | 94-50-325 |
| -17 | 7.83 | (199) | 94-50-325 |
| -18 | 8.11 | (206) | 94-50-325 |
| -187 | 8.58 | (218) | 94-50-350 |
| -20 | 9.09 | (231) | 94-50-350 |
| -212 | 9.57 | (243) | 94-50-375 |
| -23 | 10.08 | (256) | 94-50-375 |
| -237 | 10.55 | (268) | 94-50-400 |
| -25 | 11.06 | (281) | 94-50-400 |
| -262 | 11.54 | (293) | 94-50-425 |
| -28 | 12.05 | (306) | 94-50-425 |
| -29 | 12.52 | (318) | 94-50-450 |
| -30 | 13.03 | (331) | 94-50-450 |
| -312 | 13.50 | (343) | 94-50-475 |
| -325 | 14.02 | (356) | 94-50-475 |
| -337 | 14.49 | (368) | 94-50-500 |
| -350 | 15.00 | (381) | 94-50-500 |
| -362 | 15.47 | (393) | 94-50-525 |
| -375 | 15.98 | (406) | 94-50-525 |
| -387 | 16.46 | (418) | 94-50-550 |
| -400 | 16.97 | (431) | 94-50-550 |

### E6-62

| Width Index | $B_{Ri}$ in. | (mm) | Part No. Installation set |
|---|---|---|---|
| -05 | 3.58 | (91) | * |
| -06 | 4.29 | (109) | 94-50-225 |
| -07 | 4.57 | (116) | 94-50-225 |
| -087 | 5.04 | (128) | 94-50-250 |
| -10 | 5.55 | (141) | 94-50-250 |
| -11 | 5.87 | (149) | 94-50-275 |
| -112 | 6.02 | (153) | 94-50-275 |
| -12 | 6.54 | (165) | 94-50-275 |
| -137 | 7.01 | (178) | 94-50-300 |
| -15 | 7.52 | (191) | 94-50-300 |
| -162 | 7.99 | (203) | 94-50-325 |
| -17 | 8.23 | (209) | 94-50-325 |
| -18 | 8.50 | (216) | 94-50-325 |
| -187 | 8.98 | (228) | 94-50-350 |
| -20 | 9.49 | (241) | 94-50-350 |
| -212 | 9.96 | (253) | 94-50-375 |
| -23 | 10.47 | (266) | 94-50-375 |
| -237 | 10.95 | (278) | 94-50-400 |
| -25 | 11.46 | (291) | 94-50-400 |
| -262 | 11.93 | (303) | 94-50-425 |
| -28 | 12.44 | (316) | 94-50-425 |
| -29 | 12.91 | (328) | 94-50-450 |
| -30 | 13.43 | (341) | 94-50-450 |
| -312 | 13.90 | (353) | 94-50-475 |
| -325 | 14.41 | (366) | 94-50-475 |
| -337 | 14.88 | (378) | 94-50-500 |
| -350 | 15.39 | (391) | 94-50-500 |
| -362 | 15.87 | (403) | 94-50-525 |
| -375 | 16.38 | (416) | 94-50-525 |
| -387 | 16.85 | (428) | 94-50-550 |
| -400 | 17.36 | (441) | 94-50-550 |

*upon request

590.5 ft. (180 m) travel, 20.2 lbs/ft (30 kg/m) fill weight.
Two igus® E4 Rol E-Chains®

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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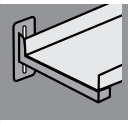
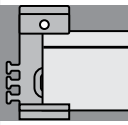
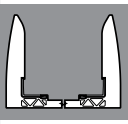






# Guide Trough Systems
# Steel Guide Troughs

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

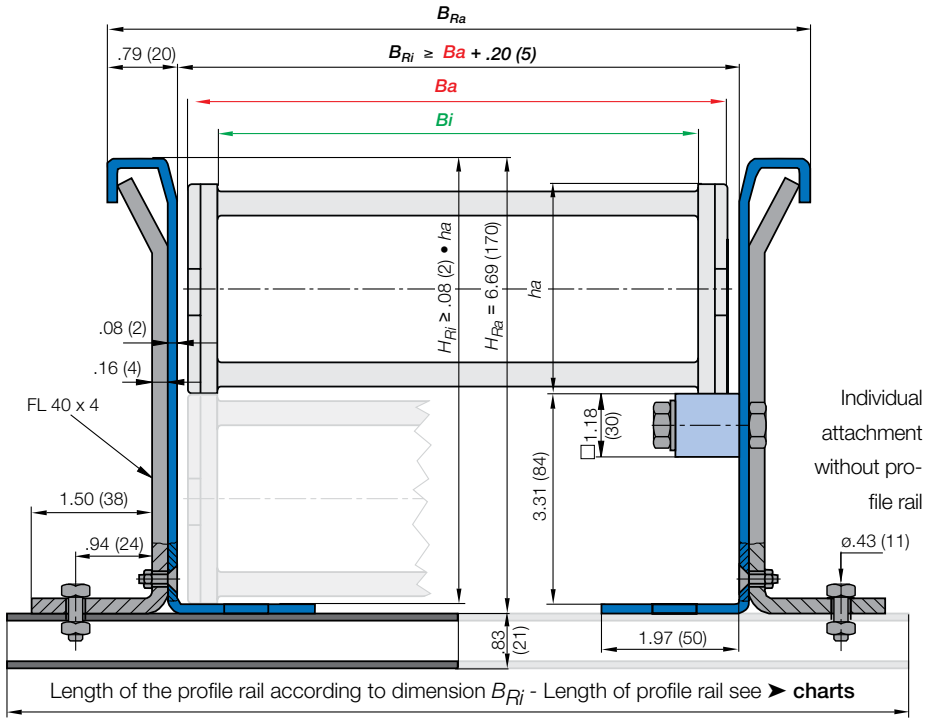


For the following Series

**System E4 Series:**

- 14550/14650/R19050

## Part No. **94-14550-30** - Trough Height: 6.69 in. (170 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

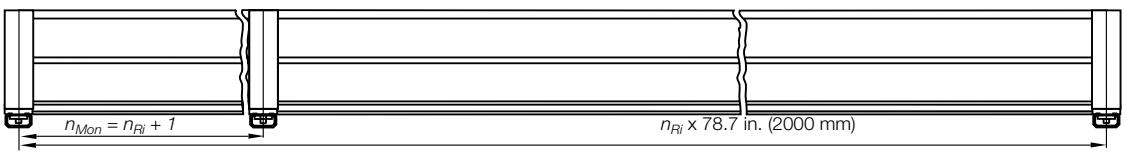
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **94-14550-30** | **37.04** |
| 1 Installation set “Basic” **with** profile rail | **94-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **94-50** | **1.41** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **93-01** | **4.30** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **94-51** | **.60** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **2.65** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

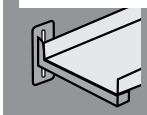
### 14550/14650/R19050

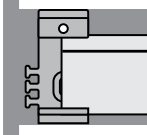
| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.19 (81) | * |
| -06 | 3.78 (96) | * |
| -07 | 4.17 (106) | 94-50-225 |
| -10 | 5.16 (131) | 94-50-250 |
| -11 | 5.63 (143) | 94-50-275 |
| -12 | 6.14 (156) | 94-50-275 |
| -13 | 6.61 (168) | 94-50-300 |
| -15 | 7.13 (181) | 94-50-300 |
| -16 | 7.60 (193) | 94-50-325 |
| -17 | 8.11 (206) | 94-50-325 |
| -18 | 8.58 (218) | 94-50-350 |
| -20 | 9.09 (231) | 94-50-350 |
| -21 | 9.57 (243) | 94-50-375 |
| -22 | 10.08 (256) | 94-50-375 |
| -23 | 10.55 (268) | 94-50-400 |
| -25 | 11.06 (281) | 94-50-400 |
| -26 | 11.54 (293) | 94-50-425 |
| -27 | 12.05 (306) | 94-50-425 |
| -28 | 12.52 (318) | 94-50-450 |
| -30 | 13.03 (331) | 94-50-450 |
| -31 | 13.50 (343) | 94-50-475 |
| -32 | 14.02 (356) | 94-50-475 |
| -33 | 14.49 (368) | 94-50-500 |
| -35 | 15.00 (381) | 94-50-500 |
| -36 | 15.47 (393) | 94-50-525 |
| -37 | 15.98 (406) | 94-50-525 |
| -38 | 16.46 (418) | 94-50-550 |
| -40 | 16.97 (431) | 94-50-550 |
| -41 | 17.44 (443) | 94-50-575 |
| -42 | 17.95 (456) | 94-50-575 |
| -43 | 18.43 (468) | 94-50-600 |
| -45 | 18.94 (481) | 94-50-600 |
| -46 | 19.41 (493) | 94-50-625 |
| -47 | 19.92 (506) | 94-50-625 |
| -48 | 20.59 (518) | 94-50-650 |
| -50 | 20.91 (531) | 94-50-650 |
| -51 | 21.38 (543) | 94-50-675 |
| -52 | 21.89 (556) | 94-50-675 |
| -53 | 22.36 (568) | 94-50-700 |
| -55 | 22.87 (581) | 94-50-700 |
| -60 | 24.84 (631) | 94-50-750 |

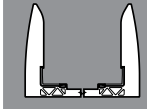
System E4 with extension links, long travel application on board West Navigator (Norway)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









# Guide Trough Systems
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Internet: http://www.igus.com
email: sales@igus.com
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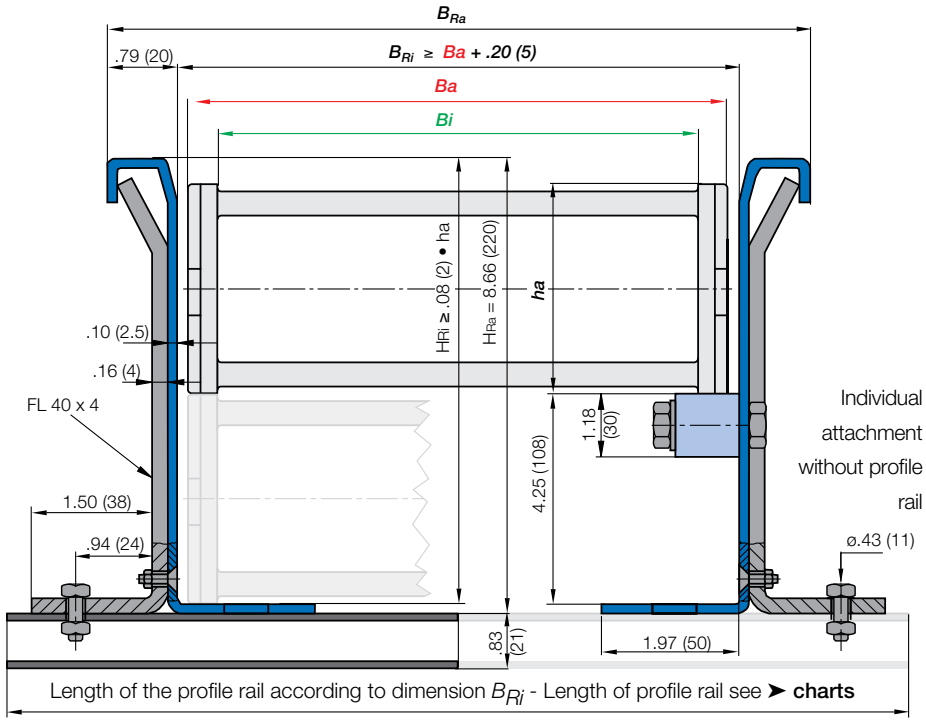
For the following Series

**System E4 Series:**
- 5050/5150/R9850
- 15050/15150/R19850

**System E6 Series:**
- E6-80/E6-80L

**System E4-1 Series**
- E4-80/H4-80/R4-80

## Part No. **99-30** - Trough Height: 6.69 in. (170 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

- = Guide trough
- = Glide bar
- = Installation set “Basic”
- = profile rail

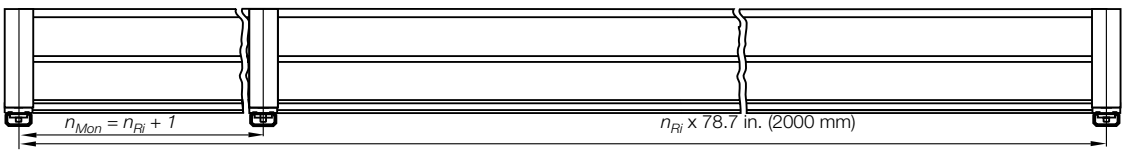
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **99-30** | **43.66** |
| 1 Installation set “Basic” **with** profile rail | **96-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **96-50** | **1.63** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **93-01** | **9.95** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **96-51** | **.69** |
| 4 Flat-head screws M6 x 20 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **2.67** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 96-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### 5050/5150/R9850 E4-80/H4-80/R4-80

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 4.13 (105) | 96-50-225 |
| -06 | 4.72 (120) | 96-50-250 |
| -07 | 5.12 (130) | 96-50-250 |
| -10 | 6.10 (155) | 96-50-275 |
| -11 | 6.61 (168) | 96-50-300 |
| -12 | 7.09 (180) | 96-50-300 |
| -13 | 7.60 (193) | 96-50-325 |
| -15 | 8.07 (205) | 96-50-325 |
| -16 | 8.58 (218) | 96-50-350 |
| -17 | 9.06 (230) | 96-50-350 |
| -18 | 9.57 (243) | 96-50-375 |
| -20 | 10.04 (255) | 96-50-375 |
| -21 | 10.55 (268) | 96-50-400 |
| -22 | 11.02 (280) | 96-50-400 |
| -23 | 11.54 (293) | 96-50-425 |
| -25 | 12.01 (305) | 96-50-425 |
| -26 | 12.52 (318) | 96-50-450 |
| -27 | 12.99 (330) | 96-50-450 |
| -28 | 13.50 (343) | 96-50-475 |
| -30 | 13.98 (355) | 96-50-475 |
| -31 | 14.49 (368) | 96-50-500 |
| -32 | 14.96 (380) | 96-50-500 |
| -33 | 15.47 (393) | 96-50-525 |
| -35 | 15.94 (405) | 96-50-525 |
| -36 | 16.46 (418) | 96-50-550 |
| -37 | 16.93 (430) | 96-50-550 |
| -38 | 17.44 (443) | 96-50-575 |
| -40 | 17.91 (455) | 96-50-575 |
| -41 | 18.43 (468) | 96-50-600 |
| -42 | 18.90 (480) | 96-50-600 |
| -43 | 19.41 (493) | 96-50-625 |
| -45 | 19.88 (505) | 96-50-625 |
| -46 | 20.39 (518) | 96-50-650 |
| -47 | 20.87 (530) | 96-50-650 |
| -48 | 21.38 (543) | 96-50-675 |
| -50 | 21.85 (555) | 96-50-675 |
| -51 | 22.36 (568) | 96-50-700 |
| -52 | 22.83 (580) | 96-50-700 |
| -53 | 23.35 (593) | 96-50-725 |
| -55 | 23.82 (605) | 96-50-725 |
| -60 | 25.79 (655) | 96-50-775 |

### 15050/15150/R19850

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.35 (85) | * |
| -07 | 4.33 (110) | 96-50-225 |
| -10 | 5.31 (135) | 96-50-250 |
| -11 | 5.83 (148) | 96-50-275 |
| -12 | 6.30 (160) | 96-50-275 |
| -13 | 6.81 (173) | 96-50-300 |
| -15 | 7.28 (185) | 96-50-300 |
| -16 | 7.80 (198) | 96-50-325 |
| -17 | 8.27 (210) | 96-50-325 |
| -18 | 8.78 (223) | 96-50-350 |
| -20 | 9.25 (235) | 96-50-350 |
| -21 | 9.76 (248) | 96-50-375 |
| -22 | 10.24 (260) | 96-50-375 |
| -23 | 10.75 (273) | 96-50-400 |
| -25 | 11.22 (285) | 96-50-400 |
| -26 | 11.73 (298) | 96-50-425 |
| -27 | 12.20 (310) | 96-50-425 |
| -28 | 12.72 (323) | 96-50-450 |
| -30 | 13.19 (335) | 96-50-450 |
| -31 | 13.70 (348) | 96-50-475 |
| -32 | 14.17 (360) | 96-50-475 |
| -33 | 14.69 (373) | 96-50-500 |
| -35 | 15.16 (385) | 96-50-500 |
| -36 | 15.67 (398) | 96-50-525 |
| -37 | 16.14 (410) | 96-50-525 |
| -38 | 16.65 (423) | 96-50-550 |
| -40 | 17.13 (435) | 96-50-550 |
| -41 | 17.63 (448) | 96-50-575 |
| -42 | 18.11 (460) | 96-50-575 |
| -43 | 18.62 (473) | 96-50-600 |
| -45 | 19.09 (485) | 96-50-600 |
| -46 | 19.61 (498) | 96-50-625 |
| -47 | 20.08 (510) | 96-50-625 |
| -48 | 20.59 (523) | 96-50-650 |
| -50 | 21.06 (535) | 96-50-650 |
| -51 | 21.57 (548) | 96-50-675 |
| -52 | 22.04 (560) | 96-50-675 |
| -53 | 22.56 (573) | 96-50-700 |
| -55 | 23.03 (585) | 96-50-700 |
| -60 | 25.00 (635) | 96-50-750 |

*upon request

### 15250/15350

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.35 (85) | * |
| -06 | 4.06 (103) | 96-50-225 |
| -07 | 4.33 (110) | 96-50-225 |
| -087 | 4.80 (122) | 96-50-250 |
| -09 | 5.20 (132) | 96-50-250 |
| -10 | 5.31 (135) | 96-50-250 |
| -11 | 5.63 (143) | 96-50-275 |
| -112 | 5.83 (148) | 96-50-275 |
| -12 | 6.30 (160) | 96-50-275 |
| -137 | 6.77 (172) | 96-50-300 |
| -15 | 7.28 (185) | 96-50-300 |
| -162 | 7.80 (198) | 96-50-325 |
| -17 | 7.99 (203) | 96-50-325 |
| -18 | 8.27 (210) | 96-50-325 |
| -187 | 8.78 (223) | 96-50-350 |
| -20 | 9.25 (235) | 96-50-350 |
| -212 | 9.76 (248) | 96-50-375 |
| -23 | 10.24 (260) | 96-50-375 |
| -237 | 10.75 (273) | 96-50-400 |
| -25 | 11.22 (285) | 96-50-400 |
| -262 | 11.73 (298) | 96-50-425 |
| -28 | 12.20 (310) | 96-50-425 |
| -29 | 12.72 (323) | 96-50-450 |
| -30 | 13.19 (335) | 96-50-450 |
| -312 | 13.70 (348) | 96-50-475 |
| -325 | 14.17 (360) | 96-50-475 |
| -337 | 14.69 (373) | 96-50-500 |
| -350 | 15.16 (385) | 96-50-500 |
| -362 | 15.67 (398) | 96-50-525 |
| -375 | 16.14 (410) | 96-50-525 |
| -387 | 16.65 (423) | 96-50-550 |
| -400 | 17.13 (435) | 96-50-550 |

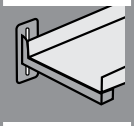
*upon request

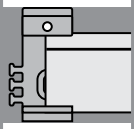
### E6-80

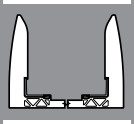
| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 4.13 (105) | 96-50-225 |
| -06 | 4.72 (120) | 96-50-250 |
| -07 | 5.12 (130) | 96-50-250 |
| -10 | 6.10 (155) | 96-50-275 |
| -11 | 6.57 (167) | 96-50-300 |
| -12 | 7.09 (180) | 96-50-300 |
| -13 | 7.56 (192) | 96-50-325 |
| -15 | 8.07 (205) | 96-50-325 |
| -16 | 8.54 (217) | 96-50-350 |
| -17 | 9.06 (230) | 96-50-350 |
| -18 | 9.53 (242) | 96-50-375 |
| -20 | 10.04 (255) | 96-50-375 |
| -21 | 10.51 (267) | 96-50-400 |
| -22 | 11.02 (280) | 96-50-400 |
| -23 | 11.50 (292) | 96-50-425 |
| -25 | 12.01 (305) | 96-50-425 |
| -26 | 12.48 (317) | 96-50-450 |
| -27 | 12.99 (330) | 96-50-450 |
| -28 | 13.46 (342) | 96-50-475 |
| -30 | 13.98 (355) | 96-50-475 |
| -31 | 14.45 (367) | 96-50-500 |
| -32 | 14.96 (380) | 96-50-500 |
| -33 | 15.43 (392) | 96-50-525 |
| -35 | 15.94 (405) | 96-50-525 |
| -36 | 16.42 (417) | 96-50-550 |
| -37 | 16.93 (430) | 96-50-550 |
| -38 | 17.40 (442) | 96-50-575 |
| -40 | 17.91 (455) | 96-50-575 |
| -41 | 18.39 (467) | 96-50-600 |
| -42 | 18.90 (480) | 96-50-600 |
| -43 | 19.37 (492) | 96-50-625 |
| -45 | 19.88 (505) | 96-50-625 |
| -46 | 20.35 (517) | 96-50-650 |
| -47 | 20.87 (530) | 96-50-650 |
| -48 | 21.34 (542) | 96-50-675 |
| -50 | 21.85 (555) | 96-50-675 |
| -51 | 22.32 (567) | 96-50-700 |
| -52 | 22.83 (580) | 96-50-700 |
| -53 | 23.31 (592) | 96-50-725 |
| -55 | 23.82 (605) | 96-50-725 |
| -60 | 25.79 (655) | 96-50-775 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS









# Guide Trough Systems
# Steel Guide Troughs



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

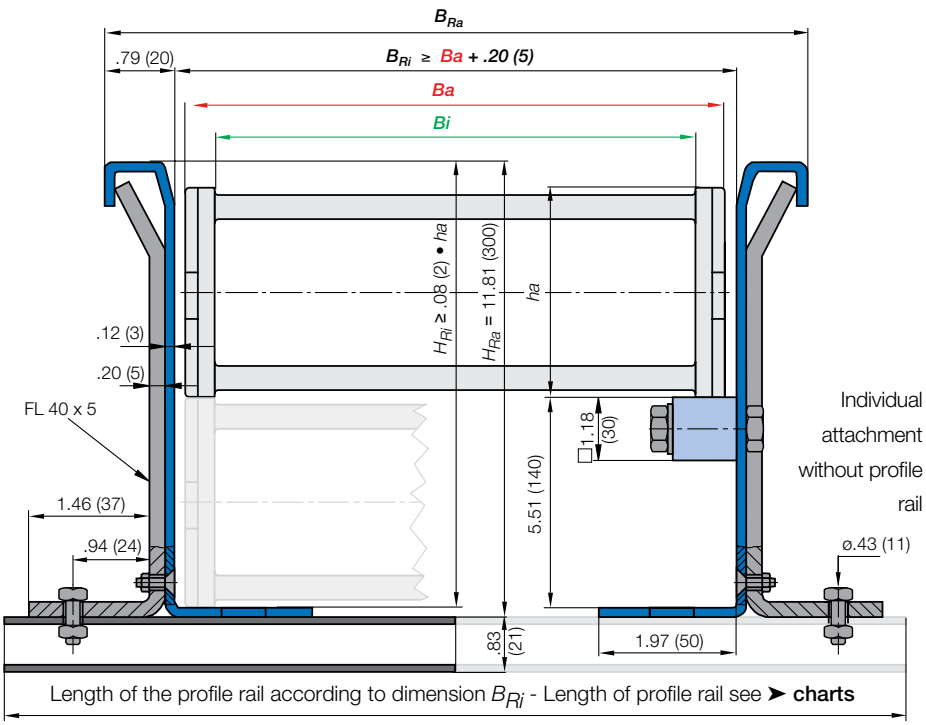


**For the following Series**

**System E4-1 Series:**
- E4-112/H4-112/R4-112

**System E4 Series:**
- 600/601/R608
- 640
- 1640/R1608

## Part No. **97-30** - Trough Height: 11.81 in. (300 mm)




| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |

$H_{Ri} \geq 2 \bullet ha$
$B_{Ri} \geq Ba + 5$

= Guide trough
= Glide bar
= Installation set “Basic”
= profile rail

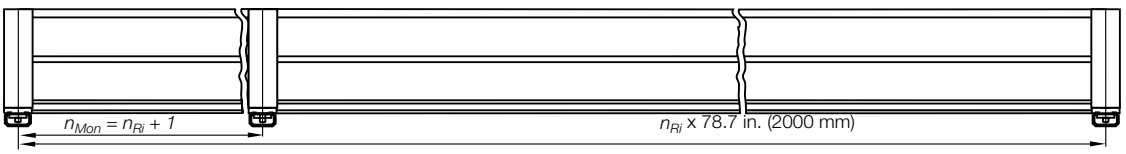
## Steel Guide Trough components - Sets and single parts

| Complete guide trough sets - description | Part No. | Weight lbs |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **97-30** | **60.42** |
| 1 Installation set “Basic” **with** profile rail | **97-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **97-50** | **2.47** |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **93-01** | **9.95** |

| Single parts - description | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | **.60 lbs/ft** |
| 1 Clamping brackets, 2 pcs | **97-51** | **1.12** |
| 4 Flat-head screws M6 x 20 | **98-52** | |
| 4 Lock nuts M8 | **98-53** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs | **93-21** | **2.67** |

Supplement Part No. with the indicated profile rail-length-index. **Example: 94-50-175**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

### E4-112/H4-112/R4-112

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 4.21 (107) | 97-50-225 |
| -06 | 4.80 (122) | 97-50-250 |
| -07 | 5.20 (132) | 97-50-250 |
| -10 | 6.18 (157) | 97-50-275 |
| -11 | 6.65 (169) | 97-50-300 |
| -12 | 7.17 (182) | 97-50-300 |
| -13 | 7.64 (194) | 97-50-325 |
| -15 | 8.15 (207) | 97-50-325 |
| -16 | 8.62 (219) | 97-50-350 |
| -17 | 9.13 (232) | 97-50-350 |
| -18 | 9.61 (244) | 97-50-375 |
| -20 | 10.12 (257) | 97-50-375 |
| -21 | 10.59 (269) | 97-50-400 |
| -22 | 11.10 (282) | 97-50-400 |
| -23 | 11.57 (294) | 97-50-425 |
| -25 | 12.09 (307) | 97-50-425 |
| -26 | 12.56 (319) | 97-50-450 |
| -27 | 13.07 (332) | 97-50-450 |
| -28 | 13.54 (344) | 97-50-475 |
| -30 | 14.06 (357) | 97-50-475 |
| -31 | 14.53 (369) | 97-50-500 |
| -32 | 15.04 (382) | 97-50-500 |
| -33 | 15.51 (394) | 97-50-525 |
| -35 | 16.02 (407) | 97-50-525 |
| -36 | 16.50 (419) | 97-50-550 |
| -37 | 17.01 (432) | 97-50-550 |
| -38 | 17.48 (444) | 97-50-575 |
| -40 | 17.99 (457) | 97-50-575 |
| -41 | 18.46 (469) | 97-50-600 |
| -42 | 18.98 (482) | 97-50-600 |
| -43 | 19.45 (494) | 97-50-625 |
| -45 | 19.96 (507) | 97-50-625 |
| -46 | 20.43 (519) | 97-50-650 |
| -47 | 20.94 (532) | 97-50-650 |
| -48 | 21.42 (544) | 97-50-675 |
| -50 | 21.93 (557) | 97-50-675 |
| -51 | 22.40 (569) | 97-50-700 |
| -52 | 22.91 (582) | 97-50-700 |
| -53 | 23.39 (594) | 97-50-725 |
| -55 | 23.90 (607) | 97-50-725 |
| -60 | 25.87 (657) | 97-50-775 |

*upon request

### 640

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -12 | 5.67 (144) | 97-50-275 |
| -13 | 6.18 (157) | 97-50-275 |
| -15 | 6.65 (169) | 97-50-300 |
| -16 | 7.16 (182) | 97-50-300 |
| -17 | 6.46 (164) | 97-50-325 |
| -18 | 8.15 (207) | 97-50-325 |
| -20 | 8.62 (219) | 97-50-350 |
| -21 | 9.13 (232) | 97-50-350 |
| -22 | 9.61 (244) | 97-50-375 |
| -23 | 10.12 (257) | 97-50-375 |
| -25 | 10.59 (269) | 97-50-400 |
| -26 | 11.10 (282) | 97-50-400 |
| -27 | 11.57 (294) | 97-50-425 |
| -28 | 12.09 (307) | 97-50-425 |
| -30 | 12.56 (319) | 97-50-450 |
| -31 | 13.07 (332) | 97-50-450 |
| -32 | 13.54 (344) | 97-50-475 |
| -33 | 14.06 (357) | 97-50-475 |
| -35 | 14.53 (369) | 97-50-500 |
| -36 | 15.04 (382) | 97-50-500 |
| -37 | 15.51 (394) | 97-50-525 |
| -38 | 16.02 (407) | 97-50-525 |
| -40 | 16.50 (419) | 97-50-550 |
| -41 | 17.01 (432) | 97-50-550 |
| -42 | 17.48 (444) | 97-50-575 |
| -43 | 17.99 (457) | 97-50-575 |
| -45 | 18.46 (469) | 97-50-600 |
| -46 | 18.98 (482) | 97-50-600 |
| -47 | 19.45 (494) | 97-50-625 |
| -48 | 19.96 (507) | 97-50-625 |
| -50 | 20.43 (519) | 97-50-650 |
| -51 | 20.94 (532) | 97-50-650 |
| -52 | 21.42 (544) | 97-50-675 |
| -53 | 21.93 (557) | 97-50-675 |
| -55 | 22.40 (569) | 97-50-700 |
| -60 | 24.37 (619) | 97-50-750 |

### 1640/1608

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -05 | 3.50 (89) | * |
| -06 | 4.09 (104) | 97-50-225 |
| -07 | 4.49 (114) | 97-50-250 |
| -10 | 5.47 (139) | 97-50-275 |
| -11 | 5.94 (151) | 97-50-275 |
| -12 | 6.46 (164) | 97-50-300 |
| -13 | 6.93 (176) | 97-50-300 |
| -15 | 7.44 (189) | 97-50-325 |
| -16 | 7.91 (201) | 97-50-325 |
| -17 | 8.43 (214) | 97-50-350 |
| -18 | 8.90 (226) | 97-50-350 |
| -20 | 9.41 (239) | 97-50-375 |
| -21 | 9.88 (251) | 97-50-375 |
| -22 | 10.39 (264) | 97-50-400 |
| -23 | 10.87 (276) | 97-50-400 |
| -25 | 11.38 (289) | 97-50-425 |
| -26 | 11.85 (301) | 97-50-425 |
| -27 | 12.36 (314) | 97-50-450 |
| -28 | 12.83 (326) | 97-50-450 |
| -30 | 13.35 (339) | 97-50-475 |
| -31 | 13.82 (351) | 97-50-475 |
| -32 | 14.33 (364) | 97-50-500 |
| -33 | 14.80 (376) | 97-50-500 |
| -35 | 15.31 (389) | 97-50-525 |
| -36 | 15.79 (401) | 97-50-525 |
| -37 | 16.30 (414) | 97-50-550 |
| -38 | 16.77 (426) | 97-50-550 |
| -40 | 17.28 (439) | 97-50-575 |
| -41 | 17.76 (451) | 97-50-575 |
| -42 | 18.27 (464) | 97-50-600 |
| -43 | 18.74 (476) | 97-50-600 |
| -45 | 19.25 (489) | 97-50-625 |
| -46 | 19.72 (501) | 97-50-625 |
| -47 | 20.24 (514) | 97-50-650 |
| -48 | 20.71 (526) | 97-50-650 |
| -50 | 21.22 (539) | 97-50-675 |
| -51 | 21.69 (551) | 97-50-675 |
| -52 | 22.20 (564) | 97-50-700 |
| -53 | 22.68 (576) | 97-50-700 |
| -55 | 23.19 (589) | 97-50-725 |
| -60 | 25.16 (639) | 97-50-775 |

*upon request

### 600/601/R608

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -20 | 10.12 (257) | 97-50-375 |
| -25 | 12.09 (307) | 97-50-425 |
| -30 | 14.06 (357) | 97-50-475 |
| -32 | 14.84 (377) | 97-50-500 |
| -35 | 16.02 (407) | 97-50-525 |
| -40 | 17.99 (457) | 97-50-575 |
| -45 | 19.96 (507) | 97-50-625 |
| -50 | 21.93 (557) | 97-50-675 |
| -55 | 23.90 (607) | 97-50-725 |
| -60 | 25.87 (657) | 97-50-775 |

Rig skidding application on the Claymore, North Sea

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

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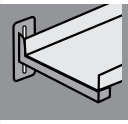

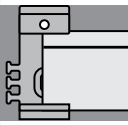

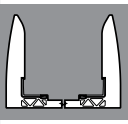

# Guide Trough Systems
# Steel Guide Troughs

igus® E-Chain System®
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Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

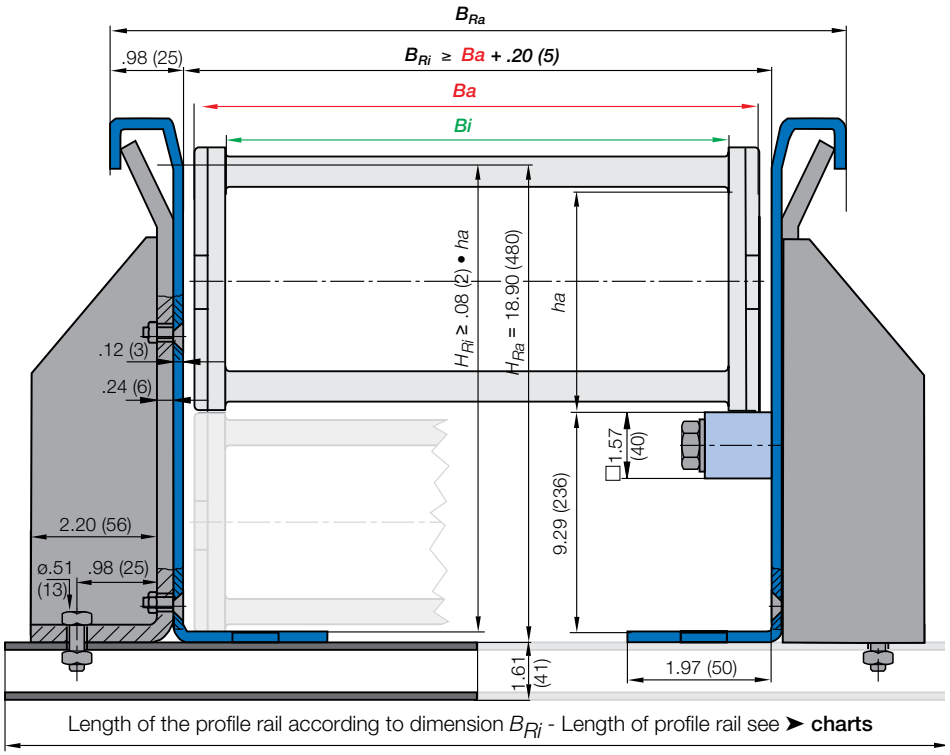


**For the following Series**

| System E4 Series: |
|---|
| ● 800 |
| **System E4-1 Series** |
| ● 840 |

| | | |
|---|---|---|
| *Ba* | = | Outer E-Chain® width |
| *Bi* | = | Inner E-Chain® width |
| *ha* | = | E-Chain® outer height |
| $H_{Ri}$ | = | Inner trough height |
| $H_{Ra}$ | = | Outer trough height |
| $B_{Ri}$ | = | Inner trough width ➤ depends on dim. *Ba* |
| $B_{Ra}$ | = | Outer trough width |
| $n_{Mon}$ | = | # of installation sets (left/right) |
| $n_{Ri}$ | = | # of trough set (left/right) |
| ! | | $H_{Ri} \geq 2 \bullet ha$<br>$B_{Ri} \geq Ba + 5$ |
| ● | = | Guide trough |
| ● | = | Glide bar |
| ● | = | Installation set “Basic” |
| ● | = | profile rail |

## Part No. **90-30** - Trough Height: 18.90 in. (480 mm)




Length of the profile rail according to dimension $B_{Ri}$ - Length of profile rail see ➤ **charts**

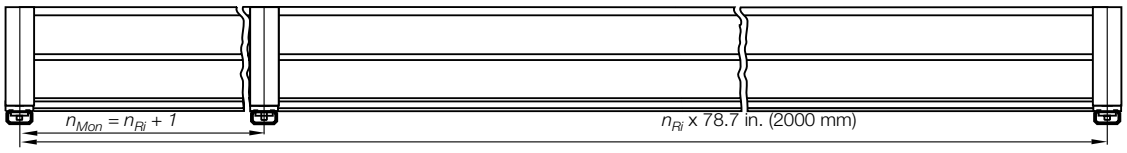
## Steel Guide Trough components - Sets and single parts

| **Complete guide trough sets - description** | **Part No.** | **Weight lbs** |
|---|---|---|
| Set of 2 trough side parts **without** glide bars, each 6.56 ft. (2m) | **90-30** | |
| 1 Installation set “Basic” **with** profile rail | **90-50-____** | |
| 1 Installation set “Basic” **without** profile rail | **90-50** | |
| 1 Glide bar set with hardware, each 6.56 ft. (2m) + 22 bolts | **90-01** | |

| **Single parts - description** | | |
|---|---|---|
| 1 profile rail, individual | **92-52-____** | |
| 1 Clamping brackets, 2 pcs | **90-51** | |
| 4 Flat-head screws M8 x 25 | **92-53** | |
| 4 Lock nuts M6 | **92-55** | |
| 2 3/8 Slide nuts | **92-56** | |
| 2 Hex-head bolts 3/8 x 3/4 | **92-57** | |
| Glide bar hardware only, 22 pcs. | **92-21** | |

Supplement Part No. with the indicated profile rail-length-index. **Example: 90-50-200**
profile rail-length-index for your chosen trough inner width $B_{Ri}$ ➤ **opposite page**

## Design sketch: Number of installation sets which have to be installed



## Part No. Installation set: Steel Guide Trough with profile rail (depending on the width)

**800**

| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -20 | 10.43 (265) | 90-50-450 |
| -25 | 12.40 (315) | 90-50-500 |
| -30 | 14.37 (365) | 90-50-550 |
| -32 | 15.35 (390) | 90-50-575 |
| -35 | 16.34 (415) | 90-50-600 |
| -40 | 18.31 (465) | 90-50-650 |
| -45 | 20.27 (515) | 90-50-700 |
| -50 | 22.24 (565) | 90-50-750 |
| -55 | 24.21 (615) | 90-50-800 |
| -60 | 26.18 (665) | 90-50-850 |

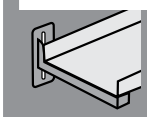
**840**

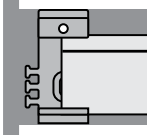
| Width Index | $B_{Ri}$ in. (mm) | Part No. Installation set |
|---|---|---|
| -13 | 6.49 (165) | 90-50-350 |
| -15 | 7.01 (178) | 90-50-350 |
| -16 | 7.48 (190) | 90-50-375 |
| -17 | 7.99 (203) | 90-50-375 |
| -18 | 8.46 (215) | 90-50-400 |
| -20 | 8.98 (228) | 90-50-400 |
| -21 | 9.45 (240) | 90-50-425 |
| -22 | 9.96 (253) | 90-50-425 |
| -23 | 10.43 (265) | 90-50-450 |
| -25 | 10.94 (278) | 90-50-450 |
| -26 | 11.42 (290) | 90-50-475 |
| -27 | 11.93 (303) | 90-50-475 |
| -28 | 12.40 (315) | 90-50-500 |
| -30 | 12.91 (328) | 90-50-500 |
| -31 | 13.39 (340) | 90-50-525 |
| -32 | 13.90 (353) | 90-50-525 |
| -33 | 14.37 (365) | 90-50-550 |
| -35 | 14.88 (378) | 90-50-550 |
| -36 | 15.35 (390) | 90-50-575 |
| -37 | 15.87 (403) | 90-50-575 |
| -38 | 16.34 (415) | 90-50-600 |
| -40 | 16.85 (428) | 90-50-600 |
| -41 | 17.32 (440) | 90-50-625 |
| -42 | 17.83 (453) | 90-50-625 |
| -43 | 18.31 (465) | 90-50-650 |
| -45 | 18.82 (478) | 90-50-650 |
| -46 | 19.29 (490) | 90-50-675 |
| -47 | 19.80 (503) | 90-50-675 |
| -48 | 20.20 (513) | 90-50-700 |
| -50 | 20.79 (528) | 90-50-700 |
| -51 | 21.26 (540) | 90-50-725 |
| -52 | 21.77 (553) | 90-50-725 |
| -53 | 22.24 (565) | 90-50-750 |
| -55 | 22.76 (578) | 90-50-750 |
| -60 | 26.18 (665) | 90-50-800 |

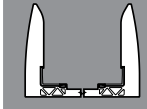
Assembling of an E4 E-Chain® Series 800 in an igus® steel guide trough

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

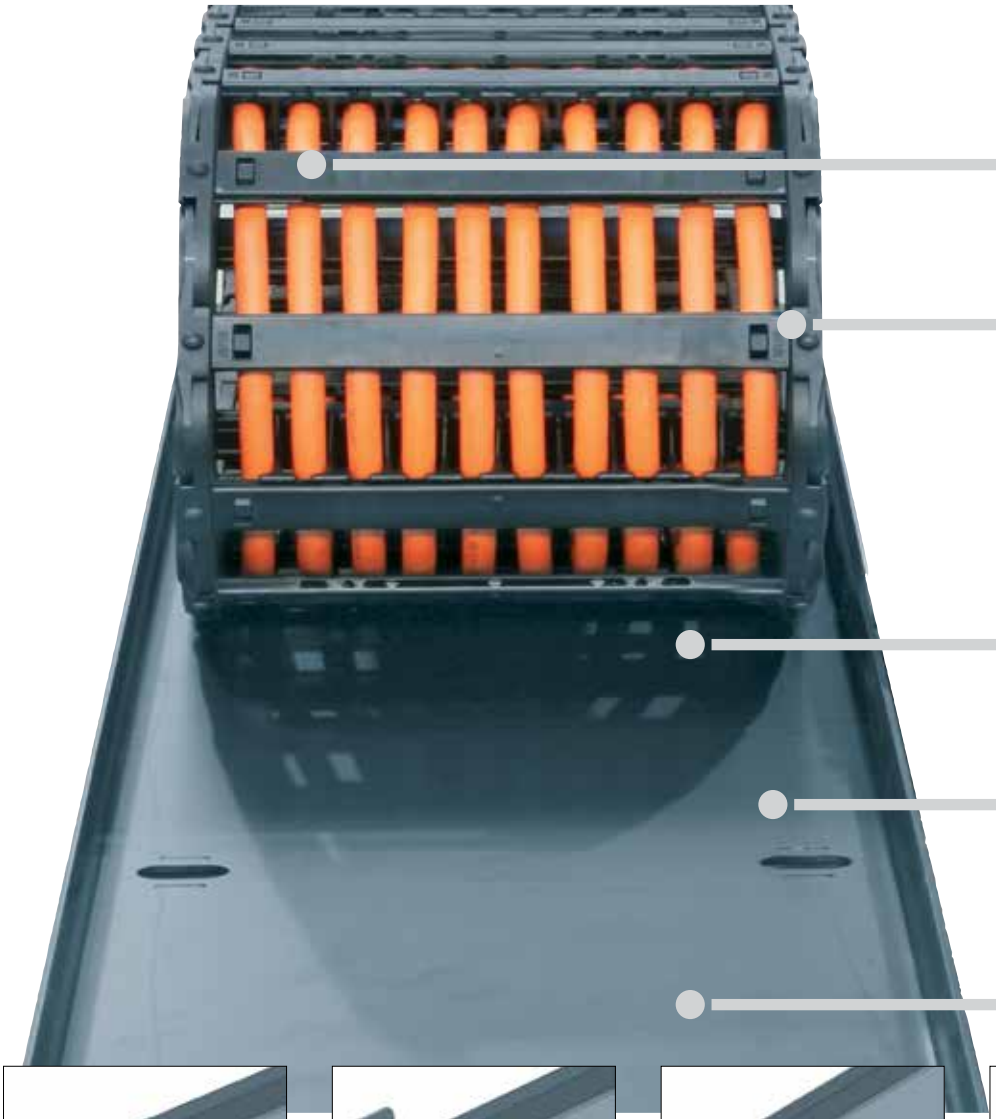








# Support Tray
# For support of the lower run



Noise and wear reducing, safe guiding of the lower run of your E-Chain® in standard applications

Flexible one-piece solution, for a large selection of igus® E2/000 and E4-1 series E-Chains

Simple design - easy mounting to all types of profiles and wall brackets

Complete system with all needed parts as one unit

Lightweight material - available in the color of your choice

Option 01 - with connection-rail

Option 02 - with bracket

Option 03 - without rail (upon request)

Option 04 - customized (upon request)

## For support of the lower run - Support tray tool kit

Simple one-piece support trays for the lower E-Chain® run, according with your requirements and specification. Your width, height and color - we supply the fitting E-Chain®, together with the support tray system. Ready to install onto your machine or application. Save on procurement and design time.

- Complete system, ready to install
- No more costly self-made designs
- Easy installation onto your machine, on profiles or wall-mount brackets
- igus® support tray - in 2 types and 4 options available
- For many widths available from stock, with many mounting possibilities

# Support Tray Selection Table

## Support Tray - Type 01 for Series:

- 2400/2450/2480/2500
- 2600/2650/2680/2700
- E4-21
- E4-28/R4-28
- E4-31L/R4-31L
- E4-32/H4-32/R4-32
- E4-38L/R4-38L
- 220/R760
- 280/290/R770
- 2828/2928/R7728
- E6-29/R6-29
- E6-35
- E6-40/R6-40
- E61-29

| Support tray Part No. | Width E-Chain®* | Outer trough width $B_{Ra}$ in. (mm) | Inner trough width $B_{Ri}$ in. (mm) | Material |
|---|---|---|---|---|
| **S9-010/011-05-XXXX-0** | -05 / -050 | 3.50 (89) | 3.15 (80) | Steel, black |
| **S9-010/011-07-XXXX-0** | -07 / -070 | 4.49 (114) | 4.13 (105) | Steel, black |
| **S9-010/011-10-XXXX-0** | -10 / -100 | 5.47 (139) | 5.12 (130) | Steel, black |
| **S9-010/011-15-XXXX-0** | -15 / -150 | 7.28 (185) | 6.89 (175) | Steel, black |

*depends on width-index

## Support Tray - Type 02 for Series:

- 3400/3450/3480/3500
- E4-42/H4-42/R4-42
- E4-48L/R4-48L
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350
- 380/390/R780
- 400/410/R880
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850
- E6-52/R6-52
- E6-62
- E6-80

| Support tray Part No. | Width E-Chain®* | Outer trough width $B_{Ra}$ in. (mm) | Inner trough width $B_{Ri}$ in. (mm) | Material |
|---|---|---|---|---|
| **S9-020/021-10-XXXX-0** | -10 / -100 | 6.57 (167) | 6.14 (156) | Steel, black |
| **S9-020/021-15-XXXX-0** | -15 / -150 | 8.54 (217) | 8.11 (206) | Steel, black |
| **S9-020/021-20-XXXX-0** | -20 / -200 | 10.51 (267) | 10.08 (256) | Steel, black |
| **S9-020/021-25-XXXX-0** | -25 / -250 | 12.48 (317) | 12.05 (306) | Steel, black |

*depends on width-index

**Support tray with bracket for easy mounting on your application**

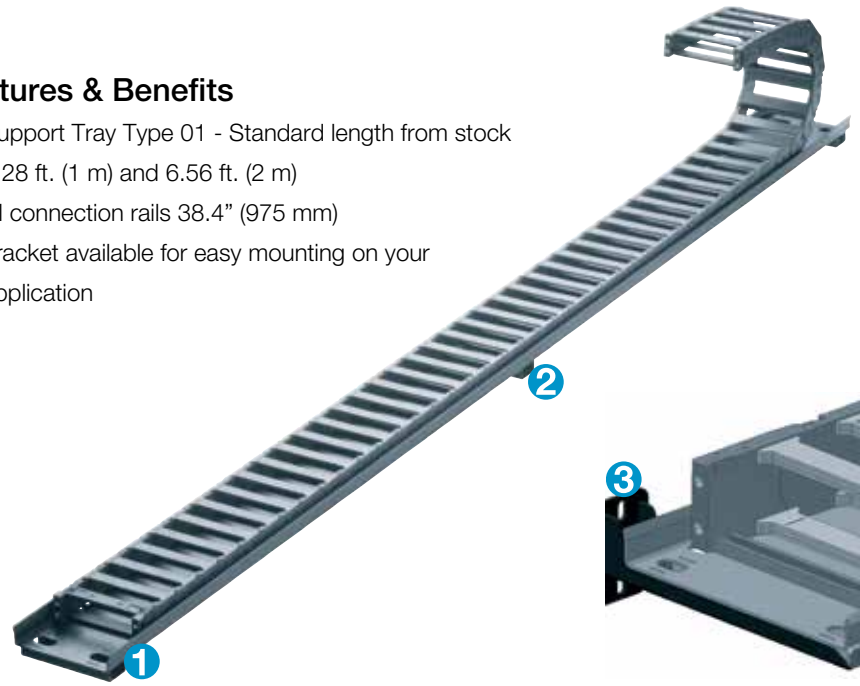
# Support Tray
# Support Tray Tool Kit - Type 01

For the following Series

- **System E2/000 Series:**
- 2400/2450/2480/2500
- 2600/2650/2680/2700
- **System E4-1 Series:**
- E4-21
- E4-28/R4-28
- E4-32/H4-32/R4-28
- **System E4-1 Light Series:**
- E4-38L/R4-38L
- **System E4/00 Series:**
- 220/R760
- 280/290/R770
- **System E4/4 Series:**
- 2828/2928/R7728
- **System E6 Series:**
- E6-29/R6-29
- E6-35
- E6-40/R6-40

## Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4" (975 mm)
3. Bracket available for easy mounting on your application




## Product Range*

| System | Suitable for the following series ▼ | Widths-index | $B_{Ra}$ in. (mm) | $B_{Ri}$ in. (mm) | Part No. Support-tray, single | Part No. Support-tray with bracket | Part No. single bracket |
|---|---|---|---|---|---|---|---|
| E2/000 | 2400/2450/2480/2500 | -05 | 3.50 (89) | 3.15 (80) | S9-010-05-XXXX-0 | S9-011-05-XXXX-0 | 907-724-05 |
| | | -07 | 4.49 (114) | 4.13 (105) | S9-010-07-XXXX-0 | S9-011-07-XXXX-0 | 907-724-07 |
| | | -10 | 5.47 (139) | 5.12 (130) | S9-010-10-XXXX-0 | S9-011-10-XXXX-0 | 907-724-10 |
| E2/000<br>E4-1<br>E4/4<br>E4/00<br>E4-1 Light | 2600/2650/2680/2700<br>E4-32/H4-32/R4-32<br>2828/2928/R7728<br>280/290/R770<br>E4-38L/R4-38L | -05 | 3.50 (89) | 3.15 (80) | S9-010-05-XXXX-0 | S9-011-05-XXXX-0 | 907-724-05 |
| | | -07 | 4.49 (114) | (105) | S9-010-07-XXXX-0 | S9-011-07-XXXX-0 | 907-724-07 |
| | | -10 | 5.47 (139) | (130) | S9-010-10-XXXX-0 | S9-011-10-XXXX-0 | 907-724-10 |
| | | -15 | 7.28 (185) | 6.89 (175) | S9-010-15-XXXX-0 | S9-011-15-XXXX-0 | 907-724-15 |
| E4-1<br>E6<br>E6<br>E6-1 | E4-21<br>E6-29/R6-29<br>E6-35<br>E61-29 | -050 | 3.50 (89) | 3.15 (80) | S9-010-05-XXXX-0 | S9-011-05-XXXX-0 | 907-724-05 |
| | | -070 | 4.49 (114) | 4.13 (105) | S9-010-07-XXXX-0 | S9-011-07-XXXX-0 | 907-724-07 |
| | | -100 | 5.47 (139) | 5.12 (130) | S9-010-10-XXXX-0 | S9-011-10-XXXX-0 | 907-724-10 |
| E4-1<br>E4/00<br>E6 | E4-28/R4-28<br>220/R760<br>E6-40/R6-40 | -050 | 3.50 (89) | 3.15 (80) | S9-010-05-XXXX-0 | S9-011-05-XXXX-0 | 907-724-05 |
| | | -070 | 4.49 (114) | 4.13 (105) | S9-010-07-XXXX-0 | S9-011-07-XXXX-0 | 907-724-07 |
| | | -100 | 5.47 (139) | 5.12 (130) | S9-010-10-XXXX-0 | S9-011-10-XXXX-0 | 907-724-10 |
| | | -150 | 7.28 (185) | 6.89 (175) | S9-010-15-XXXX-0 | S9-011-15-XXXX-0 | 907-724-15 |

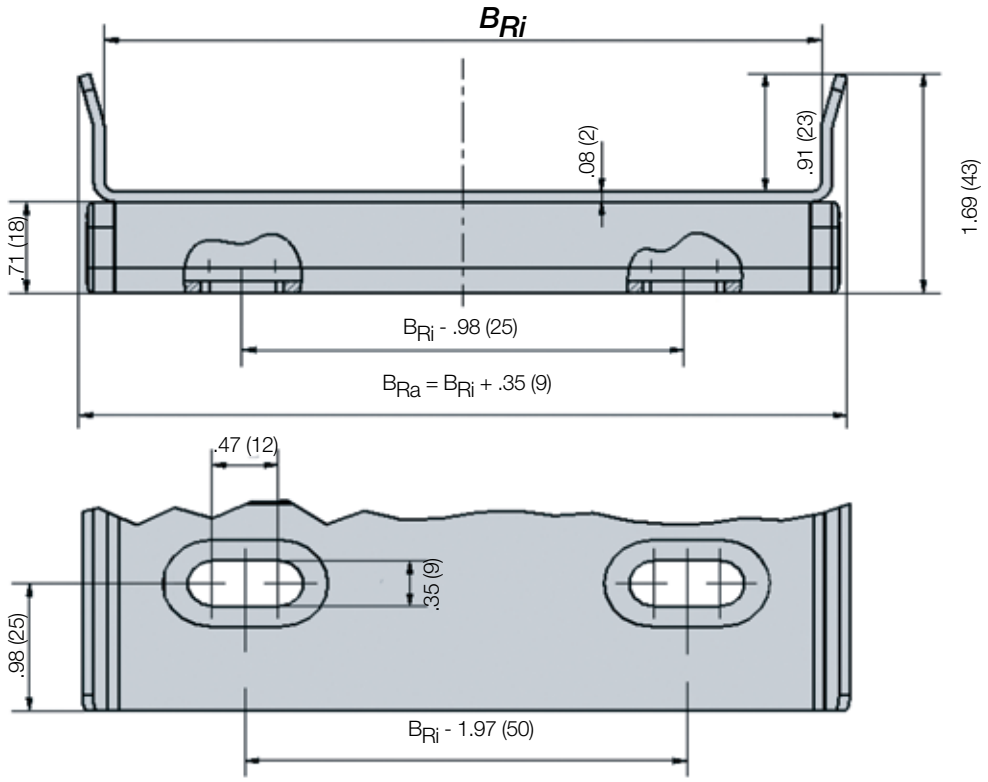
Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

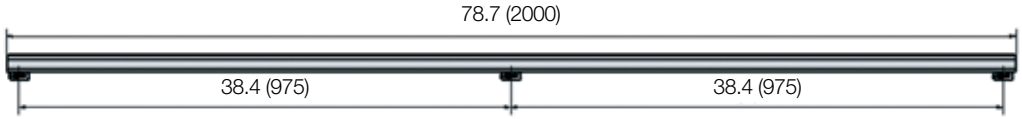
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Support Tray
# Support Tray Tool Kit - Type 01 - Technical Data

## Mounting holes of the trough system




**Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)**




**Part No. structure without bracket 39.4” (1000 mm)**

| S9- | 010- | 07- | 1000- | 0 |
|---|---|---|---|---|

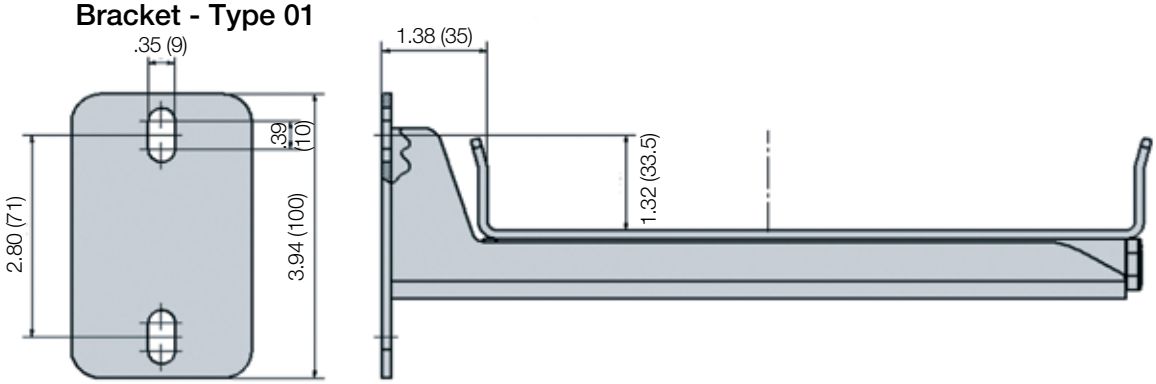
- 0 – Color, powdered black
- 1000- – Length 1000 mm
- 07- – E-Chain®- width
- 010- – without bracket
- S9- – Support tray

**Part No. structure with bracket 78.7” (2000 mm)**

| S9- | 011- | 07- | 2000- | 0 |
|---|---|---|---|---|

- 0 – Color, powdered black
- 2000- – Length 2000 mm
- 07- – E-Chain®- width
- 011- – with bracket
- S9- – Support tray

## Bracket - Type 01




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

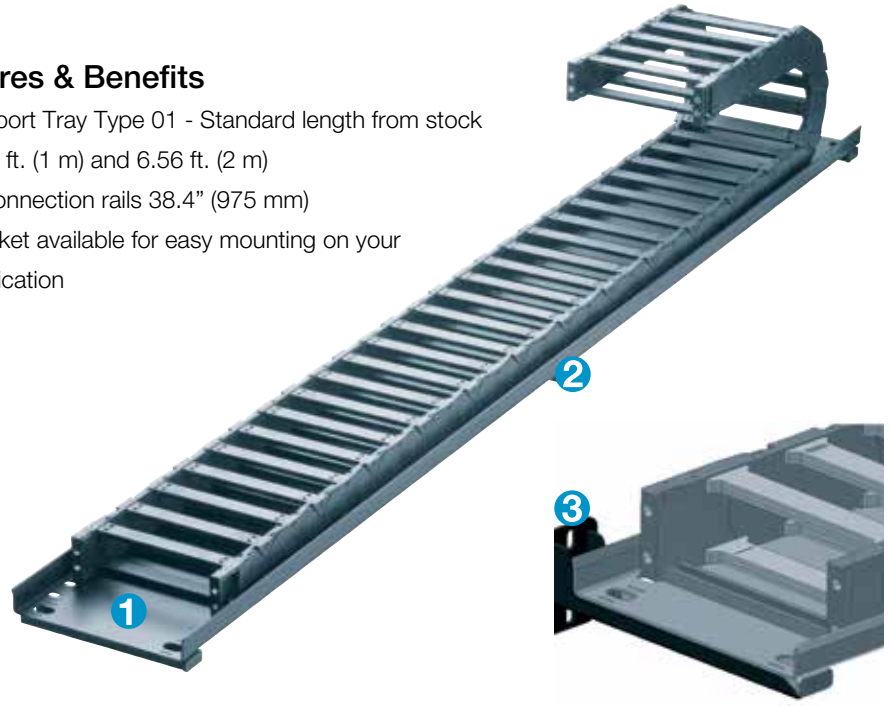
# Support Tray
# Support Tray Tool Kit - Type 02

For the following Series

- **System E2/000 Series:**
- 3400/3450/3480/3500
- **System E4-1 Series:**
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- **System E4-1 Light Series:**
- E4-48L/R4-48L
- **System E4/00 Series:**
- 380/390/R780
- 400/410/R880
- **System E4/4 Series:**
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850
- **System E4/Light Series:**
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350
- **System E6 Series:**
- E6-52/R6-52
- E6-62
- E6-80

## Features & Benefits

1. Support Tray Type 01 - Standard length from stock 3.28 ft. (1 m) and 6.56 ft. (2 m)
2. All connection rails 38.4" (975 mm)
3. Bracket available for easy mounting on your application




## Product Range*

| System | Suitable for the following series ▼ | Widths-index | $B_{Ra}$ in. (mm) | $B_{Ri}$ in. (mm) | Part No. Support-tray, single | Part No. Support-tray with bracket | Part No. single bracket |
|---|---|---|---|---|---|---|---|
| E4-1 | E4-42/H4-42/R4-42<br>E4-56/H4-56/R4-56<br>E4-80/H4-80/R4-80 | -10 | 6.57 (167) | 6.14 (156) | S9-020-10-XXXX-0 | S9-021-10-XXXX-0 | 907-759-10-0 |
| | | -15 | 8.54 (217) | 8.11 (206) | S9-020-15-XXXX-0 | S9-021-15-XXXX-0 | 907-759-15-0 |
| | | -20 | 10.51 (267) | 10.08 (256) | S9-020-20-XXXX-0 | S9-021-20-XXXX-0 | 907-759-20-0 |
| E4-1 Light | E4-42/H4-42/R4-42 | -25 | 12.48 (317) | 12.05 (306) | S9-020-25-XXXX-0 | S9-021-25-XXXX-0 | 907-759-25-0 |
| E4/00 | 380/390/R780<br>400/410/R880 | | | | | | |
| E4/4 | 3838/3938/R7838<br>4040/4140/R8840<br>5050/5150/R9850 | | | | | | |
| E4/light | 14040/14140/R18840<br>14240/14340<br>14550/14650/19050<br>15050/15150/R19850 | | | | | | |
| E6 | E6-62, E6-80 | | | | | | |
| E4/00<br>E6 | 3400/3450/3480/3500<br>E6-52/R6-52 | -100 | 6.57 (167) | 6.14 (156) | S9-020-10-XXXX-0 | S9-021-10-XXXX-0 | 907-759-10 |
| | | -150 | 8.54 (217) | 8.11 (206) | S9-020-15-XXXX-0 | S9-021-15-XXXX-0 | 907-759-15 |
| | | -200 | 10.51 (267) | 10.08 (256) | S9-020-20-XXXX-0 | S9-021-20-XXXX-0 | 907-759-20 |
| | | -250 | 12.48 (317) | 12.05 (306) | S9-020-25-XXXX-0 | S9-021-25-XXXX-0 | 907-759-25 |

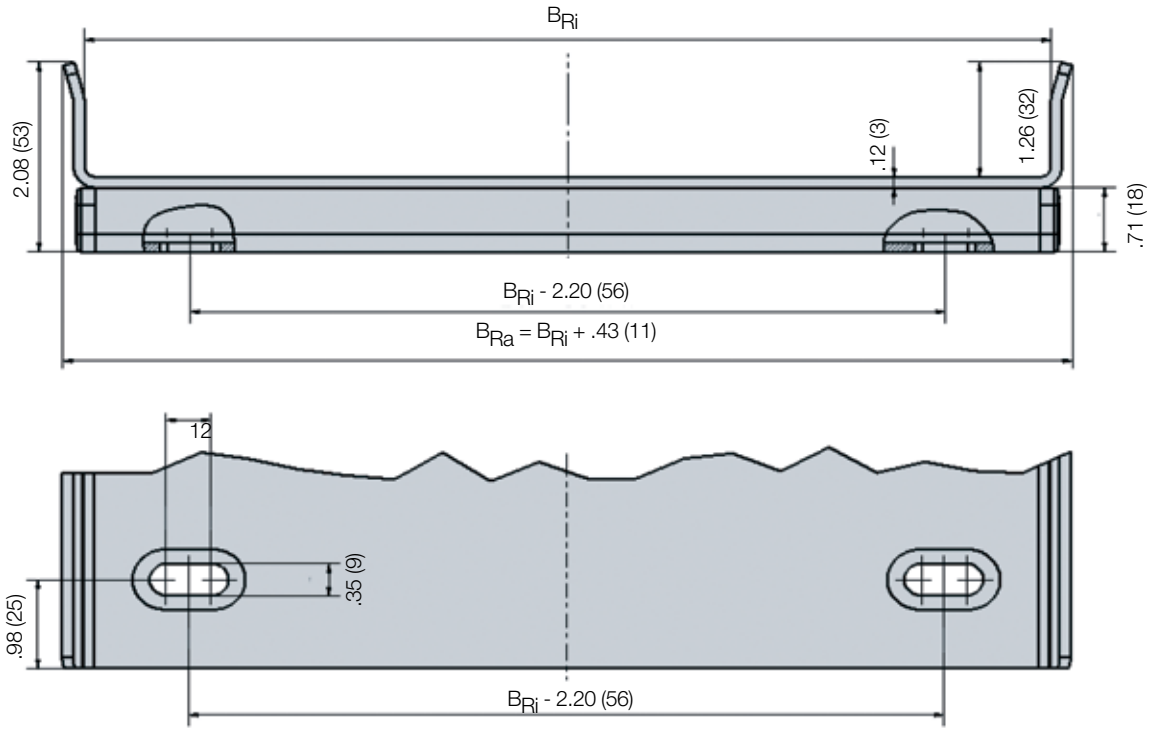
Please replace XXXX by the standard lengths 1000 or 2000 mm available from stock!

*The lengths and widths mentioned here are available from stock in the standard black color. For other lengths, widths and colors, please contact igus®.

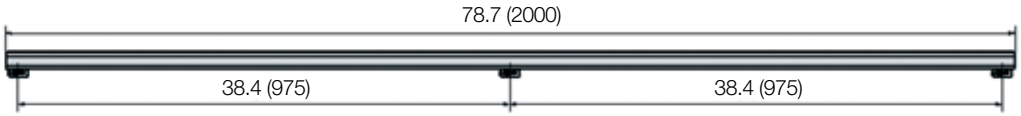
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Support Tray
# Support Tray Tool Kit - Type 02 - Technical Data

## Mounting holes of the trough system




## Standard lengths from stock 3.28 ft. and 6.56 ft. (1 m and 2 m) - All connection rails 38.4” (975 mm)




**Part No. structure without bracket 39.4” (1000 mm)**

| S9- | 020- | 20- | 1000- | 0 |
|---|---|---|---|---|

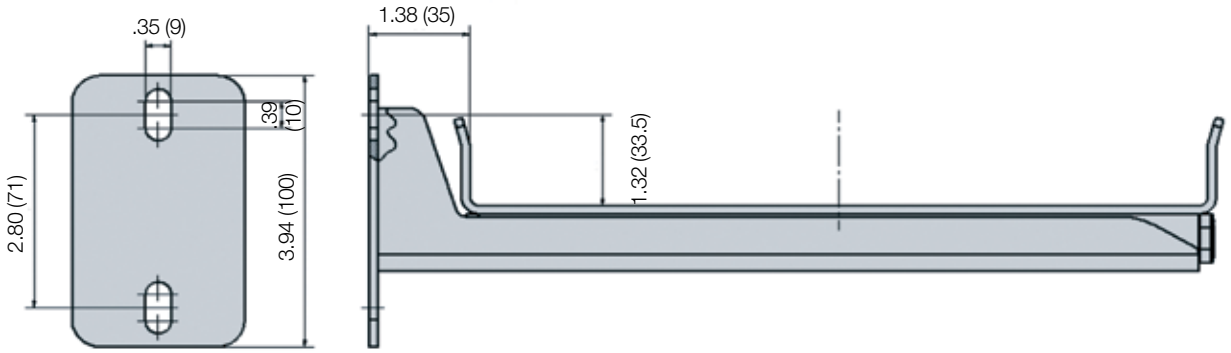
- 0 – Color, powdered black
- 1000- – Length 1000 mm
- 20- – E-Chain®- width
- 020- – without bracket
- S9- – Support tray

**Part No. structure with bracket 78.7” (2000 mm)**

| S9- | 021- | 20- | 2000- | 0 |
|---|---|---|---|---|

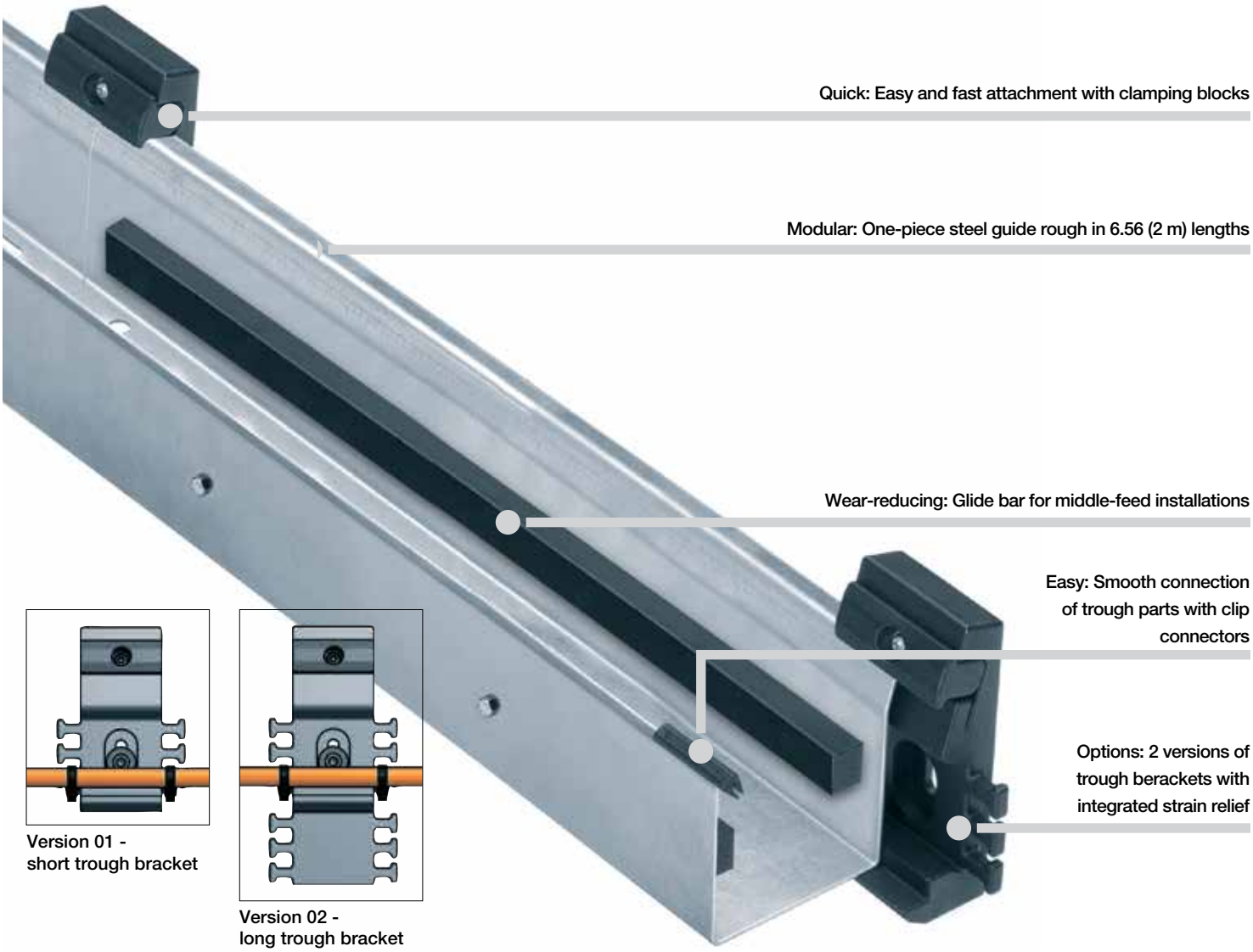
- 0 – Color, powdered black
- 2000- – Length 2000 mm
- 20- – E-Chain®- width
- 021- – with bracket
- S9- – Support tray

## Bracket - Type 02




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Guidefast Guide Trough
# Introduction - Advantages






Version 01 -
short trough bracket



Version 02 -
long trough bracket

## Quickly installed as a modular kit solution for crane girders and indoor cranes

The guidefast guide trough is mounted on the side of the crane girder, in case of installation on crane girders, the welding of brackets onto the girder can be omitted. Installation time is kept very short, the guide trough is only attached to the previously installed brackets and then fixed with clamping blocks. The small amount of different components and trough design contribute to a simple installation.

- Save up to 80% installation time compared to standard trough systems
- Fits virtually any standard crane girder
- 2 versions of brackets with integrated strain relief for assembly of static cables on the crane girder - possible ± .20" (5 mm) vertical adjustment of brackets
- Standard trough length of 6.56 ft. (2.0 m) - with or without glide bar
- Suitable for any side-mounted application - not only on cranes
- Easy to install due to preassembled hole patterns of E-Chain® brackets
- Standard material: galvanized steel, optional: stainless steel V2A, material 1.4301 (AiSI 304) or black powder coating
- Long-term tested to withstand vibration and rough environment

### Typical industries and applications

- Crane manufacturers (mainly indoor cranes)
- Applications where the lateral installation of the guide trough is beneficial

# Guidefast Guide Trough Selection Table

## Guidefast - **without** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

| Trough profile Part No. | For E2/000 E-Chain® | Inner trough width $B_{Ri}$ in. (mm) | Complete width in. (mm) | Material |
|---|---|---|---|---|
| **GF91-30-025-2000** | 1500-025- | 1.67 (42.5) | 3.19 (81) | Galvanized steel* |
| **GF91-30-050-2000** | 1500-050- | 2.66 (67.5) | 4.17 (106) | Galvanized steel* |
| **GF92-30-05-2000** | 2500-05- | 3.03 (77) | 4.55 (115.5) | Galvanized steel* |
| **GF92-30-07-2000** | 2500-07- | 3.82 (97) | 5.33 (135.5) | Galvanized steel* |
| **GF92-30-10-2000** | 2500-10- | 4.84 (123) | 6.36 (161.5) | Galvanized steel* |
| **GF95-30-05-2000** | 2700-05- | 2.76 (70) | 4.27 (108.5) | Galvanized steel* |
| **GF95-30-07-2000** | 2700-07- | 3.89 (96) | 5.26 (133.5) | Galvanized steel* |
| **GF95-30-10-2000** | 2700-10- | 4.72 (120) | 6.24 (158.5) | Galvanized steel* |

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating

## Guidefast - **with** glide bar for E2/000 Series:

- 1500
- 2500
- 2700

| Support tray Part No. | For E2/000 E-Chain® | Inner trough width $B_{Ri}$ in. (mm) | Complete width in. (mm) | Material |
|---|---|---|---|---|
| **GF91-31-025-2000** | 1500-025- | 1.67 (42.5) | 3.19 (81) | Galvanized steel* |
| **GF91-31-050-2000** | 1500-050- | 2.66 (67.5) | 4.17 (106) | Galvanized steel* |
| **GF92-31-05-2000** | 2500-05- | 3.03 (77) | 4.55 (115.5) | Galvanized steel* |
| **GF92-31-07-2000** | 2500-07- | 3.82 (97) | 5.33 (135.5) | Galvanized steel* |
| **GF92-31-10-2000** | 2500-10- | 4.84 (123) | 6.36 (161.5) | Galvanized steel* |
| **GF95-31-05-2000** | 2700-05- | 2.76 (70) | 4.27 (108.5) | Galvanized steel* |
| **GF95-31-07-2000** | 2700-07- | 3.89 (96) | 5.26 (133.5) | Galvanized steel* |
| **GF95-31-10-2000** | 2700-10- | 4.72 (120) | 6.24 (158.5) | Galvanized steel* |

**Support tray with bracket for easy mounting on your application**

# Guidefast Guide Trough Components

For the following Series

**System E2/000 Series:**

- 1500
- 2500
- 2700

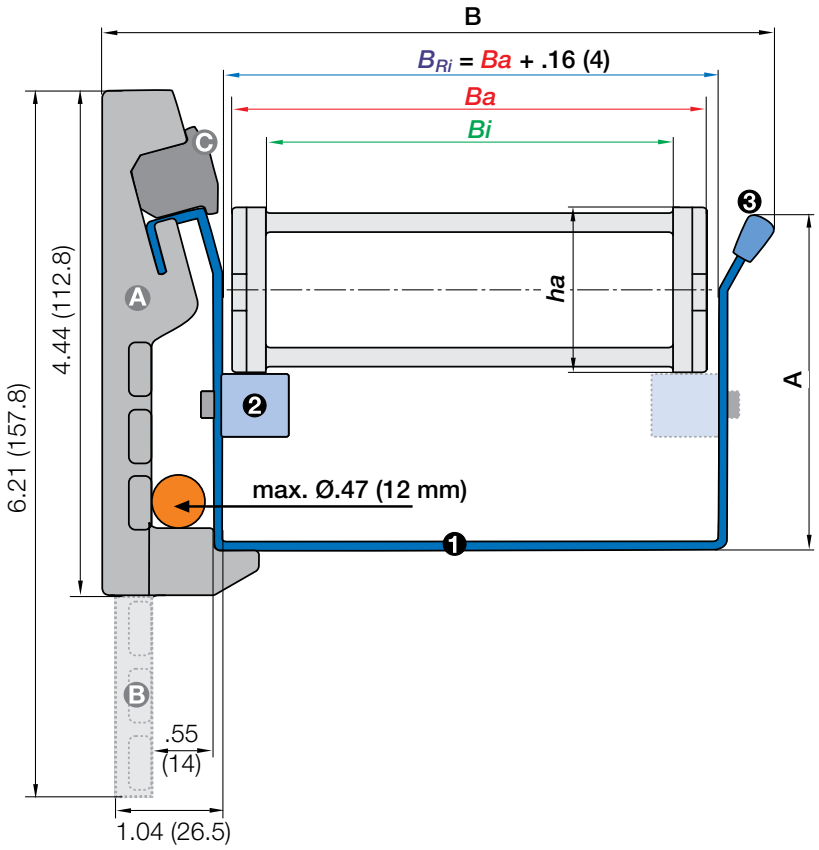
**Components - Set guidefast guide trough**

1. Trough profile, 6.56 ft. (2 m) section
2. Glide bar, 6.56 ft. (2 m) section, optional
3. Clip connector, Part No. 908-467

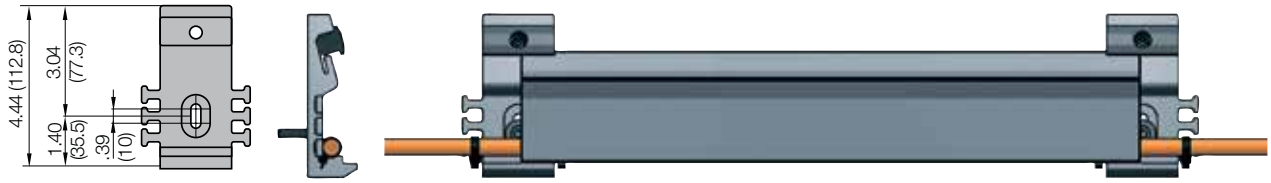
**Components - Set trough bracket**

- A Version 01 - short trough bracket
- B Version 02 - long trough bracket
- C Clamping blocks, Part No. G9-2-10

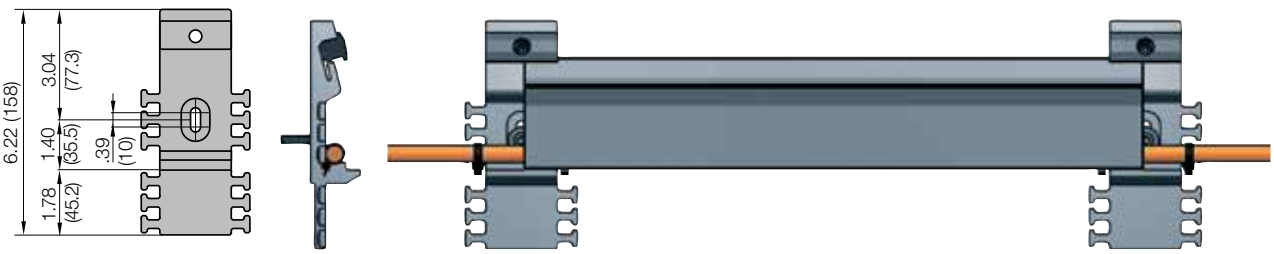
*Ba* = Outer E-Chain® width
*Bi* = Inner E-Chain® width
*ha* = E-Chain® outer height
$B_{Ri}$ = Inner trough width = $B_{Ri}$ = Ba + 4



## 2 Versions of trough brackets with integrated strain relief




**Version 01 - short trough bracket Part No. GF9.2.12** with integrated strain relief, possible ± .20" (5 mm) vertical adjustment




**Version 02 - long trough bracket Part No. GF9-2-11** with integrated strain relief, possible ± .20" (5 mm) vertical adjustment

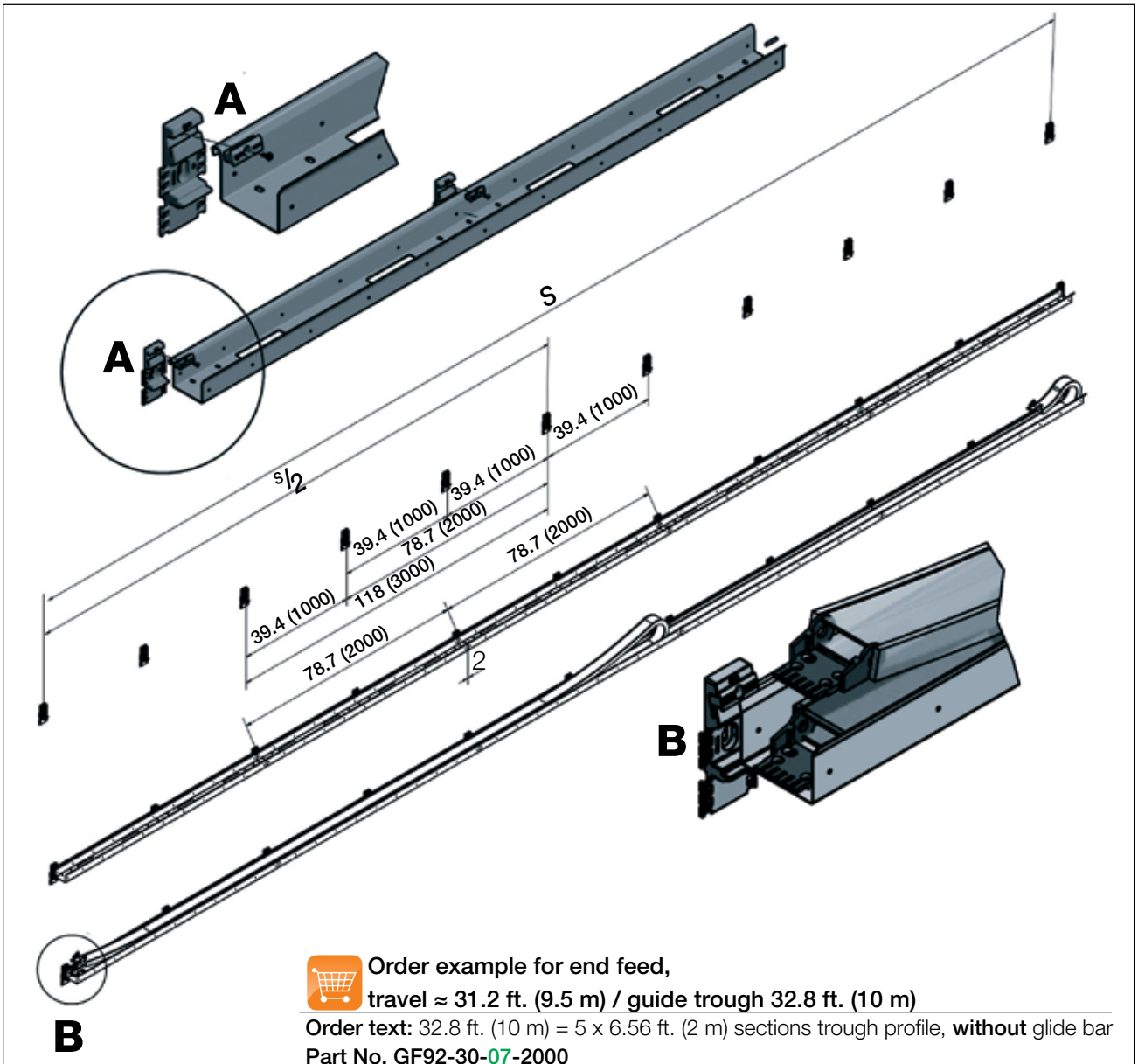
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Guidefast Guide Trough Product Range



| For E2/000 E-Chain® | Trough Profile* without glide bar | Trough profile* with glide bar | Short Bracket Version 01 | Long Bracket Version 02 | Inner trough width $B_{Ri}$ | Dim. A in. (mm) | Dim. B in. (mm) |
|---|---|---|---|---|---|---|---|
| | includes clip connectors | | includes clamping blocks | | | | |
| 1500-025- ➤ | GF91-30-025-2000 | GF91-31-025-2000 | GF9-2-12 | GF9-2-11 | 1.67 (42.5) | 2.40 (61) | 3.19 (81) |
| 1500-050- ➤ | GF91-30-050-2000 | GF91-31-050-2000 | GF9-2-12 | GF9-2-11 | 2.66 (67.5) | 2.40 (61) | 4.17 (106) |
| 2500-05- ➤ | GF92-30-05-2000 | GF92-31-05-2000 | GF9-2-12 | GF9-2-11 | 3.03 (77) | 2.95 (75) | 4.55 (115.5) |
| 2500-07- ➤ | GF92-30-07-2000 | GF92-31-07-2000 | GF9-2-12 | GF9-2-11 | 3.82 (97) | 2.95 (75) | 5.33 (135.5) |
| 2500-10- ➤ | GF92-30-10-2000 | GF92-31-10-2000 | GF9-2-12 | GF9-2-11 | 4.84 (123) | 2.95 (75) | 6.36 (161.5) |
| 2700-05- ➤ | GF95-30-05-2000 | GF95-31-05-2000 | GF9-2-12 | GF9-2-11 | 2.76 (70) | 4.13 (105) | 4.27 (108.5) |
| 2700-07- ➤ | GF95-30-07-2000 | GF95-31-07-2000 | GF9-2-12 | GF9-2-11 | 3.89 (96) | 4.13 (105) | 5.26 (133.5) |
| 2700-10- ➤ | GF95-30-10-2000 | GF95-31-10-2000 | GF9-2-12 | GF9-2-11 | 4.72 (120) | 4.13 (105) | 6.24 (158.5) |

*Standard material: Galvanized steel. Also available as stainless steel version V2A, material 1.4301 (AISI 304) or black powder coating




**Order example for end feed,**
**travel ≈ 31.2 ft. (9.5 m) / guide trough 32.8 ft. (10 m)**

**Order text:** 32.8 ft. (10 m) = 5 x 6.56 ft. (2 m) sections trough profile, **without** glide bar
**Part No. GF92-30-07-2000**

**Order text:** 11 x **"long"** version trough brackets
**Part No. GF9-2-11**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

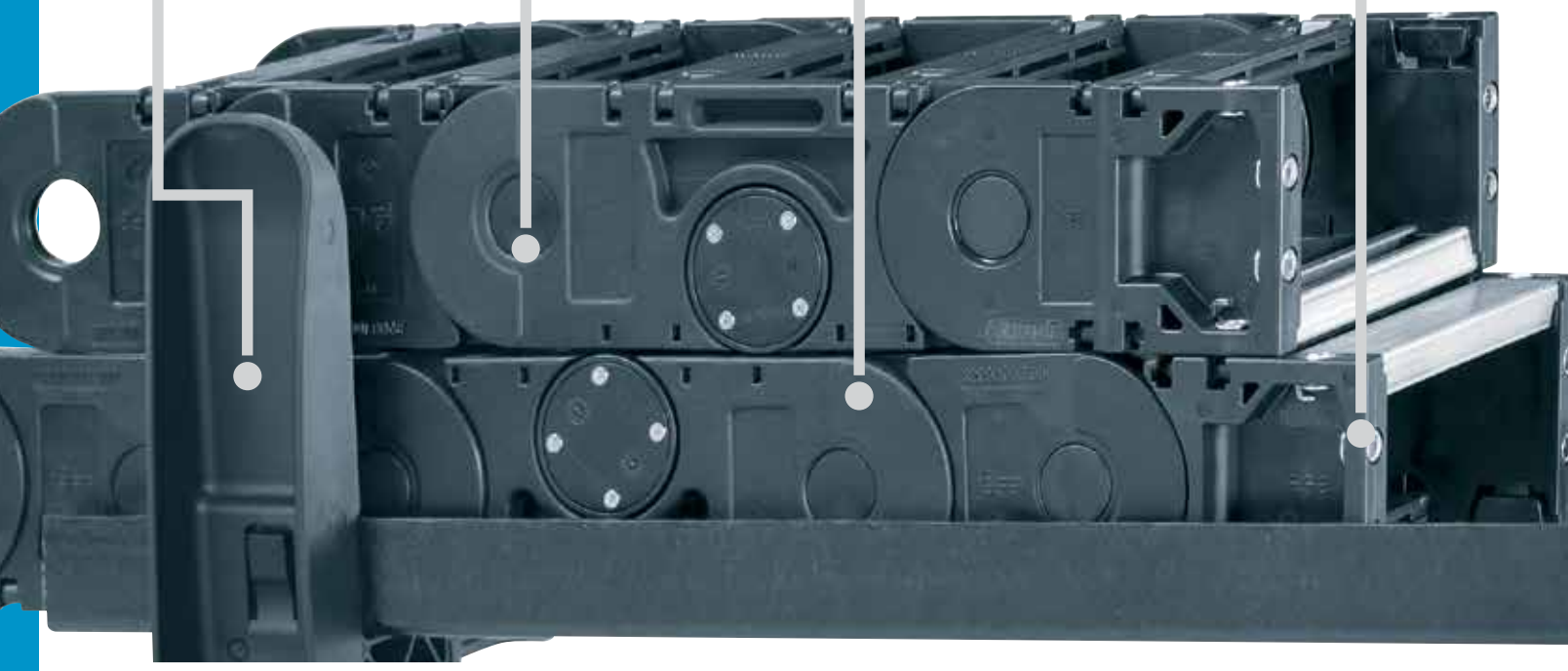
# Guidelite Guide Trough
# Introduction - Advantages

**Corrosion-resistant:**
Made completely from plastic components

**Cost-effective:**
Construction kit solution with E-Chain®

**Save time:**
Easy and fast assembly

**2 Versions installation sets:**
**01)** with crossbar for a fixed width or
**02)** profile rail for a larger range of widths



## Realize long travels up to 492 ft. (150 m), quick and cost-effective - Guidelite

As construction kit system primarily for slow applications with low cycle counts. The lower run of the E-Chain® is guided in two L-shaped guide rails made from fibreglass reinforced plastics. The upper run of the E-Chain® is partially guided by guide angle brackets that are installed at distances of 3.28 ft. (1m). One option to obtain the correct width is to install clip-on crossbars (Version 01) between the retainers. This greatly simplifies the installation since no retroactive adjustments are needed. Another option, which facilitates a greater range of widths, is to mount the guide angle brackets on a profile rail (Version 02).

- Save up to 80% installation time compared to standard trough systems
- Saving time through fast assembly
- Very lightweight polymer components - more quieter than troughs made from steel
- Cost-effective
- Corrosion-resistant
- Gliding application: maximum speed 3.28 ft/s (1 m/s)
- Unsupported application (Guidelite as support tray): maximum speed 16.41 ft/s (5 m/s)
  (Higher speeds can be attained. Please contact us for details)
- Construction kit solution

### Typical industries and applications

- Watering cars (irrigation of potted plants)
- For applications with low number of cycles, low speed and additional load
- As cost-effective support tray for unsupported applications

# Guidelite Guide Trough Selection Table

## Guidelite - Version 01
## Installation set with crossbar, standard

Fixed width due to clip-on crossbars, no retroactive adjustments needed

| Part No.<br>Assembly set - Guide Angles | For E-Chain®<br>Series |
|---|---|
| 9GL-64-50-450-XX | • 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32 |

## Guidelite - Version 02
## Installation set with profile rail

Guide angle brackets are assembled on a profile rail for a larger range of widths

| Part No.<br>Assembly set - Guide Angles | For E-Chain®<br>Series |
|---|---|
| 9GL-64-50-450-XX | • 1500 • 2500 • 2700 • 3500 • E4-21 • E4-28 • E4-32 |

E2/000 Rol E-Chain® in a Guidelite guide trough of an irigation plant

# Guidelite Guide Trough Components - Version 01

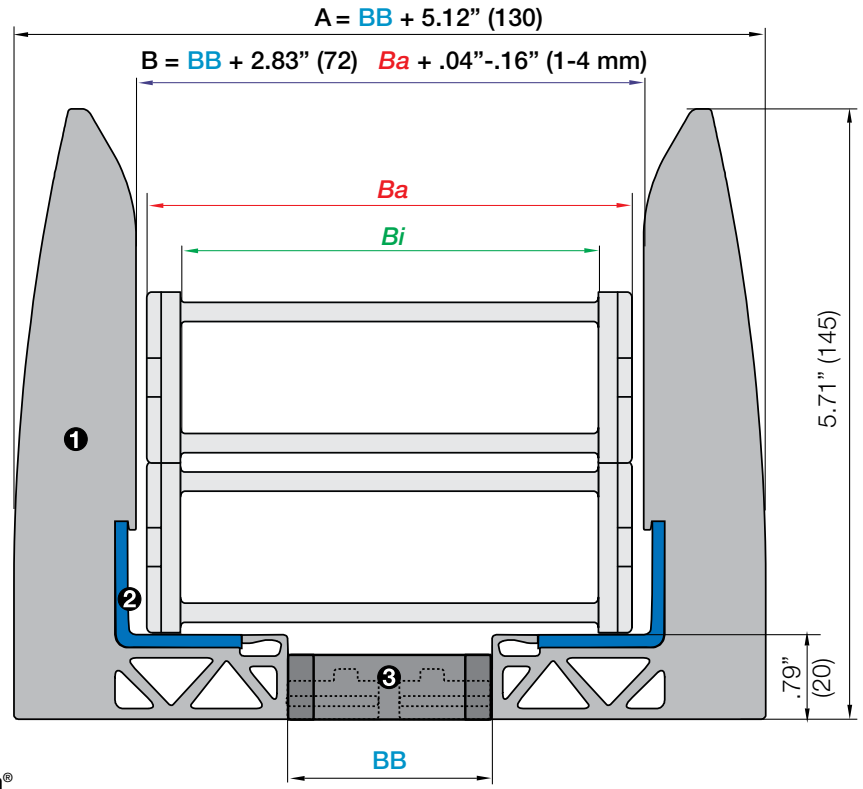
For the following Series

**System E2/000 Series:**

- 2500
- 2700
- 3500

**System E4-1 Series:**

- E4-21
- E4-28
- E4-32




## Components - Version 01

1. Guide angles
2. Plastic guide rail
3. Crossbar, clip-on

*Ba* = Outer E-Chain® width
*Bi* = Inner E-Chain® width
BB = Length of crossbar
A = Outer guide angle distance
B = Inner guide angle distance

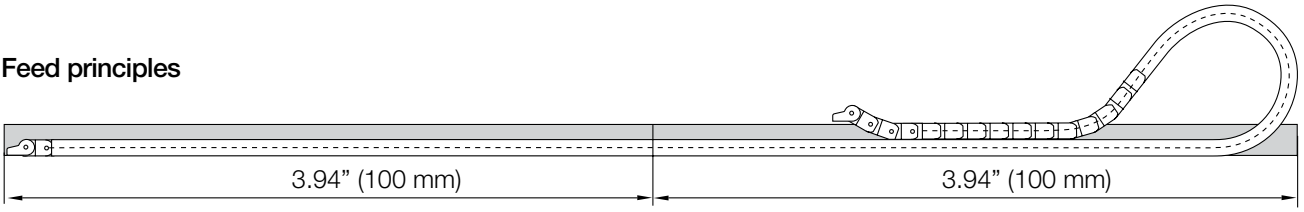
**Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the E-Chain®**

## guidelite | Version 01

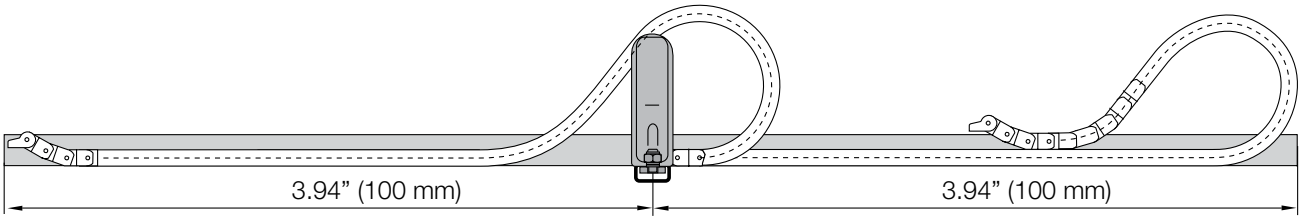
| Description | Part No. |
|---|---|
| Installation set with crossbar for a fixed width, consisting of | 9GL-64-50-450-XX |
| 2 x plastic guide rails + 1 x crossbar | (XX = crossbar width-index) |
| Set plastic guide rails (left and right) | 9GL-64-30-2000 |
| in specified lengths: standard 78.7" (2000 mm) | |
| Feed module that guides the upper run of the E-Chain® down, 78.7" (2000 mm) | 9GL-64-80-Series-450-XX |
| **Only for Series 2700R and 3500R RoI E-Chain® with center feed** | (XX = crossbar width-index |

**Please add the crossbar width-index XX as shown on the tables on the right page. Example: 9GL-64-50-450-05**

## Feed principles




**End feed is recommended for all E-Chains® in combination with guidelite**




**Center feed is only used with RoI E-Chains® of Series 2700R and Series 3500R.**
**Please use the feed module 9GL-64-80 of Series 450-XX, which guides the upper run of the E-Chain® down.**

More information and assembly instructions ➤ www.igus.com/guidelite

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Guidelite Guide Trough
# Product Range - Version 01

| Part No. Installation Set | For E-Chain® Series | For RoI E-Chain® Series | Length of Crossbar BB | | Outer guide angle Distance A | | Inner guide angle Distance B | |
|---|---|---|---|---|---|---|---|---|
| | | | in. | (mm) | in. | (mm) | in. | (mm) |
| 9GL-64-50-450-05 | 2500-10-*R*-0 | – | 1.97 | (50) | 7.09 | (180) | 4.80 | (122) |
| 9GL-64-50-450-12 | 2700-17-*R*-0 | 2700R-17-*R*-0 | 4.92 | (125) | 10.04 | (255) | 7.76 | (197) |
| 9GL-64-50-450-05 | 3500-100-*R*-0 | 3500R-100-*R*-0 | 1.97 | (50) | 7.09 | (180) | 4.80 | (122) |
| 9GL-64-50-450-06 | 3500-115-*R*-0 | 3500R-115-*R*-0 | 2.56 | (65) | 7.68 | (195) | 5.39 | (137) |
| 9GL-64-50-450-07 | 3500-125-*R*-0 | 3500R-125-*R*-0 | 2.95 | (75) | 8.07 | (205) | 5.79 | (147) |
| 9GL-64-50-450-10 | 3500-150-*R*-0 | 3500R-150-*R*-0 | 3.94 | (100) | 9.06 | (230) | 6.77 | (172) |
| 9GL-64-50-450-12 | 3500-175-*R*-0 | 3500R-175-*R*-0 | 4.92 | (125) | 10.04 | (255) | 7.76 | (197) |
| 9GL-64-50-450-15 | 3500-200-*R*-0 | 3500R-200-*R*-0 | 5.91 | (150) | 11.02 | (280) | 8.74 | (222) |
| 9GL-64-50-450-17 | 3500-225-*R*-0 | 3500R-225-*R*-0 | 6.89 | (175) | 12.01 | (305) | 9.72 | (247) |
| 9GL-64-50-450-20 | 3500-250-*R*-0 | 3500R-250-*R*-0 | 7.87 | (200) | 12.99 | (330) | 10.71 | (272) |
| 9GL-64-50-450-06 | E4-21-120-*R*-0 | – | 2.56 | (65) | 7.68 | (195) | 5.39 | (137) |
| 9GL-64-50-450-05 | E4-28-100-*R*-0 | – | 1.97 | (50) | 7.09 | (180) | 4.80 | (122) |
| 9GL-64-50-450-07 | E4-28-125-*R*-0 | – | 2.95 | (75) | 8.07 | (205) | 5.79 | (147) |
| 9GL-64-50-450-05 | E4-32-097-*R*-0 | – | 1.97 | (50) | 7.09 | (180) | 4.80 | (122) |
| 9GL-64-50-450-06 | E4-32-112-*R*-0 | – | 2.56 | (65) | 7.68 | (195) | 5.39 | (137) |

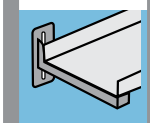
Dimension B must always be .04" to .16" (1 to 4 mm) larger than the *Ba* of the E-Chain®

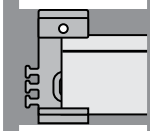
Ideal for outdoor applications - UV resistant, corrosion-free, allows dirt to pass through

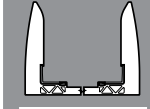
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

AL

ST







# Guidelite Guide Trough Components - Version 02

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

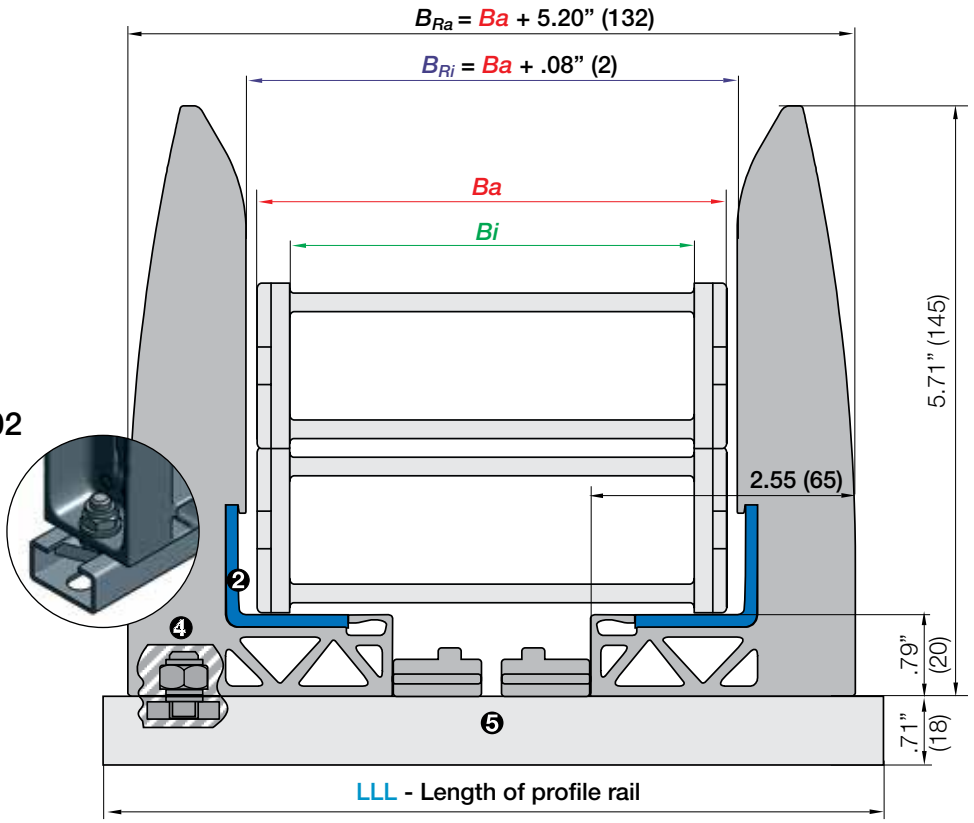
For the following Series

| System E2/000 Series: |
|---|
| ● 1500 |
| ● 2500 |
| ● 2700 |
| ● 3500 |
| **System E4-1 Series:** |
| ● E4-21 |
| ● E4-28 |
| ● E4-32 |

## Components - Version 02

❶ Guide angles
❷ Plastic guide rail
❹ Screwset M8
❺ C-profile

Ba = Outer E-Chain® width
Bi = Inner E-Chain® width
$B_{RA}$ = Outer guide angle distance
$B_{Ri}$ = Inner guide angle distance
**$B_{Ri}$ = Ba + 2**

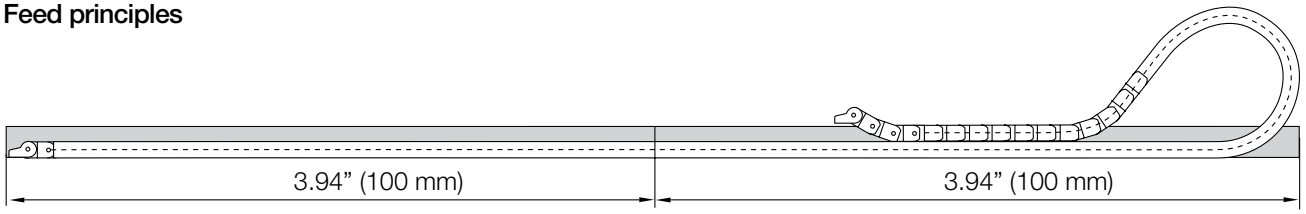



## guidelite | Version 02

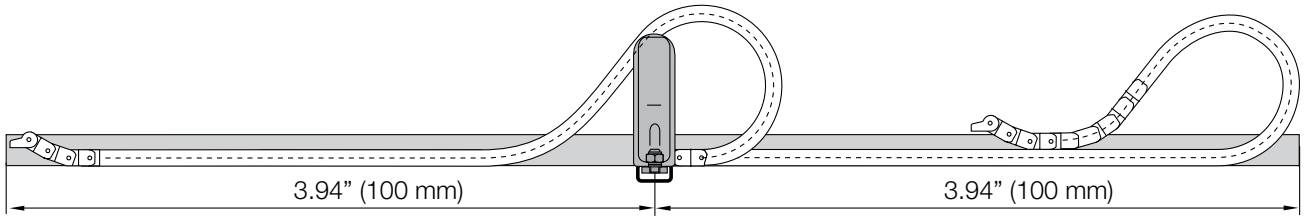
| Description | Part No. |
|---|---|
| Installation set with profile rail consisting of | 9GL-64-50-LLL |
| 2 x plastic guide rails + 1 x profile rail + Screwsets M8 | (LLL = Length of profile rail) |
| Set plastic guide rails (left and right) | 9GL-64-30-2000 |
| in specified lengths: standard 78.7" (2000 mm) | |
| Feed module that guides the upper run of the E-Chain® down, 78.7" (2000 mm) | 9GL-64-80-Series-LLL |
| **Only for Series 2700R and 3500R RoI E-Chain® with center feed** | (LLL = Length of profile rail) |

**Please add the profile rail length LLL as shown on the tables on the right page. Example: 9GL-64-50-175**

## Feed principles




**End feed is recommended for all E-Chains® in combination with guidelite**




**Center feed is only used with RoI E-Chains® of Series 2700R and Series 3500R.**
**Please use the feed module 9GL-64-80 of Series 450-XX, which guides the upper run of the E-Chain® down.**

More information and assembly instructions ➤ www.igus.com/guidelite

# Guidelite Guide Trough
# Product Range - Version 02



| Part No- Installation Set | For E-Chain® Series | For RoI E-Chain® Series |
|---|---|---|
| **1500** | | |
| 9GL-64-50-150 | 1500-068-*R*-0 | – |
| 9GL-64-50-175 | 1500-080-*R*-0 | – |
| 9GL-64-50-175 | 1500-100-*R*-0 | – |
| 9GL-64-50-200 | 1500-125-*R*-0 | – |
| **2500** | | |
| 9GL-64-50-150 | 2500-05-*R*-0 | – |
| 9GL-64-50-175 | 2500-07-*R*-0 | – |
| 9GL-64-50-175 | 2500-09-*R*-0 | – |
| 9GL-64-50-200 | 2500-10-*R*-0 | – |
| 9GL-64-50-225 | 2500-12-*R*-0 | – |
| **2700** | | |
| 9GL-64-50-150 | 2700-06-*R*-0 | 2700R-06-*R*-0 |
| 9GL-64-50-175 | 2700-07-*R*-0 | 2700R-07-*R*-0 |
| 9GL-64-50-175 | 2700-09-*R*-0 | 2700R-09-*R*-0 |
| 9GL-64-50-200 | 2700-10-*R*-0 | 2700R-10-*R*-0 |
| 9GL-64-50-225 | 2700-12-*R*-0 | 2700R-12-*R*-0 |
| 9GL-64-50-250 | 2700-15-*R*-0 | 2700R-15-*R*-0 |
| 9GL-64-50-275 | 2700-17-*R*-0 | 2700R-17-*R*-0 |
| **3500** | | |
| 9GL-64-50-175 | 3500-075-*R*-0 | 3500R-075-*R*-0 |
| 9GL-64-50-200 | 3500-100-*R*-0 | 3500R-100-*R*-0 |
| 9GL-64-50-200 | 3500-115-*R*-0 | 3500R-115-*R*-0 |
| 9GL-64-50-225 | 3500-125-*R*-0 | 3500R-125-*R*-0 |
| 9GL-64-50-250 | 3500-150-*R*-0 | 3500R-150-*R*-0 |
| 9GL-64-50-275 | 3500-175-*R*-0 | 3500R-175-*R*-0 |
| 9GL-64-50-300 | 3500-200-*R*-0 | 3500R-200-*R*-0 |
| 9GL-64-50-325 | 3500-225-*R*-0 | 3500R-225-*R*-0 |
| 9GL-64-50-350 | 3500-250-*R*-0 | 3500R-250-*R*-0 |
| **E4-21** | | |
| 9GL-64-50-150 | E4-21-060-*R*-0 | – |
| 9GL-64-50-150 | E4-21-070-*R*-0 | – |
| 9GL-64-50-175 | E4-21-080-*R*-0 | – |
| 9GL-64-50-175 | E4-21-090-*R*-0 | – |
| 9GL-64-50-175 | E4-21-100-*R*-0 | – |
| 9GL-64-50-200 | E4-21-110-*R*-0 | – |
| 9GL-64-50-200 | E4-21-120-*R*-0 | – |

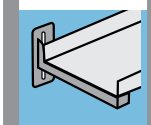
| Part No- Installation Set | For E-Chain® Series | For RoI E-Chain® Series |
|---|---|---|
| **E4-28** | | |
| 9GL-64-50-150 | E4-28-062-*R*-0 | – |
| 9GL-64-50-175 | E4-28-070-*R*-0 | – |
| 9GL-64-50-175 | E4-28-075-*R*-0 | – |
| 9GL-64-50-175 | E4-28-087-*R*-0 | – |
| 9GL-64-50-200 | E4-28-100-*R*-0 | – |
| 9GL-64-50-225 | E4-28-125-*R*-0 | – |
| 9GL-64-50-250 | E4-28-150-*R*-0 | – |
| 9GL-64-50-275 | E4-28-175-*R*-0 | – |
| 9GL-64-50-300 | E4-28-200-*R*-0 | – |
| 9GL-64-50-325 | E4-28-225-*R*-0 | – |
| 9GL-64-50-350 | E4-28-250-*R*-0 | – |
| 9GL-64-50-375 | E4-28-275-*R*-0 | – |
| 9GL-64-50-400 | E4-28-300-*R*-0 | – |
| **E4-32** | | |
| 9GL-64-50-150 | E4-32-05-*R*-0 | – |
| 9GL-64-50-175 | E4-32-06-*R*-0 | – |
| 9GL-64-50-175 | E4-32-07-*R*-0 | – |
| 9GL-64-50-175 | E4-32-087-*R*-0 | – |
| 9GL-64-50-200 | E4-32-09-*R*-0 | – |
| 9GL-64-50-200 | E4-32-10-*R*-0 | – |
| 9GL-64-50-200 | E4-32-11-*R*-0 | – |
| 9GL-64-50-200 | E4-32-112-*R*-0 | – |
| 9GL-64-50-225 | E4-32-12-*R*-0 | – |
| 9GL-64-50-225 | E4-32-137-*R*-0 | – |
| 9GL-64-50-250 | E4-32-15-*R*-0 | – |
| 9GL-64-50-275 | E4-32-162-*R*-0 | – |
| 9GL-64-50-275 | E4-32-17-*R*-0 | – |
| 9GL-64-50-275 | E4-32-18-*R*-0 | – |
| 9GL-64-50-275 | E4-32-187-*R*-0 | – |
| 9GL-64-50-300 | E4-32-200-*R*-0 | – |
| 9GL-64-50-300 | E4-32-212-*R*-0 | – |
| 9GL-64-50-325 | E4-32-23-*R*-0 | – |
| 9GL-64-50-325 | E4-32-237-*R*-0 | – |
| 9GL-64-50-350 | E4-32-25-*R*-0 | – |
| 9GL-64-50-350 | E4-32-262-*R*-0 | – |
| 9GL-64-50-375 | E4-32-28-*R*-0 | – |
| 9GL-64-50-375 | E4-32-29-*R*-0 | – |
| 9GL-64-50-400 | E4-32-30-*R*-0 | – |

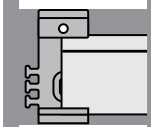
Please note: the smallest possible inner width of the guide trough is 2.83 (72 mm).

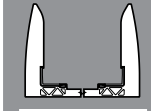
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

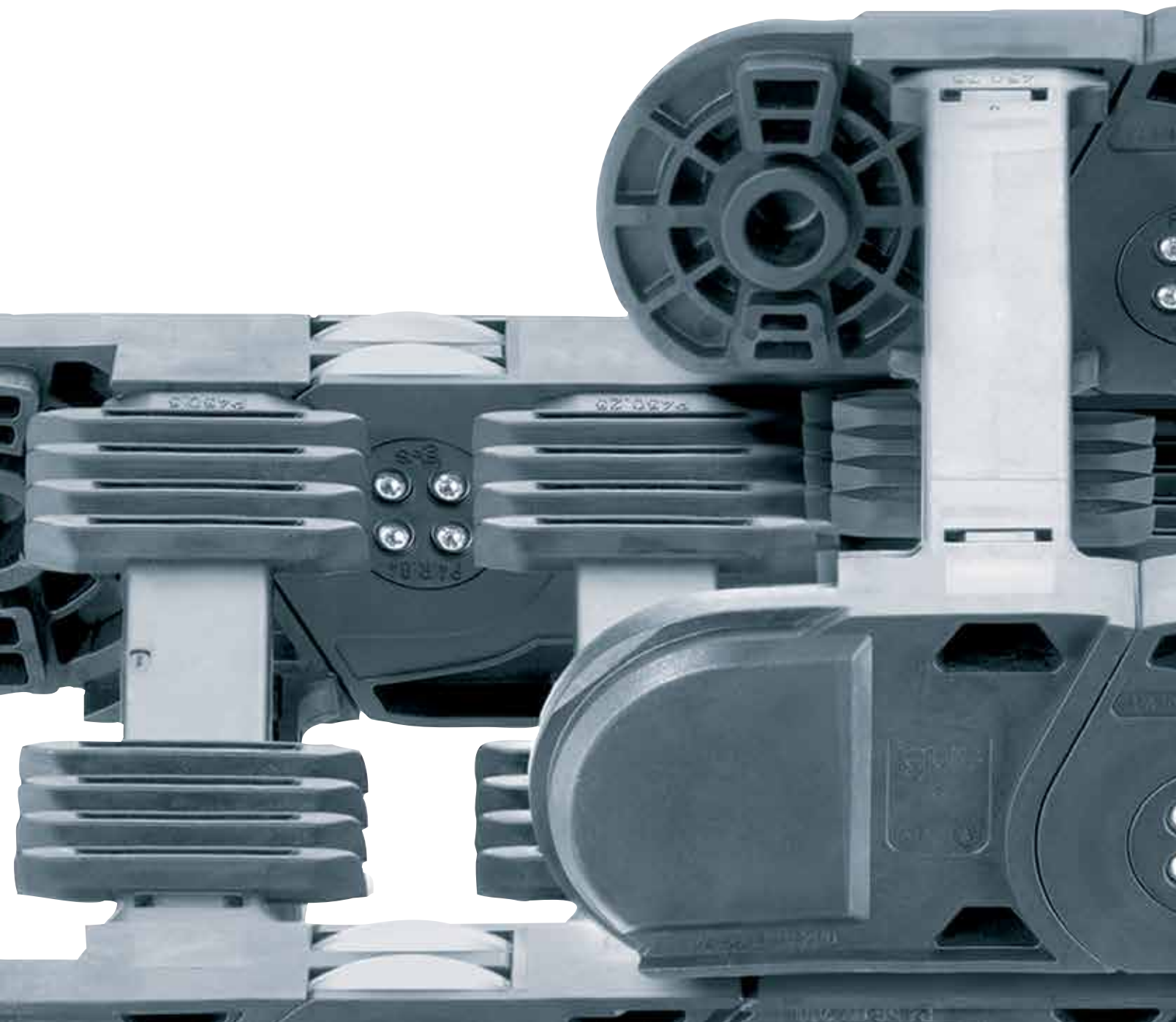
AL

ST



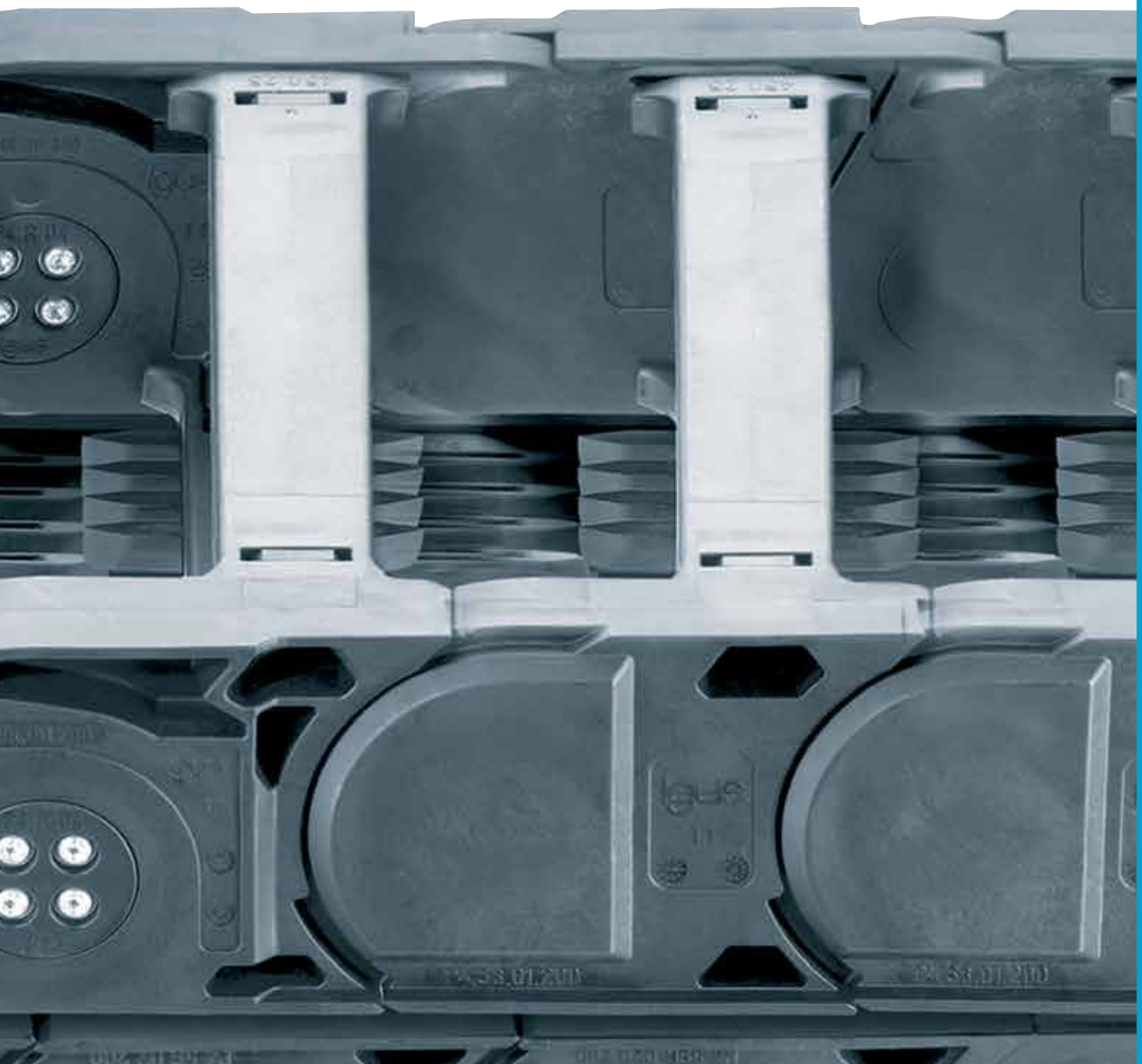






# E-Chains®
# for long travels

## E4/4HD - P4
## Rol E-Chains® - AUTO-GLIDE



# E4/4 HD - for extremely high additional fill weights on long travels

The E4/4HD system was designed for the most demanding tasks. It provides the required stability in long travels with high additional weights, heavy pollution or high humidity. The extremely sturdy side plates allow high loads, the stable tongue and groove ensures extremely high torsional stiffness. A longer service life is due to the particularly large glide surfaces.

- For extremely high additional fill weights and long travels
- Ideal for heavy duty applications

**Typical industries and applications**

- Cranes: RTG, Quay cranes, many more
- Compost plants
- Heavy machinery
- Steel plants
- Shipyards
- Farm machinery
- General machinery

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

System E4/4 approved with long travel

E-Tubes available as a special design with HT material for hot chips

The maintenance-free Series 4040HD protects the igus® Chainflex® motor and signal cables during the lifting and lowering movements of the tidal turbine and also protects them against aggressive ambient conditions. The travel distance amounts to approximately 65.6 ft. (20 m) in vertical direction above and under water.

## Crossbars every link
for particularly demanding applications

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) |
|---|---|---|---|---|---|
| **4040HD** | 2.20 (56) | 1.97-23.62 (50-600) | 4.09-25.75 (104-654) | 3.31 (84) | 5.31-15.75 (135-400) |
| **5050HD** | 3.15 (80) | 1.97-23.62 (50-600) | 4.33-25.98 (110-660) | 4.25 (108) | 5.91-19.69 (150-500) |

## E-Tubes
fully enclosed, excellent cable protection against hot chips

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) |
|---|---|---|---|---|---|
| **R8840HD** | 2.20 (56) | 2.95-18.19 (75-462) | 5.08-20.31 (129-516) | 3.31 (84) | 5.91-15.75 (150-400) |
| **R9850HD** | 3.15 (80) | 2.95-18.19 (75-462) | 5.31-20.55 (135-522) | 4.25 (108) | 5.91-19.69 (150-500) |

# E-Chain System® E4/4
# Series 4040HD/R8840HD

2.20” 2.20”

## Price Index

Series 4040HD  Series R8840HD

## Special Features / Options

Side-mounted - unsupported

ESD classification: Electrically conductive ESD/ ATEX version upon request

High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 328 ft (100 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

## Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- If a quieter version is required
  ➤ **Series E4-56**
- If a simple and low-cost solution is required
  ➤ **Series 14040/R18840**

## Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. High tensile stability (20% higher tensile force than Series 4040
4. Very wide glide surface, less wear
5. Closed and open styles can be combine
6. High torsional rigidity
7. Hinged snap-open removable lids along outer radius of Energy Tub
8. High side-mount stability due to undercut
9. Crossbars on E-Chains® are removable along both radii
10. Numerous interior separation possibilities

RoI-E-Chain® Series 4040RHD/8840RHD available upon request

## Order Example: Complete E-Chain®

Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **4040HD-30-300-0** | **E-Chain®** |
| With 2 separators **56-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **40400HD-12-E** | **Mounting Bracket** |

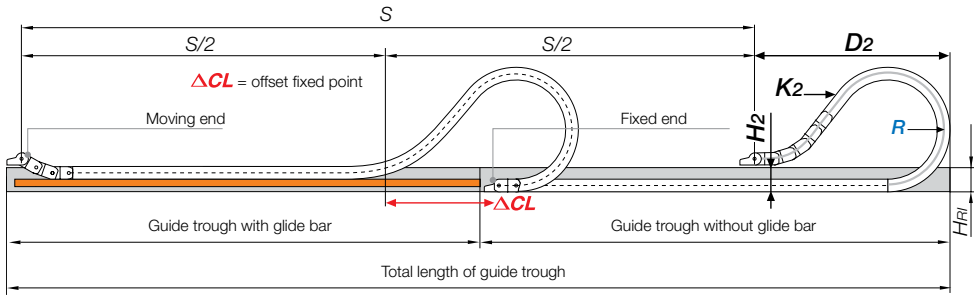
# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Installation Dimensions



## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft. (10m) to max. 1,148 ft. (350m)**

**Chain length: =** $S/2 + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 5.31 (135) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2$ | 15.35 (390) | 17.72 (450) | 27.95 (710) | 36.22 (920) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) |
| $K_2$ | 28.66 (728) | 32.24 (819) | 50.16 (1274) | 64.49 (1638) | 78.82 (2002) | 93.15 (2366) | 100.31(2548) |
| ΔCL | 4.88 (124) | 6.26 (159) | 14.13 (359) | 20.04 (509) | 27.91 (709) | 35.79 (909) | 37.76 (959) |

### Legend

S = Length of travel
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Over length - long travels, gliding
$K_2$ = *Further add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Technical Data

Details of material properties ➤

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

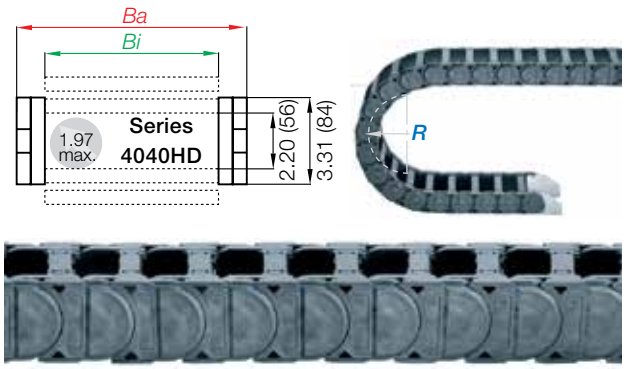
# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Product Range

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

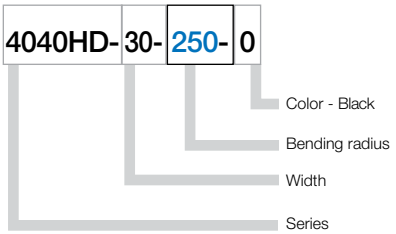
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 4040HD - E-Chain® with crossbars every link

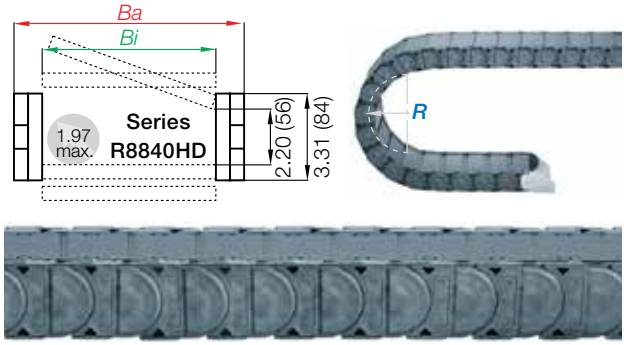



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

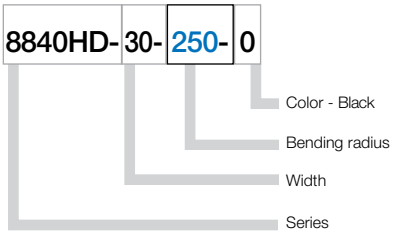



## Series R8840HD - fully enclosed E-Tube

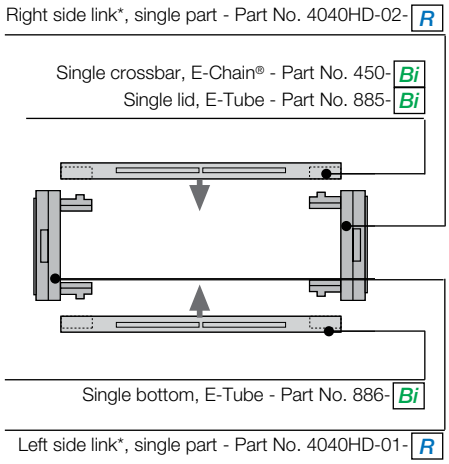


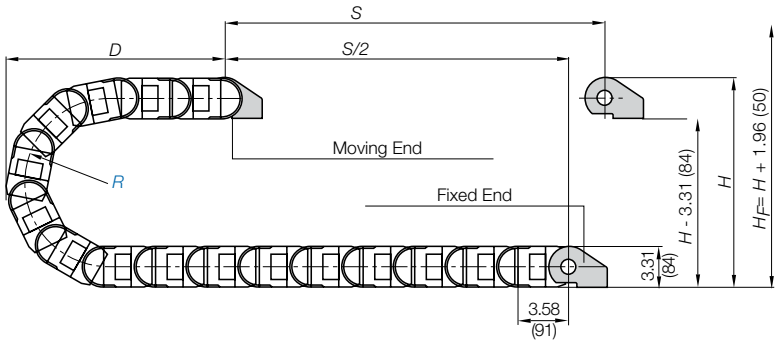

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1652°F (900°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Product Range

Supplement part number with required radius. Example: 4040HD-30-300 -0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number | | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | | in. (mm) | in. (mm) | 4040R lbs/ft (kg/m) | 8840HD lbs/ft (kg/m) |
| 4040HD-05- | | | -0 | 1.97 (50) | 4.09 (104) | ≈ 3.38 (5.03) | – |
| 4040HD-06- | | | -0 | 2.56 (65) | 4.69 (119) | ≈ 3.44 (5.12) | – |
| 4040HD-07- | 8840HD-07- | | -0* | 2.95 (75) | 5.08 (129) | ≈ 3.49 (5.19) | ≈ 3.79 (5.64) |
| 4040HD-08- | | | -0 | 3.43 (87) | 5.55 (141) | ≈ 3.54 (5.27) | – |
| 4040HD-10- | 8840HD-10- | | -0 | 3.94 (100) | 6.06 (154) | ≈ 3.60 (5.36) | ≈ 3.98 (5.93) |
| 4040HD-11- | | | -0 | 4.41 (112) | 6.54 (166) | ≈ 3.68 (5.48) | – |
| 4040HD-12- | 8840HD-12- | | -0 | 4.92 (125) | 7.05 (179) | ≈ 3.74 (5.56) | ≈ 4.23 (6.29) |
| 4040HD-13- | | | -0 | 5.39 (137) | 7.52 (191) | ≈ 3.82 (5.69) | – |
| 4040HD-15- | 8840HD-15- | | -0 | 5.91 (150) | 8.03 (204) | ≈ 3.85 (5.73) | ≈ 4.48 (6.67) |
| 4040HD-16- | | | -0 | 6.38 (162) | 8.50 (216) | ≈ 3.92 (5.84) | – |
| 4040HD-17- | 8840HD-17- | | -0 | 6.89 (175) | 9.02 (229) | ≈ 4.01 (5.97) | ≈ 4.69 (6.98) |
| 4040HD-18- | | | -0 | 7.36 (187) | 9.49 (241) | ≈ 4.09 (6.09) | – |
| 4040HD-20- | 8840HD-20- | | -0 | 7.87 (200) | 10.00 (254) | ≈ 4.13 (6.14) | ≈ 4.90 (7.29) |
| 4040HD-21- | | | -0 | 8.35 (212) | 10.47 (266) | ≈ 4.17 (6.21) | – |
| 4040HD-22- | | | -0 | 8.86 (225) | 10.98 (279) | ≈ 4.22 (6.28) | – |
| 4040HD-23- | | | -0 | 9.33 (237) | 11.46 (291) | ≈ 4.29 (6.39) | – |
| 4040HD-25- | 8840HD-25- | | -0 | 9.84 (250) | 11.97 (304) | ≈ 4.37 (6.50) | ≈ 5.39 (8.02) |
| 4040HD-26- | | | -0 | 10.31 (262) | 12.44 (316) | ≈ 4.43 (6.59) | – |
| 4040HD-27- | 8840HD-27 | | -0 | 10.83 (275) | 12.95 (329) | ≈ 4.50 (6.70) | ≈ 5.63 (8.38) |
| 4040HD-28- | | | -0 | 11.30 (287) | 13.43 (341) | ≈ 4.54 (6.75) | – |
| 4040HD-30- | 8840HD-30- | | -0 | 11.81 (300) | 13.94 (354) | ≈ 4.64 (6.91) | ≈ 5.83 (8.68) |
| 4040HD-31- | | | -0 | 12.28 (312) | 14.41 (366) | ≈ 4.66 (6.94) | – |
| 4040HD-32- | | | -0 | 12.79 (325) | 14.92 (379) | ≈ 4.74 (7.05) | – |
| 4040HD-33- | | | -0 | 13.27 (337) | 15.39 (391) | ≈ 4.82 (7.17) | – |
| 4040HD-35- | 8840HD-35- | | -0 | 13.78 (350) | 15.91 (404) | ≈ 4.95 (7.37) | ≈ 6.30 (9.38) |
| 4040HD-36- | | | -0 | 14.25 (362) | 16.38 (416) | ≈ 4.89 (7.28) | – |
| 4040HD-37- | | | -0 | 14.76 (375) | 16.89 (429) | ≈ 4.96 (7.38) | – |
| 4040HD-38- | | | -0 | 15.24 (387) | 17.36 (441) | ≈ 5.03 (7.49) | – |
| 4040HD-40- | 8840HD-40- | | -0 | 15.75 (400) | 17.87 (454) | ≈ 5.21 (7.76) | ≈ 6.98 (10.38) |
| 4040HD-41- | | | -0 | 16.22 (412) | 18.35 (466) | ≈ 5.16 (7.68) | – |
| 4040HD-42- | | | -0 | 16.73 (425) | 18.86 (479) | ≈ 5.36 (7.98) | – |
| 4040HD-43- | | | -0 | 17.20 (437) | 19.33 (491) | ≈ 5.25 (7.82) | – |
| 4040HD-45- | | | -0 | 17.72 (450) | 19.84 (504) | ≈ 5.48 (8.15) | – |
| 4040HD-46- | 8840HD-46- | | -0 | 18.19 (462) | 20.31 (516) | ≈ 5.44 (8.10) | ≈ 7.29 (10.85) |
| 4040HD-47- | | | -0 | 18.70 (475) | 20.83 (529) | ≈ 5.47 (8.14) | – |
| 4040HD-48- | | | -0 | 19.17 (487) | 21.30 (541) | ≈ 5.64 (8.39) | – |
| 4040HD-50- | | | -0 | 19.69 (500) | 21.81 (554) | ≈ 5.64 (8.40) | – |
| 4040HD-51- | | | -0 | 20.16 (512) | 22.28 (566) | ≈ 5.70 (8.48) | – |
| 4040HD-52- | | | -0 | 20.67 (525) | 22.80 (579) | ≈ 5.76 (8.57) | – |
| 4040HD-53- | | | -0 | 21.14 (537) | 23.27 (591) | ≈ 5.82 (8.66) | – |
| 4040HD-55- | | | -0 | 21.65 (550) | 23.78 (604) | ≈ 6.10 (9.08) | – |
| 4040HD-60- | | | -0 | 23.62 (600) | 25.75 (654) | ≈ 6.26 (9.31) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 4040HD-30-300 -0

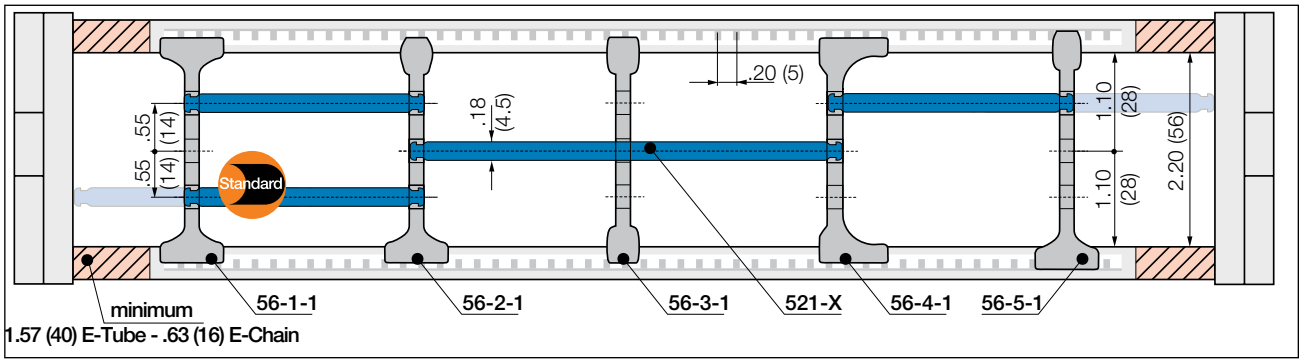
| | 135** | 150 | 200 | 250 | 300 | 350 | 400 |
|---|---|---|---|---|---|---|---|
| R | 5.31 (135) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| H**+25 | 13.94 (354) | 15.12 (384) | 19.06 (484) | 22.99 (584) | 26.93 (684) | 30.87 (784) | 34.80 (884) |
| D | 12.36 (314) | 12.95 (329) | 14.92 (379) | 16.88 (429) | 18.86 (479) | 20.83 (529) | 22.79 (579) |
| K | 24.02 (610) | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) |

** This radius is not available for the R8840HD Series *Removable lid only, no hinged option

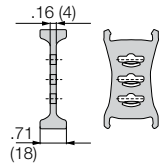
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



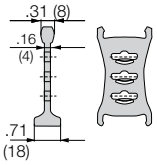

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 56-1** |
| Assembled | **Part No. 56-1-1** |

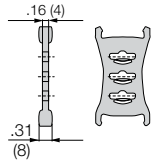
- **Standard separator 56-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 56-2** |
| Assembled | **Part No. 56-2-1** |

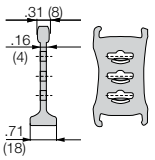
- **Separator 56-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 56-3** |
| Assembled | **Part No. 56-3-1** |

- **Separator 56-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

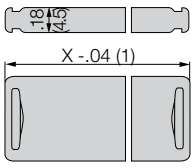



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-5** |
| Assembled | **Part No. 56-5-1** |

- **Separator 56-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

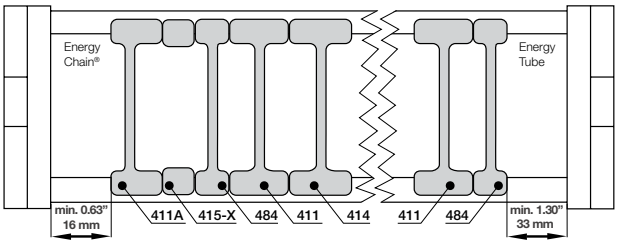
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-050** | **521-050** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-065** | **521-065** | 6.89 (175) | **520-175** | **521-175** | 13.78 (350) | **520-350** | **521-350** |
| 2.95 (075) | **520-075** | **521-075** | 7.87 (200) | **520-200** | **521-200** | 14.76 (375) | **520-375** | **521-375** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | 15.24 (387) | **520-387** | **521-387** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | 17.723 (450) | **520-450** | **521-450** |

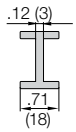
# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Interior Separation - Previous Generation

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. In standard configuration, a separator is installed every second chain link.

**NOTE:** Observe a lateral spacing of at least 1.26 in. (32mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

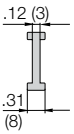





**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 401** |
| Assembled | **Part No. 411** |

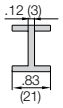
- **Standard separator 401 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 483** |
| Assembled | **Part No. 484** |

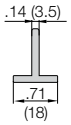
- **Vertical separator 483 for E-Chains® and E-Tubes**
  This separator offers a narrow base for applications where a large number of small cables need to be individually separated.




**Locking separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 404** |
| Assembled | **Part No. 414** |

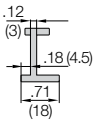
- **Locking separator 404 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.




**Locking separator (tube only)**

| | |
|---|---|
| Unassembled | **Part No. 406** |
| Assembled | **Part No. 416** |

- **Locking separator 406 for E-Tubes**
  It features a single sided, secure fit, and can be placed on the lid or the bottom of the E-Tube. The single side locking design helps to eliminate difficulties in assembling the opposite cover or crossbar




**Asymmetrical separator (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 401A** |
| Assembled | **Part No. 411A** |

- **Asymmetrical separator 401A for E-Chains®**
  This separator features an .71" (18mm) base. It can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacer (chain only)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

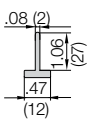
XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

| Part No. Unassembled | Part No. Assembled | in. | (mm) | Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) | **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -15** | **415 -15** | .59" | (15) | **405 -40** | **415 -40** | 1.57" | (40) |
| **405 -20** | **415 -20** | .79" | (20) | | | | |

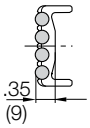
**Center crossbar** - for applications involving a very large number of thin cables This offers the option of subdividing the E-Chain® into upper and lower halves




**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 405** |
| Assembled | **Part No. 415** |

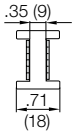
**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables. The integrated rollers compensate for relative movement between the chain and the hose or cable.




**Rollclip**

| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

**Roller separator -** performs a similar function to the Rollclip, but doubles as a separator.




**Center crossbar**

| | |
|---|---|
| Unassembled | **Part No. 429** |
| Assembled | **Part No. 430** |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Interior Separation - Previous Generation



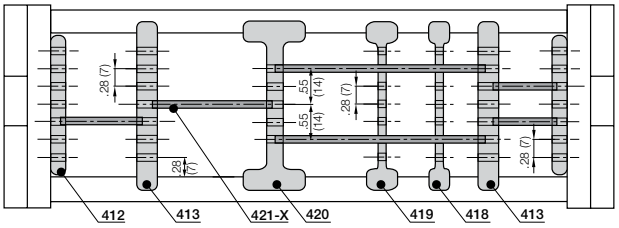
Telephone 1-800-521-2747
Fax 1-401-438-7270

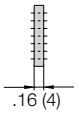
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Shelves and separators

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

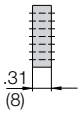





**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 402** |
| Assembled | **Part No. 412** |

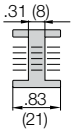
- **Side plates 402**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 403** |
| Assembled | **Part No. 413** |

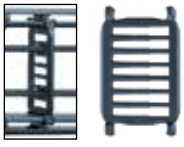
- **Vertical separator 403**
  This component is used to form the basic pattern of a shelf system.

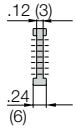



**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 410** |
| Assembled | **Part No. 420** |

- **Locking vertical separator 410**
  This separator is slotted and able to be combined with shelves. For E-Chains® only

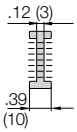





**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 408** |
| Assembled | **Part No. 418** |

- **Slotted separators 408**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




**Slotted separators, open**

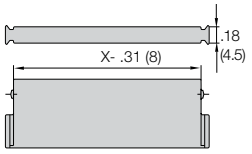
| | |
|---|---|
| Unassembled | **Part No. 409** |
| Assembled | **Part No. 419** |

- **Slotted separator 409**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 3 middle slots

### Shelves 420-XX

These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

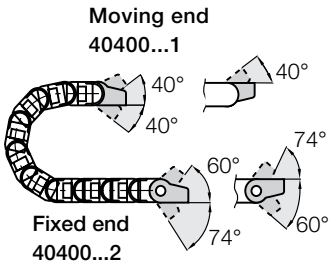
| Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Usable Width in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|
| .71 (18) | .39 (10) | **420-18** | **421-18** | 2.95 (75) | 2.64 (67) | **420-75** | **421-75** |
| .91 (23) | .59 (15) | **420-23** | **421-23** | 3.46 (88) | 3.15 (80) | **420-88** | **421-88** |
| .98 (25) | .67 (17) | **420-25** | **421-25** | 3.94 (100) | 3.62 (92) | **420-100** | **421-100** |
| 1.10 (28) | .79 (20) | **420-28** | **421-28** | 4.92 (125) | 4.61(117) | **420-125** | **421-125** |
| 1.30 (33) | .98 (25) | **420-33** | **421-33** | 5.91 (150) | 5.59(142) | **420-150** | **421-150** |
| 1.69 (43) | 1.38 (35) | **420-43** | **421-43** | 6.89 (175) | 6.57(167) | **420-175** | **421-175** |
| 1.97 (50) | 1.65 (42) | **420-50** | **421-50** | 7.36 (187) | 7.05(179) | **420-187** | **421-187** |
| 2.44 (62) | 2.13 (54) | **420-62** | **421-62** | 7.87 (200) | 7.56(192) | **420-200** | **421-200** |

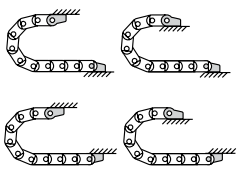


# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Mounting Brackets - Stainless Steel

## Option 1: pivoting

- For pivoting connections
- One part for all chain widths
- Electrically conductive



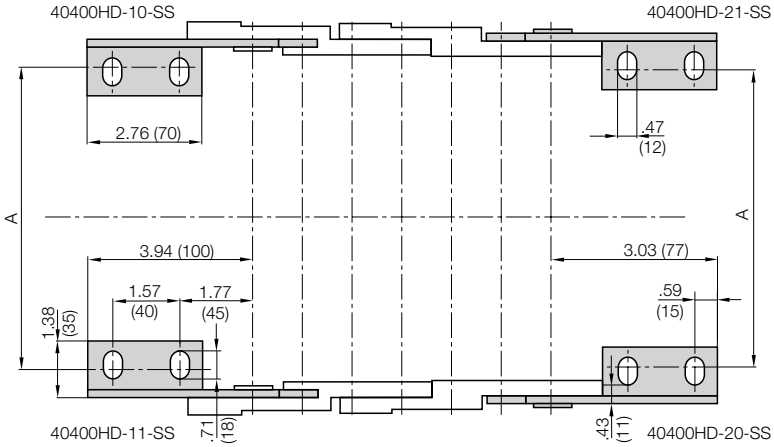


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 4040HD or R8840HD
**40400HD-12-SS**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 4040HD or R8840HD
**40400HD-1-SS**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 4040HD or R8840HD
**40400HD-2-SS**




## Bracket Mounting dimensions

| Width of Chain *Bi* | Part Number | Mounting Brackets: Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50) | 40400HD | -12 | -1 | -2 | 1.18 (30) |
| 2.56 (65) | 40400HD | -12 | -1 | -2 | 1.77 (45) |
| 2.95 (75) | 40400HD | -12 | -1 | -2 | 2.16 (55) |
| 3.43 (87) | 40400HD | -12 | -1 | -2 | 2.64 (67) |
| 3.94 (100) | 40400HD | -12 | -1 | -2 | 3.15 (80) |
| 4.41 (112) | 40400HD | -12 | -1 | -2 | 3.62 (92) |
| 4.92 (125) | 40400HD | -12 | -1 | -2 | 4.13 (105) |
| 5.39 (137) | 40400HD | -12 | -1 | -2 | 4.61 (117) |
| 5.91 (150) | 40400HD | -12 | -1 | -2 | 5.12 (130) |
| 6.38 (162) | 40400HD | -12 | -1 | -2 | 5.59 (142) |
| 6.89 (175) | 40400HD | -12 | -1 | -2 | 6.10 (155) |
| 7.36 (187) | 40400HD | -12 | -1 | -2 | 6.57 (167) |
| 7.87 (200) | 40400HD | -12 | -1 | -2 | 7.09 (180) |
| 8.35 (212) | 40400HD | -12 | -1 | -2 | 7.56 (192) |
| 8.86 (225) | 40400HD | -12 | -1 | -2 | 8.07 (205) |
| 9.33 (237) | 40400HD | -12 | -1 | -2 | 8.54 (217) |
| 9.84 (250) | 40400HD | -12 | -1 | -2 | 9.05 (230) |
| 10.31 (262) | 40400HD | -12 | -1 | -2 | 9.53 (242) |
| 10.83 (275) | 40400HD | -12 | -1 | -2 | 10.04 (255) |
| 11.30 (287) | 40400HD | -12 | -1 | -2 | 10.51 (267) |
| 11.81 (300) | 40400HD | -12 | -1 | -2 | 11.02 (280) |

| Width of Chain *Bi* | Part Number | Mounting Brackets: Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 12.28 (312) | 40400HD | -12 | -1 | -2 | 11.49 (292) |
| 12.79 (325) | 40400HD | -12 | -1 | -2 | 12.00 (305) |
| 13.27 (337) | 40400HD | -12 | -1 | -2 | 12.48 (317) |
| 13.78 (350) | 40400HD | -12 | -1 | -2 | 12.99 (330) |
| 14.25 (362) | 40400HD | -12 | -1 | -2 | 13.46 (342) |
| 14.76 (375) | 40400HD | -12 | -1 | -2 | 13.97 (355) |
| 15.24 (387) | 40400HD | -12 | -1 | -2 | 14.45 (367) |
| 15.75 (400) | 40400HD | -12 | -1 | -2 | 14.96 (380) |
| 16.22 (412) | 40400HD | -12 | -1 | -2 | 15.43 (392) |
| 16.73 (425) | 40400HD | -12 | -1 | -2 | 15.94 (405) |
| 17.20 (437) | 40400HD | -12 | -1 | -2 | 16.42 (417) |
| 17.72 (450) | 40400HD | -12 | -1 | -2 | 16.93 (430) |
| 18.19 (462) | 40400HD | -12 | -1 | -2 | 17.40 (442) |
| 18.70 (475) | 40400HD | -12 | -1 | -2 | 17.91 (455) |
| 19.17 (487) | 40400HD | -12 | -1 | -2 | 18.39 (467) |
| 19.69 (500) | 40400HD | -12 | -1 | -2 | 18.90 (480) |
| 20.16 (512) | 40400HD | -12 | -1 | -2 | 19.37 (492) |
| 20.67 (525) | 40400HD | -12 | -1 | -2 | 19.88 (505) |
| 21.14 (537) | 40400HD | -12 | -1 | -2 | 20.35 (517) |
| 21.65 (550) | 40400HD | -12 | -1 | -2 | 20.87 (530) |
| 23.62 (600) | 40400HD | -12 | -1 | -2 | 22.83 (580) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

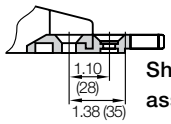
# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Strain Relief

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

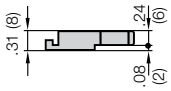


## Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

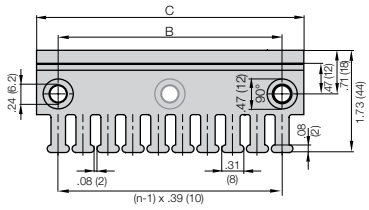



Shown assembled




Single tiewrap plate

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




For more information please refer to strain relief section of Chapter 10

# E-Chain System® E4/4
# Series 4040HD/R8840HD
# Guide Trough



Width of Crossbar
4040HD-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 4.29 (109) | * |
| **-06** | 4.88 (124) | **94-50-225** |
| **-07** | 5.28 (134) | **94-50-225** |
| **-08** | 5.75 (146) | **94-50-250** |
| **-10** | 6.26 (159) | **94-50-250** |
| **-11** | 6.73 (171) | **94-50-275** |
| **-12** | 7.24 (184) | **94-50-275** |
| **-13** | 7.72 (196) | **94-50-300** |
| **-15** | 8.23 (209) | **94-50-300** |
| **-16** | 8.70 (221) | **94-50-325** |
| **-17** | 9.21 (234) | **94-50-325** |
| **-18** | 9.69 (246) | **94-50-350** |
| **-20** | 10.20 (259) | **94-50-350** |
| **-21** | 10.67 (271) | **94-50-375** |
| **-22** | 11.18 (284) | **94-50-375** |
| **-23** | 11.65 (296) | **94-50-400** |
| **-25** | 12.17 (309) | **94-50-400** |
| **-26** | 12.64 (321) | **94-50-425** |
| **-27** | 13.15 (334) | **94-50-425** |
| **-28** | 13.62 (346) | **94-50-450** |
| **-30** | 14.13 (359) | **94-50-450** |
| **-31** | 14.61 (371) | **94-50-475** |
| **-32** | 15.12 (384) | **94-50-475** |
| **-33** | 15.59 (396) | **94-50-500** |
| **-35** | 16.10 (409) | **94-50-500** |
| **-36** | 16.57 (421) | **94-50-525** |
| **-37** | 17.09 (434) | **94-50-525** |
| **-38** | 17.56 (446) | **94-50-550** |
| **-40** | 18.07 (459) | **94-50-550** |
| **-41** | 18.54 (471) | **94-50-575** |
| **-42** | 19.06 (484) | **94-50-575** |
| **-43** | 19.53 (496) | **94-50-600** |
| **-45** | 20.04 (509) | **94-50-600** |
| **-46** | 20.51 (521) | **94-50-625** |
| **-47** | 21.02 (534) | **94-50-625** |
| **-48** | 21.50 (546) | **94-50-650** |
| **-50** | 22.01 (559) | **94-50-650** |
| **-51** | 22.48 (571) | **94-50-675** |
| **-52** | 22.99 (584) | **94-50-675** |
| **-53** | 23.46 (596) | **94-50-700** |
| **-55** | 23.98 (609) | **94-50-700** |
| **-60** | 25.94 (659) | **94-50-750** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required.

- Full travel length of guide trough
  **Part No. 94-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 94-50-XX**

**.XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the left. The standard length of the trough components and glide bars is 6.56 ft (2 m). The required overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center mounted

**Required guide troughs:**
164 ft (50 m) guide trough
82 ft (25 m) glide bars

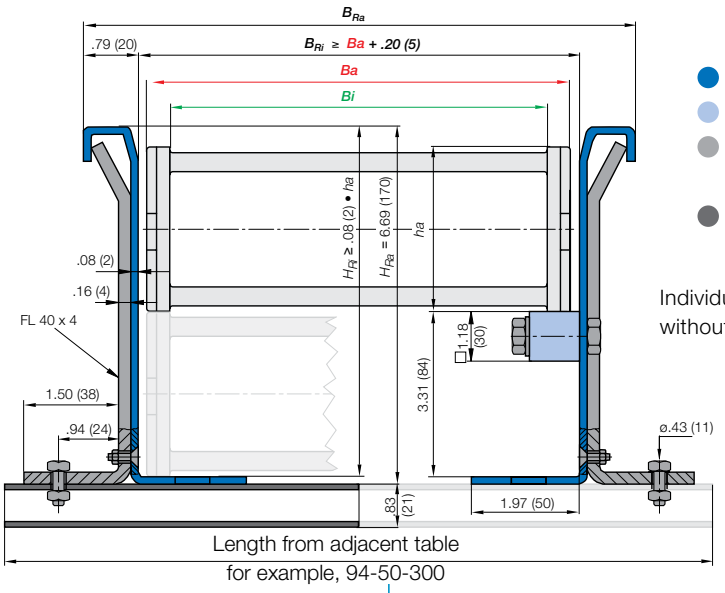
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 94-30**

= 13 sections of 6.56 ft (2 m) glide bars
**Part No. 93-01**

**Required number of installation sets:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part number of the installation sets
**94-50-XXX**
**Example:**
94-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

**For further technical information on guide troughs**
➤ **Chapter 9**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050HD/R9850HD

3.15" 3.15"

## Price Index

Series 5050HD  Series R9850HD

## Special Features / Options

- Side-mounted - unsupported
- ESD classification: Electrically conductive ESD/ ATEX version upon request
- High torsional rigidity

## Assembly Tips

Opening E-Chains®: Remove crossbars and clips - Insert screwdriver into the slot, push down, release by lever action

Remove lids/bottoms (E-Tubes) - Insert screwdriver into the slot, release by lever action

## Other Installation Methods

| |
|---|
| Vertical, hanging ≤ 394 ft (120 m) |
| Vertical, standing ≤ 19.69 ft (6 m) |
| Side-mounted, unsupp. ≤ 9.84 ft (3 m) |
| Rotary requires further calculation |

## Usage Guidelines

- When high torsional forces are expected
- For side-mounted applications
- For long-term operation in very moist environments

- When short travels or medium additional loads are involved
  ➤ Series E4-80
- If a simpler low-cost solution is required
  ➤ Series 15050/15150/R19850

## Features & Benefits

1. Robust steel-mounting brackets
2. Wide, rounded plastic crossbars - cable friendly
3. Very wide glide surface, less wear
4. High tensile stability (20% higher tensile force than Series 5050
5. Hinged snap-open removable lids along outer radius of E-Tube
6. High torsional rigidity
7. Closed and open styles can be combine
8. Numerous interior separation possibilities
9. High side-mount stability due to undercut
10. Crossbars on E-Chains® are removable along both radii

RoI E-Chain® Series 5050R/9850R available upon request

## Order Example: Complete E-Chain®

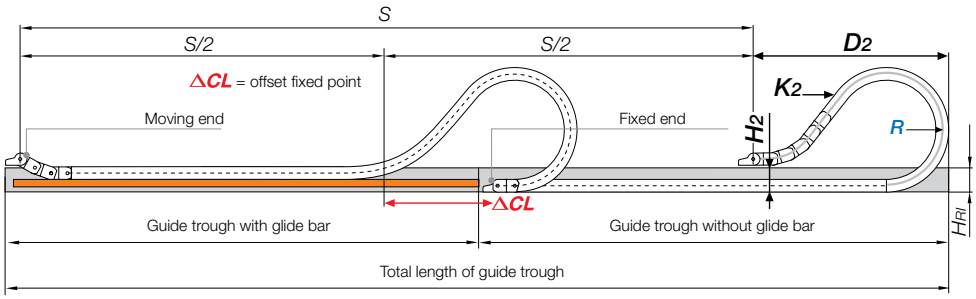
Please indicate chain length or number of links. Example:

| | |
|---|---|
| 16.4 ft (5 m) **5050HD-30-300-0** | **E-Chain®** |
| With 2 separators **80-1** assembled every 2nd link | **Interior Separation** |
| 1 Set **505000HD-12-E** | **Mounting Bracket** |

## For long travels with lowered mounting height

**Long travel lengths from 32.8 ft.(10m) to max. 1,640 ft. (500m)**

**Chain length: =** $_{S}/_{2} + K_2$




**In case of travels between 13 ft. (4m) and 32.8 ft. (10m) we recommend a longer unsupported length.**

| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) |
| $D_2$ | 21.65 (550) | 31.50 (800) | 37.40 (950) | 47.24 (1200) | 61.02 (1550) | 66.93 (1700) | 85.63 (2175) |
| $K_2$ | 35.83 (910) | 50.16 (1274) | 64.49 (1638) | 78.82 (2002) | 97.44 (2475) | 107.48 (2730) | 136.14 (3458) |
| ΔCL | 8.23 (209) | 16.10 (409) | 20.04 (509) | 27.91 (709) | 39.72 (1009) | 43.66 (1109) | 58.43 (1484) |

### Legend

S = Length of travel
$H_F$ = Required clearance height
HRI = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Over length - long travels, gliding
$K_2$ = *Further add-on

*If the mounting bracket location is set lower

### Long Travels - Gliding

If the unsupported length is exceeded, the E-Chain®/ Tube must glide on itself. This requires a guide trough.

**Design, Chapter 1**

| | |
|---|---|
| Speed / acceleration $FL_G$ | max. 6.56 ft/s (20 m/s) / max. 656 ft/s² (200 m/s²) |
| Speed / acceleration $FL_B$ | max. 9.84 ft/s (3 m/s) / max. 19.69 ft/s² (6 m/s²) |
| Gliding speed / acceleration (maximum) | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

### Technical Data

Details of material properties

➤ **Chapter 1**



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

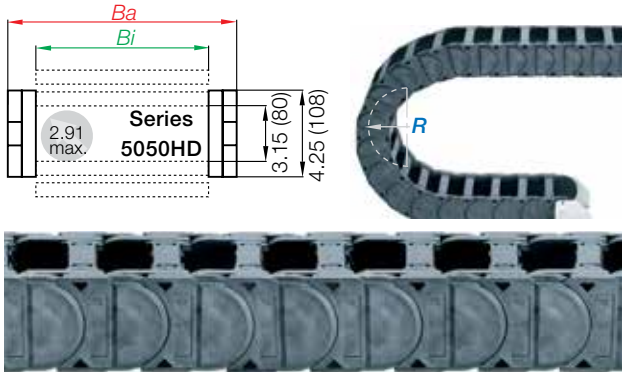
# E-Chain System® E4/4
# Series 5050HD/R9850HD

igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

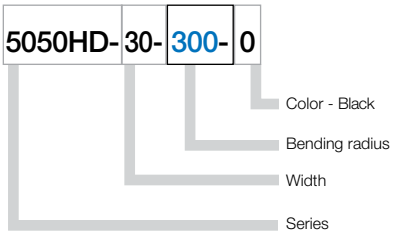
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Series 5050HD - E-Chain® with crossbars every link

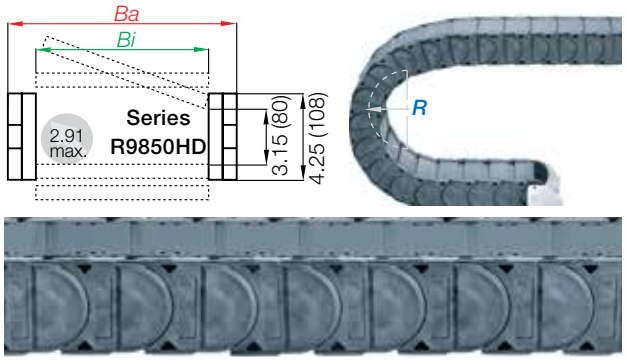



- Crossbars every link
- For use with rigid hydraulic hoses
- For particularly demanding applications
- Can be opened from both sides

**Part Number Structure**

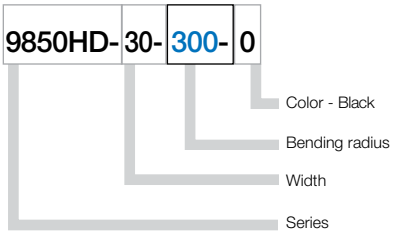



## Series R9850HD - fully enclosed E-Tube

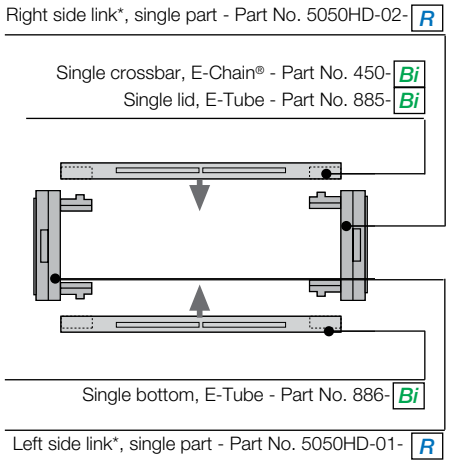


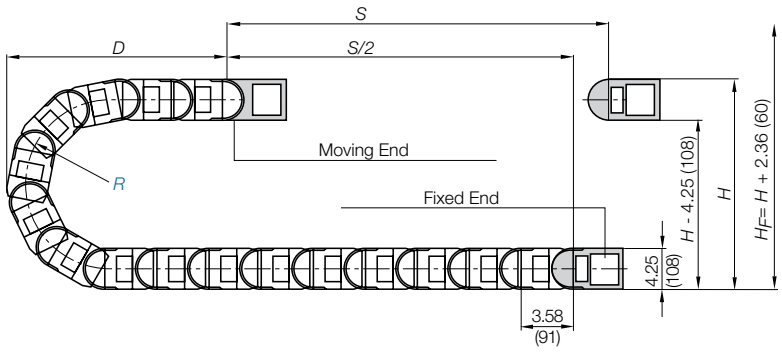

- Fully enclosed
- Excellent cable and hose protection against dirt
- Protection against hot chips up to 1562°F (850°C)
- Lids along inner radius are completely removable
- Lids along the outer radius are single-sided, snap open, hinged on one side as well as completely removable

**Part Number Structure**




## E-Chain® as separate parts, links and side plates




*View from the fixed point of the E-Chain®/E-Tube

# E-Chain System® E4/4
# Series 5050HD/R9850HD

Supplement part number with required radius. Example: 5050HD-30-[300]-0
Pitch: 3.58 in. (91mm) per link links/ft(m) = 3.35 (11)

| Part Number. Crossbars Every link | Tube Version | | Bi in. (mm) | Ba in. (mm) | 5050HD lbs/ft (kg/m) | R9850HD lbs/ft (kg/m) |
|---|---|---|---|---|---|---|
| 5050HD-05- | | [ ]-0 | 1.97 (50) | 4.33 (110) | ≈ 4.47 (6.65) | – |
| 5050HD-06- | | [ ]-0 | 2.56 (65) | 4.92 (125) | ≈ 4.53 (6.74) | – |
| 5050HD-07- | 9850HD-07- | [ ]-0* | 2.95 (75) | 5.31 (135) | ≈ 4.58 (6.81) | ≈ 4.87 (7.25) |
| 5050HD-08- | | [ ]-0 | 3.43 (87) | 5.79 (147) | ≈ 4.63 (6.89) | – |
| 5050HD-10- | 9850HD-10- | [ ]-0 | 3.94 (100) | 6.30 (160) | ≈ 4.70 (6.99) | ≈ 5.07 (7.55) |
| 5050HD-11- | | [ ]-0 | 4.41 (112) | 6.77 (172) | ≈ 4.77 (7.10) | – |
| 5050HD-12- | 9850HD-12- | [ ]-0 | 4.92 (125) | 7.28 (185) | ≈ 4.82 (7.18) | ≈ 5.32 (7.91) |
| 5050HD-13- | | [ ]-0 | 5.39 (137) | 7.76 (197) | ≈ 4.92 (7.32) | – |
| 5050HD-15- | 9850HD-15- | [ ]-0 | 5.91 (150) | 8.27 (210) | ≈ 4.94 (7.35) | ≈ 5.57 (8.29) |
| 5050HD-16- | | [ ]-0 | 6.38 (162) | 8.74 (222) | ≈ 5.02 (7.47) | – |
| 5050HD-17- | 9850HD-17 | [ ]-0 | 6.89 (175) | 9.25 (235) | ≈ 5.11 (7.60) | ≈ 5.78 (8.60) |
| 5050HD-18- | | [ ]-0 | 7.36 (187) | 9.72 (247) | ≈ 5.18 (7.71) | – |
| 5050HD-20- | 9850HD-20- | [ ]-0 | 7.87 (200) | 10.24 (260) | ≈ 5.22 (7.77) | ≈ 5.99 (8.91) |
| 5050HD-21- | | [ ]-0 | 8.35 (212) | 10.71 (272) | ≈ 5.27 (7.84) | – |
| 5050HD-22- | | [ ]-0 | 8.86 (225) | 11.22 (285) | ≈ 5.32 (7.91) | – |
| 5050HD-23- | | [ ]-0 | 9.33 (237) | 11.69 (297) | ≈ 5.39 (8.02) | – |
| 5050HD-25- | 9850HD-25- | [ ]-0 | 9.84 (250) | 12.20 (310) | ≈ 5.46 (8.13) | ≈ 6.48 (9.64) |
| 5050HD-26- | | [ ]-0 | 10.31 (262) | 12.68 (322) | ≈ 5.52 (8.22) | – |
| 5050HD-27- | 9850HD-27 | [ ]-0 | 10.83 (275) | 13.19 (335) | ≈ 5.59 (8.32) | ≈ 6.72 (10.00) |
| 5050HD-28- | | [ ]-0 | 11.30 (287) | 13.66 (347) | ≈ 5.63 (8.38) | – |
| 5050HD-30- | 9850HD-30- | [ ]-0 | 11.81 (300) | 14.17 (360) | ≈ 5.73 (8.53) | ≈ 6.92 (10.30) |
| 5050HD-31- | | [ ]-0 | 12.28 (312) | 14.65 (372) | ≈ 5.76 (8.57) | – |
| 5050HD-32- | | [ ]-0 | 12.79 (325) | 15.16 (385) | ≈ 5.83 (8.67) | – |
| 5050HD-33- | | [ ]-0 | 13.27 (337) | 15.63 (397) | ≈ 5.91 (8.79) | – |
| 5050HD-35- | 9850HD-35- | [ ]-0 | 13.78 (350) | 16.14 (410) | ≈ 6.04 (8.99) | ≈ 7.39 (11.00) |
| 5050HD-36- | | [ ]-0 | 14.25 (362) | 16.61 (422) | ≈ 5.98 (8.90) | – |
| 5050HD-37- | | [ ]-0 | 14.76 (375) | 17.12 (435) | ≈ 6.04 (9.00) | – |
| 5050HD-38- | | [ ]-0 | 15.24 (387) | 17.60 (447) | ≈ 6.12 (9.11) | – |
| 5050HD-40- | 9850HD-40- | [ ]-0 | 15.75 (400) | 18.11 (460) | ≈ 6.30 (9.38) | ≈ 8.06 (12.00) |
| 5050HD-41- | | [ ]-0 | 16.22 (412) | 18.58 (472) | ≈ 6.26 (9.31) | – |
| 5050HD-42- | | [ ]-0 | 16.73 (425) | 19.09 (485) | ≈ 6.45 (9.60) | – |
| 5050HD-43- | | [ ]-0 | 17.20 (437) | 19.57 (497) | ≈ 6.34 (9.44) | – |
| 5050HD-45- | | [ ]-0 | 17.72 (450) | 20.08 (510) | ≈ 6.42 (9.55) | – |
| 5050HD-46- | 9850HD-46- | [ ]-0 | 18.19 (462) | 20.55 (522) | ≈ 6.53 (9.72) | ≈ 8.38 (12.47) |
| 5050HD-47- | | [ ]-0 | 18.70 (475) | 21.06 (535) | ≈ 6.56 (9.76) | – |
| 5050HD-48- | | [ ]-0 | 19.17 (487) | 21.54 (547) | ≈ 6.73 (10.01) | – |
| 5050HD-50- | | [ ]-0 | 19.69 (500) | 22.05 (560) | ≈ 6.79 (10.11) | – |
| 5050HD-51- | | [ ]-0 | 20.16 (512) | 22.52 (572) | ≈ 6.73 (10.02) | – |
| 5050HD-52- | | [ ]-0 | 20.67 (525) | 23.03 (585) | ≈ 6.85 (10.19) | – |
| 5050HD-53- | | [ ]-0 | 21.14 (537) | 23.50 (597) | ≈ 6.91 (10.29) | – |
| 5050HD-55- | | [ ]-0 | 21.65 (550) | 24.02 (610) | ≈ 7.20 (10.71) | – |
| 5050HD-60- | | [ ]-0 | 23.62 (600) | 25.98 (660) | ≈ 7.35 (10.94) | – |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 5050HD-30-[300]-0

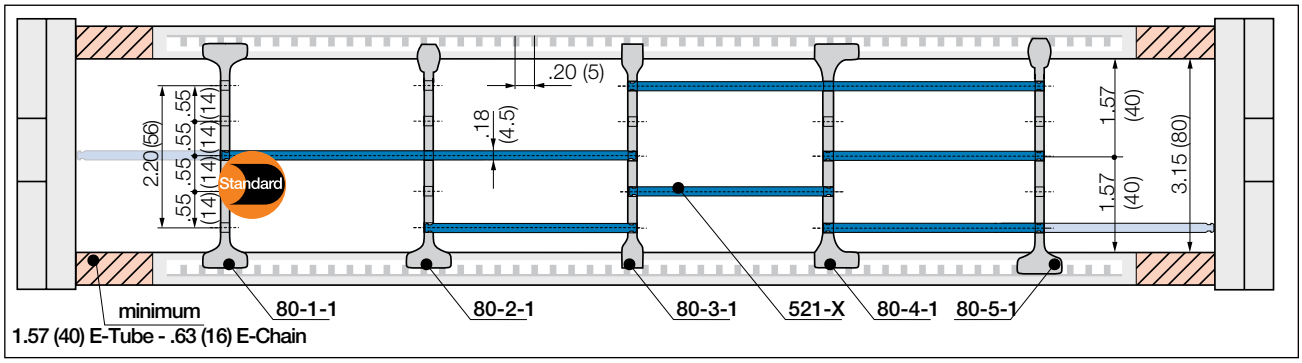
| | 150 | 200 | 250 | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|---|---|
| R | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
| H**+25 | 16.06 (408) | 20.00 (508) | 23.94 (608) | 27.87 (708) | 31.81 (808) | 35.75 (908) | 43.62 (1108) |
| D | 13.43 (341) | 15.39 (391) | 17.36 (441) | 19.33 (491) | 21.30 (541) | 23.27 (591) | 27.20 (691) |
| K | 25.79 (655) | 32.09 (815) | 38.19 (970) | 44.29 (1125) | 50.59 (1285) | 56.69 (1440) | 69.09 (1755) |

** This radius is not available for the R9850HD Series *Removable lid only, no hinged option

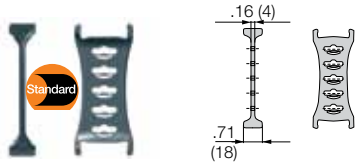
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Interior Separation - New Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



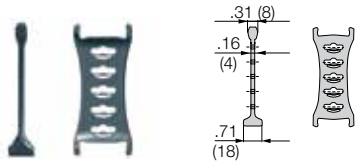

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

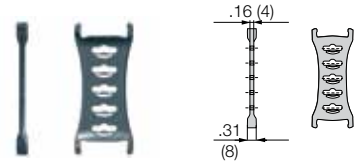
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

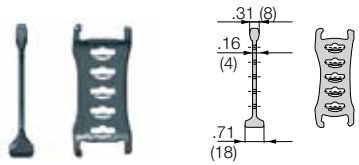
- **Separator 80-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

- **Separator 80-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

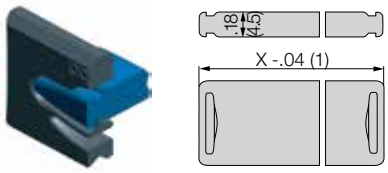



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

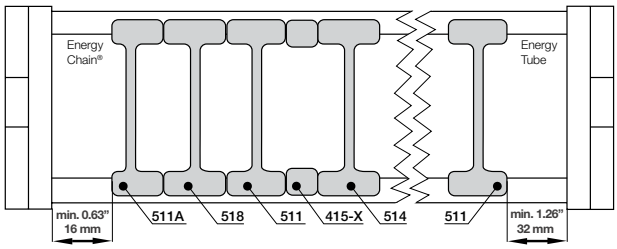
| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-050** | **521-050** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-065** | **521-065** | 6.89 (175) | **520-175** | **521-175** | 17.723 (450) | **520-450** | **521-125** |
| 2.95 (075) | **520-075** | **521-075** | 7.87 (200) | **520-200** | **521-200** | | | |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | | | |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | | | |

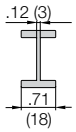
# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Interior Separation - Previous Generation

## Vertical separators and spacers

Vertical separators are used if a vertical subdivision of the E-Chain® interior is required. By standard, vertical separators are assembled every other E-Chain® link.

**NOTE:** Observe a lateral spacing of at least 1.30 in. (33mm) for E-Tubes and .63 in. (16mm) for E-Chain®. There is no minimum spacing needed for side plates

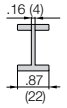





**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 501** |
| Assembled | **Part No. 511** |

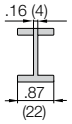
- **Standard separator 501 for E-Chains® and E-Tubes**
  This separator offers safe stability due to its wide base design, also when used with thick cables or hoses.




**Locking separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 504** |
| Assembled | **Part No. 514** |

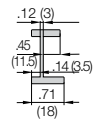
- **Locking separator 504 for E-Chains®**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. If locking separators are used, the E-Chain® is more difficult to open.




**Locking separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 508** |
| Assembled | **Part No. 518** |

- **Locking separator 508 for E-Tubes**
  This separator is used for applications that are exposed to extremely high humidity. The clamp at the side serves to uniformly align the separators. In order to avoid destroying the separators when opening the E-Chain®, make sure all separators are identically aligned.




**Asymmetrical separator (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 501A** |
| Assembled | **Part No. 511A** |

- **Asymmetrical separator 501A for E-Chains®**
  This separator is NOT for E-Tubes. It features an (18mm) base and can be used in combinations between spacers of different widths and vertical separators in side mounted applications.

**Spacer (for E-Chains®)**

| | |
|---|---|
| Unassembled | **Part No. 405-XX** |
| Assembled | **Part No. 415-XX** |

XX = width of the spacer

- **NOTE ON SPACERS**
  Vertical separators are adjustable, but can be fixed in position by means of a spacer. Spacers are most often necessary for side mounted applications.
  The available inner height is reduced by .08" (2mm) **per spacer** (for example if one spacer is placed on either side of the separator, the overall inner height is reduced by .16" (4mm). To avoid this, place the spacers on the **outside** of the opening crossbar **(not for long travels)**.

Spacers available in the following sizes:

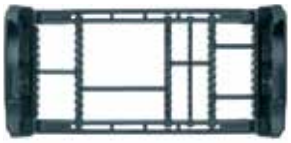
| Part No. Unassembled | Part No. Assembled | in. | (mm) | Part No. Unassembled | Part No. Assembled | in. | (mm) |
|---|---|---|---|---|---|---|---|
| **405 -10** | **415 -10** | .39" | (10) | **405 -30** | **415 -30** | 1.18" | (30) |
| **405 -15** | **415 -15** | .59" | (15) | **405 -40** | **415 -40** | 1.57" | (40) |
| **405 -20** | **415 -20** | 79" | (20) | | | | |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Interior Separation - Previous Generation

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

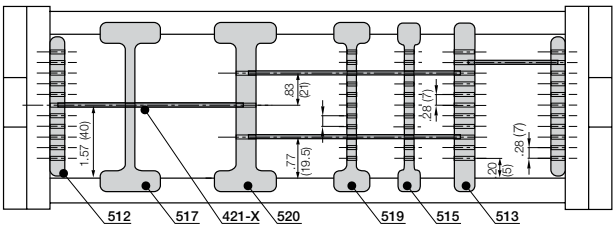


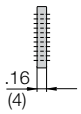


## Shelves

E-Chains® and E-Tubes can be subdivided both vertically and horizontally using the various interior separation elements.

➤ **Design, Chapter 1** for layout recommendations.

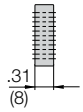





**Side plate**

| | |
|---|---|
| Unassembled | **Part No. 502** |
| Assembled | **Part No. 512** |

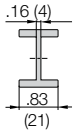
- **Side plates 502**
  This component is used to form the basic pattern of a shelf system.




**Vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 503** |
| Assembled | **Part No. 513** |

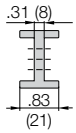
- **Vertical separator 503**
  This component is used to form the basic pattern of a shelf system.




**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 507** |
| Assembled | **Part No. 517** |

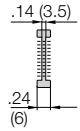
- **Locking vertical separator 507**
  This separator features increased retention force for applications exposed to very high humidity and extreme loads. The extra retention force is achieved by asymmetric claws for the crossbar. Take care to ensure proper alignment.




**Locking vertical separator**

| | |
|---|---|
| Unassembled | **Part No. 510** |
| Assembled | **Part No. 520** |

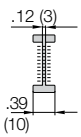
- **Locking vertical separator 510**
  This separator is slotted and able to be combined with shelves. For E-Chains® only.




**Slotted separators, closed**

| | |
|---|---|
| Unassembled | **Part No. 505** |
| Assembled | **Part No. 515** |

- **Slotted separators 505**
  These are used for very complex subdivisions. However, they cannot be retrofitted into an existing separation system without removing the shelves first.




**Slotted separators, open**

| | |
|---|---|
| Unassembled | **Part No. 509** |
| Assembled | **Part No. 519** |

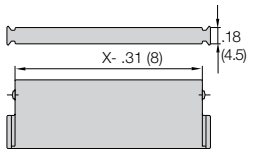
- **Slotted separator 509**
  This separator can be retrofitted into an existing interior separation system without removing the shelves, as long as these shelves fit into any of the 7 middle slots

### Shelves 420-XX

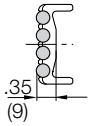
These components form the basic pattern of a shelf system. Shelves of various widths can be arranged at 7 different heights in .28" (7mm) increments

| Usable Width X in. | (mm) | Part No. Width in. | (mm) | Part No. Shelf only | Assembled |
|---|---|---|---|---|---|
| .71 | (18) | .39 | (10) | **420-18** | **421-18** |
| .91 | (23) | .59 | (15) | **420-23** | **421-23** |
| .98 | (25) | .67 | (17) | **420-25** | **421-25** |
| 1.10 | (28) | .79 | (20) | **420-28** | **421-28** |
| 1.30 | (33) | .98 | (25) | **420-33** | **421-33** |
| 1.69 | (43) | 1.38 | (35) | **420-43** | **421-43** |
| 1.97 | (50) | 1.65 | (42) | **420-50** | **421-50** |
| 2.44 | (62) | 2.13 | (54) | **420-62** | **421-62** |

| Usable Width X in. | (mm) | Part No. Width in. | (mm) | Part No. Shelf only | Assembled |
|---|---|---|---|---|---|
| 2.95 | (75) | 2.64 | (67) | **420-75** | **421-75** |
| 3.46 | (88) | 3.15 | (80) | **420-88** | **421-88** |
| 3.94 | (100) | 3.62 | (92) | **420-100** | **421-100** |
| 4.92 | (125) | 4.61 | (117) | **420-125** | **421-125** |
| 5.91 | (150) | 5.59 | (142) | **420-150** | **421-150** |
| 6.89 | (175) | 6.57 | (167) | **420-175** | **421-175** |
| 7.36 | (187) | 7.05 | (179) | **420-187** | **421-187** |
| 7.87 | (200) | 7.56 | (192) | **420-200** | **421-200** |



**Rollclip -** minimizes abrasion of particularly sensitive hoses or cables in an E-Chain®. The integrated rollers compensate for relative movement between the chain and the hose or cable. This reduces the abrasion of the hoses or cables



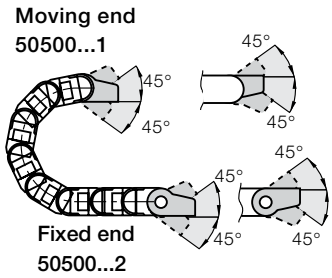

**Rollclip**

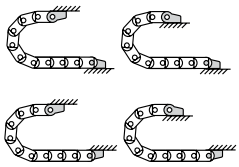
| | |
|---|---|
| Unassembled | **Part No. 489-27** |
| Assembled | **Part No. 490-27** |

# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Mounting Bracket - Stainless Steel

**pivoting**

- For pivoting connections
- One part for all chain widths
- Electrically conductive



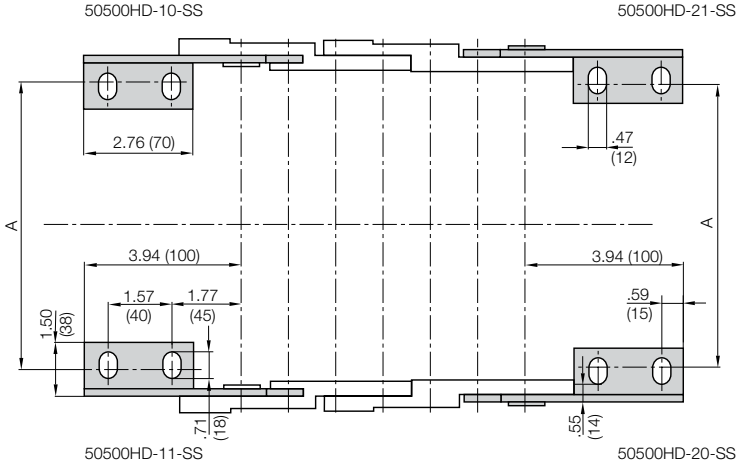


Possible installation configurations -

**Part No. Mounting Brackets Full Set**
4 parts, 2 with pin, 2 with bore
Series 5050HD or R9850HD:
**50500HD-12-SS**

**Part No. Mounting Bracket Moving End**
2 parts, 1 left & 1 right with bore
Series 5050HD or R9850HD:
**50500HD-1-SS**

**Part No. Mounting Bracket Fixed End**
2 parts, 1 left & 1 right with pin
Series 5050HD or R9850HD:
**50500HD-2-SS**




## Bracket mounting dimensions

| Width of Chain *Bi* | Part Number | Mounting Brackets Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 1.97 (50) | 50500HD | -12 | -1 | -2 | 1.18 (30) |
| 2.56 (65) | 50500HD | -12 | -1 | -2 | 1.77 (45) |
| 2.95 (75) | 50500HD | -12 | -1 | -2 | 2.16 (55) |
| 3.43 (87) | 50500HD | -12 | -1 | -2 | 2.64 (67) |
| 3.94 (100) | 50500HD | -12 | -1 | -2 | 3.15 (80) |
| 4.41 (112) | 50500HD | -12 | -1 | -2 | 3.62 (92) |
| 4.92 (125) | 50500HD | -12 | -1 | -2 | 4.13 (105) |
| 5.39 (137) | 50500HD | -12 | -1 | -2 | 4.61 (117) |
| 5.91 (150) | 50500HD | -12 | -1 | -2 | 5.12 (130) |
| 6.38 (162) | 50500HD | -12 | -1 | -2 | 5.59 (142) |
| 6.89 (175) | 50500HD | -12 | -1 | -2 | 6.10 (155) |
| 7.36 (187) | 50500HD | -12 | -1 | -2 | 6.57 (167) |
| 7.87 (200) | 50500HD | -12 | -1 | -2 | 7.09 (180) |
| 8.35 (212) | 50500HD | -12 | -1 | -2 | 7.56 (192) |
| 8.86 (225) | 50500HD | -12 | -1 | -2 | 8.07 (205) |
| 9.33 (237) | 50500HD | -12 | -1 | -2 | 8.54 (217) |
| 9.84 (250) | 50500HD | -12 | -1 | -2 | 9.05 (230) |
| 10.31 (262) | 50500HD | -12 | -1 | -2 | 9.53 (242) |
| 10.83 (275) | 50500HD | -12 | -1 | -2 | 10.04 (255) |
| 11.30 (287) | 50500HD | -12 | -1 | -2 | 10.51 (267) |
| 11.81 (300) | 50500HD | -12 | -1 | -2 | 11.02 (280) |

| Width of Chain *Bi* | Part Number | Mounting Brackets Full Set | Moving End Only | Fixed End Only | A in. (mm) |
|---|---|---|---|---|---|
| 12.28 (312) | 50500HD | -12 | -1 | -2 | 11.49 (292) |
| 12.79 (325) | 50500HD | -12 | -1 | -2 | 12.00 (305) |
| 13.27 (337) | 50500HD | -12 | -1 | -2 | 12.48 (317) |
| 13.78 (350) | 50500HD | -12 | -1 | -2 | 12.99 (330) |
| 14.25 (362) | 50500HD | -12 | -1 | -2 | 13.46 (342) |
| 14.76 (375) | 50500HD | -12 | -1 | -2 | 13.97 (355) |
| 15.24 (387) | 50500HD | -12 | -1 | -2 | 14.45 (367) |
| 15.75 (400) | 50500HD | -12 | -1 | -2 | 14.96 (380) |
| 16.22 (412) | 50500HD | -12 | -1 | -2 | 15.43 (392) |
| 16.73 (425) | 50500HD | -12 | -1 | -2 | 15.94 (405) |
| 17.20 (437) | 50500HD | -12 | -1 | -2 | 16.42 (417) |
| 17.72 (450) | 50500HD | -12 | -1 | -2 | 16.93 (430) |
| 18.19 (462) | 50500HD | -12 | -1 | -2 | 17.40 (442) |
| 18.70 (475) | 50500HD | -12 | -1 | -2 | 17.91 (455) |
| 19.17 (487) | 50500HD | -12 | -1 | -2 | 18.39 (467) |
| 19.69 (500) | 50500HD | -12 | -1 | -2 | 18.90 (480) |
| 20.16 (512) | 50500HD | -12 | -1 | -2 | 19.37 (492) |
| 20.67 (525) | 50500HD | -12 | -1 | -2 | 19.88 (505) |
| 21.14 (537) | 50500HD | -12 | -1 | -2 | 20.35 (517) |
| 21.65 (550) | 50500HD | -12 | -1 | -2 | 20.87 (530) |
| 23.62 (600) | 50500HD | -12 | -1 | -2 | 22.83 (580) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Strain Relief

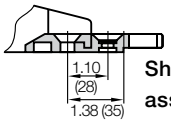
igus® E-Chain System®

Telephone 1-800-521-2747
Fax 1-401-438-7270

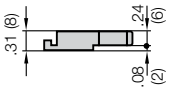
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Tiewrap plates as an individual part

Available as an individual component, can be fixed onto a mounting bracket with the use of a profile rail.

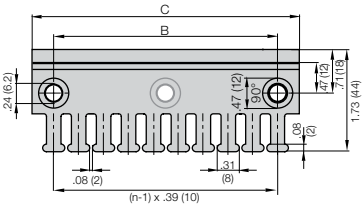



Shown assembled




Single tiewrap plate

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |




**For more information please refer to strain relief section of Chapter 10**

# E-Chain System® E4/4
# Series 5050HD/R9850HD
# Guide Trough

Width of Crossbar
5050HD-**05**-200-0

| | $B_{Ri}$ | Installation Part No. |
|---|---|---|
| **-05** | 4.13 (105) | **96-50-225** |
| **-06** | 4.72 (120) | **96-50-250** |
| **-07** | 5.12 (130) | **96-50-250** |
| **-08** | 5.59 (142) | **96-50-275** |
| **-10** | 6.10 (155) | **96-50-275** |
| **-11** | 6.61 (168) | **96-50-300** |
| **-12** | 7.09 (180) | **96-50-300** |
| **-13** | 7.60 (193) | **96-50-325** |
| **-15** | 8.07 (205) | **96-50-325** |
| **-16** | 8.58 (218) | **96-50-350** |
| **-17** | 9.06 (230) | **96-50-350** |
| **-18** | 9.57 (243) | **96-50-375** |
| **-20** | 10.04 (255) | **96-50-375** |
| **-21** | 10.55 (268) | **96-50-400** |
| **-22** | 11.02 (280) | **96-50-400** |
| **-23** | 11.54 (293) | **96-50-425** |
| **-25** | 12.01 (305) | **96-50-425** |
| **-26** | 12.52 (318) | **96-50-450** |
| **-27** | 12.99 (330) | **96-50-450** |
| **-28** | 13.50 (343) | **96-50-475** |
| **-30** | 13.98 (355) | **96-50-475** |
| **-31** | 14.49 (368) | **96-50-500** |
| **-32** | 14.96 (380) | **96-50-500** |
| **-33** | 15.47 (393) | **96-50-525** |
| **-35** | 15.94 (405) | **96-50-525** |
| **-36** | 16.46 (418) | **96-50-550** |
| **-37** | 16.93 (430) | **96-50-550** |
| **-38** | 17.44 (443) | **96-50-575** |
| **-40** | 17.91 (455) | **96-50-575** |
| **-41** | 18.43 (468) | **96-50-600** |
| **-42** | 18.90 (480) | **96-50-600** |
| **-43** | 19.41 (493) | **96-50-625** |
| **-45** | 19.88 (505) | **96-50-625** |
| **-46** | 20.39 (518) | **96-50-650** |
| **-47** | 20.87 (530) | **96-50-650** |
| **-48** | 21.38 (543) | **96-50-675** |
| **-50** | 21.85 (555) | **96-50-675** |
| **-51** | 22.36 (568) | **96-50-700** |
| **-52** | 22.83 (580) | **96-50-700** |
| **-53** | 23.35 (593) | **96-50-725** |
| **-55** | 23.82 (605) | **96-50-725** |
| **-60** | 25.79 (655) | **96-50-775** |

Standard length profile rail

Guide troughs are used with applications where the upper run of the E-Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Full travel length of guide trough
  **Part No. 99-30**
- 1/2 travel length glide bars
  **Part No. 93-01**
- Installation sets as end connectors
  **Part No. 96-50-XX**

**-XX** indicates the length of the profile rails on which the guide trough is mounted. The values and part numbers are specified in the table on the right. The standard length of the trough components and glide bars is 6.56 ft (2 m). The overall length of the guide trough directly correlates to the length of travel.

**Example:**
Length of travel 164 ft (50 m)
Center-mounted

**Required guide troughs:**
164 ft (50 m) guide trough, 82 ft. (25 m) glide bar

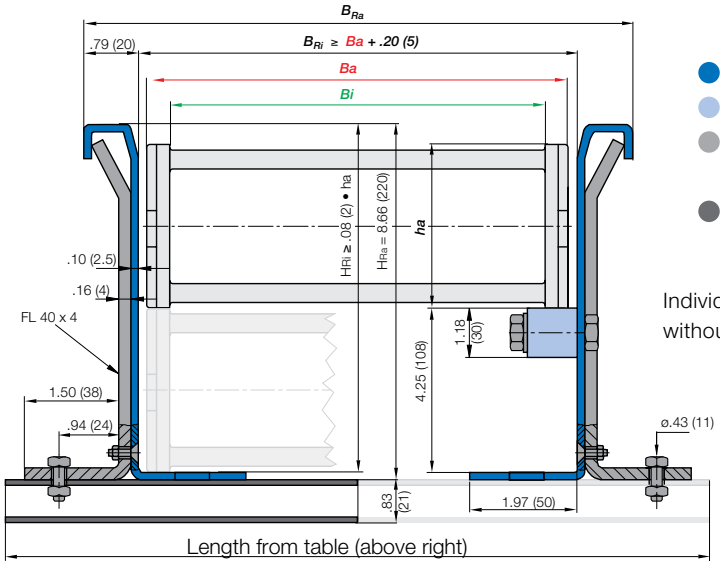
= 25 sections of 6.56 ft (2 m) guide trough
**Part No. 99-30**

= 13 sections of 6.56 ft (2 m) glide bar
**Part No. 93-01**

**Required number of installation set:**
= Number of guide trough components + 1
= 25 + 1 = 26
Part No. of the installation sets **96-50-XXX**
Example: 96-50-400 for 15.75 (400 mm) long profile rail

**Left: Guide trough with glide bars**
**Right: Guide troughs without glide bars**

**Installation sets as section connectors**




- Guide trough
- Glide bars
- Installation set "Basic"
- Profile rail

Individual attachment without profile rail

* Specialized guide trough available upon request

**For further technical information on guide troughs**
**➤ Chapter 9**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# System P4 - Profile RoI E-Chain®
# For very long travels, speed up to 32.8 f/s (10 m/s)

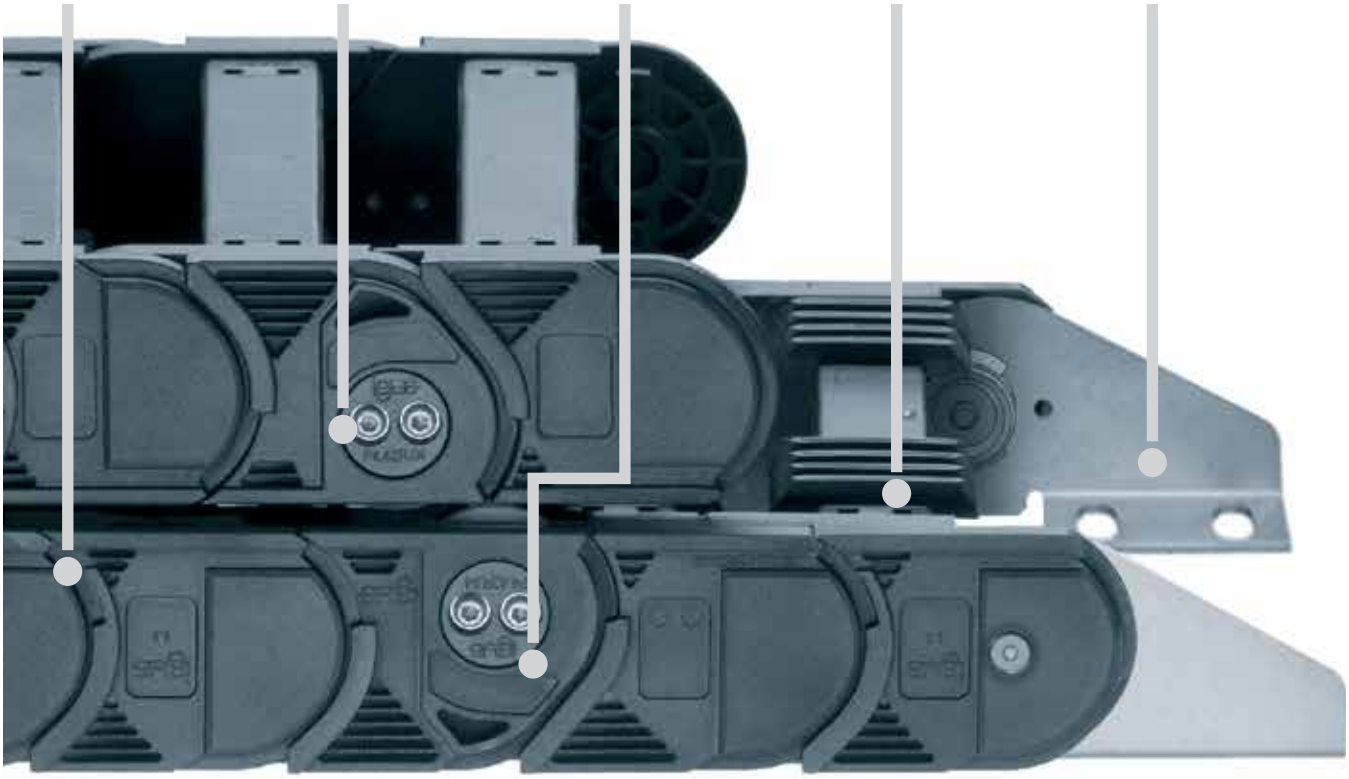
Low vibration:
Offset operation of upper and lower run

Low maintenance:
Tribo-optimized plastic rollers

Low noise:
Special roller- / E-Chain® links -design

Secure guidance:
comb style AUTO-GLIDE crossbars

Robust:
Steel mounting brackets



# 57% less energy consumption - System P4, profile RoI E-Chain®

**Safe, low-noise, abrasion-resistant energy supply system on long travels up to 2,625 ft. (800 m) and more**
Standard RoI E-Chain® has been used in over 1000 installations worldwide. Some industries -cranes, for example - have ever-increasing demands for length of travel, fill weight and speed. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact us about this.**

- Identical pitch of the chain link with or without roller
- Smooth, low noise operation through identical pitch length for links with and without rollers
- Integrated “captive” roller in the side part
- Long travels(up to 2,625 ft. (800 m), high additional loads up to 20.2 lbs/ ft (30 kg/m)
- For very long travels and high speeds >32.8 ft/s (10 m/s) travel speed
- AUTO-GLIDE crossbars provide for a safe guiding in very long travels
- 4 different inner heights: 1.26” (32mm), 1.65” (42mm), 2.20” (56mm), 3.15” (80 mm) available
- Large modular tool box system with interior separations of the System E4

**Typical industries and applications**

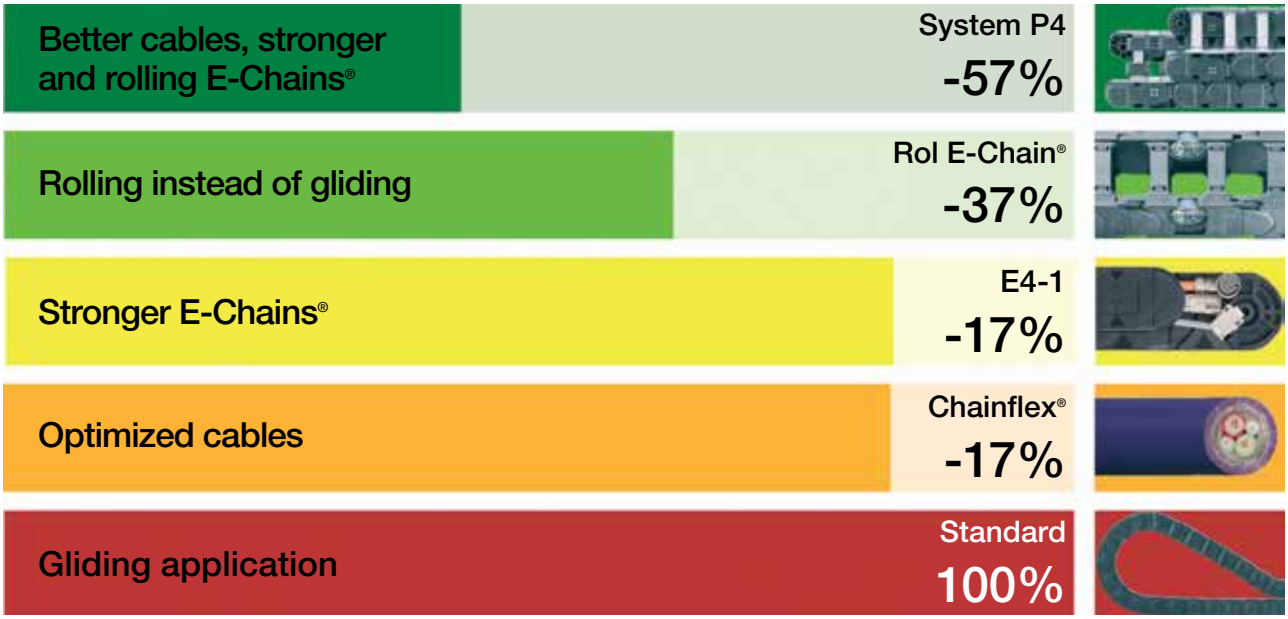
- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling

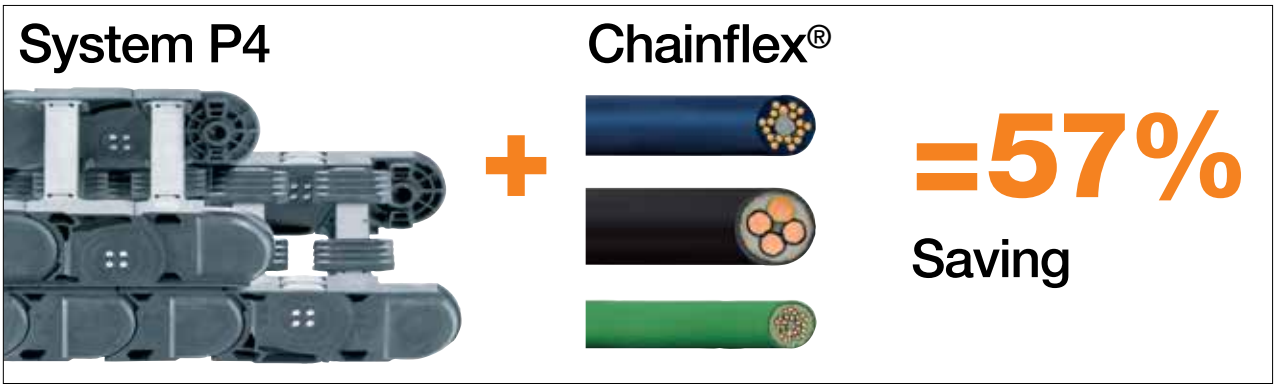
iF product design award
2007 igus® System P4

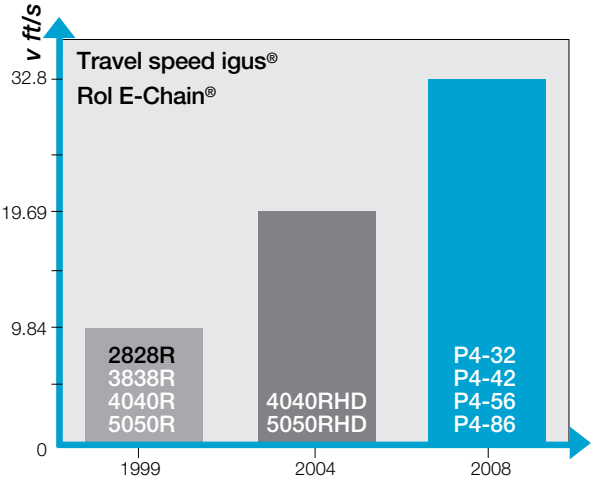
# Special solutions for long travel
# System P4 - Profile RoI E-Chain®
# Efficiency

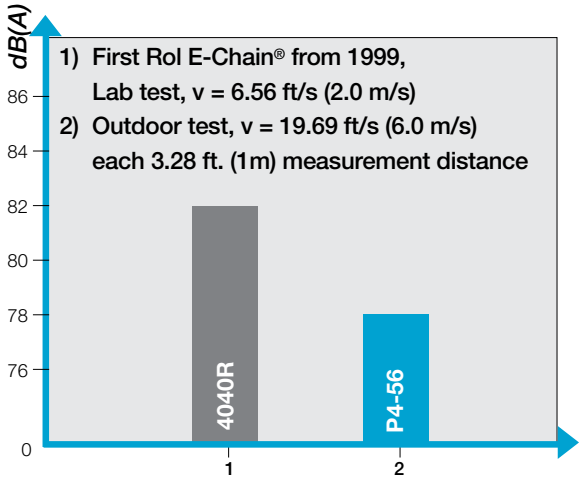
**Energy efficient polymer E-Chains® and cables reduce consumption by up to 57%**

With the right materials and clever design, the energy consumption can be drastically reduced, as now proven by current tests and sample calculations in the E-Chain® and cable laboratory at igus®. igus® E-Chains® and Chainflex® cables reduce the required drive power and extend the application's service life.



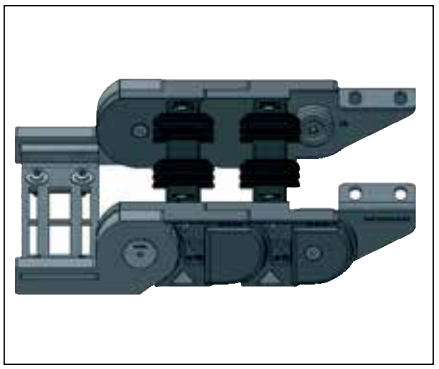
# Special solutions for long travel
# System P4 - Profile Rol E-Chain®
# Selection Table - Technical Data

## System P4 - Profile Rol E-Chain®

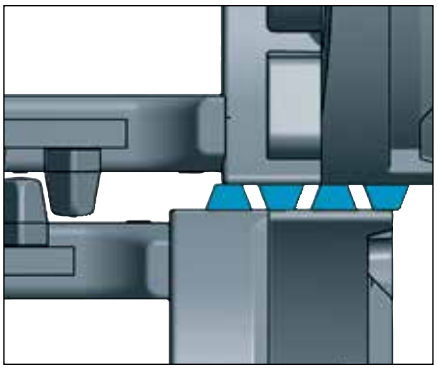
Safe, low noise, abrasion-resistant on long travels

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) | Maximum Travel ft. (m) |
|---|---|---|---|---|---|---|
| **P4-32** | 1.26 (32) | 3.94-7.87 (100-200) | 5.20-9.13 (132-232) | 2.13 (54) | 5.91-9.84 (150-250) | 1,641 (500) |
| **P4-42** | 1.65 (42) | 3.94-7.87 (100-200) | 6.06-10.00 (154-254) | 2.52 (64) | 3.94-13.78 (100-350) | 1,969 (600) |
| **P4-56** | 2.20 (56) | 7.36-15.75 (187-400) | 10.12-18.50 (257-470) | 3.31 (84) | 9.84-13.78 (250-350) | 2,625 (800) |
| **P4-80** | 3.15 (80) | 7.36-15.75 (187-400) | 10.35-18.74 (263-476) | 4.25 (108) | 9.84-13.78 (250-350) | 2,625 (800) |

Optimized interior separation program, cables last up to 4 times longer



Robust pivoting mounting brackets available



Offset operation of upper and lower run, resulting in continuous roll-through surface

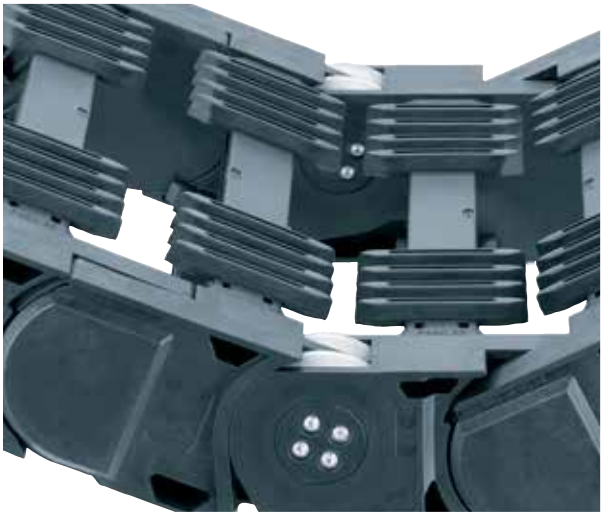
- Extension link for heavy fill weights
- 2 inner heights available (56, 80 mm)
- 50% higher fill weight possible
- Maximum rigidity
- Divides cross section into compartments (electric/hydraulic)

- Tribo-optimized plastic rollers for all P4 systems
- Wear optimized
- Long cycle life
- Improved rolling
- Lower noise and vibration
- Same pitch for roller links / E-Chain® links

- Aluminum guide trough system
- Special geometry in combination with AUTO-GLIDE cross bars allows for offset upper and lower run
- Strong installation kits for long cycle life
- Aluminum trough segments resist corrosion

# Special solutions for long travel
# System P4 - Profile Rol E-Chain®

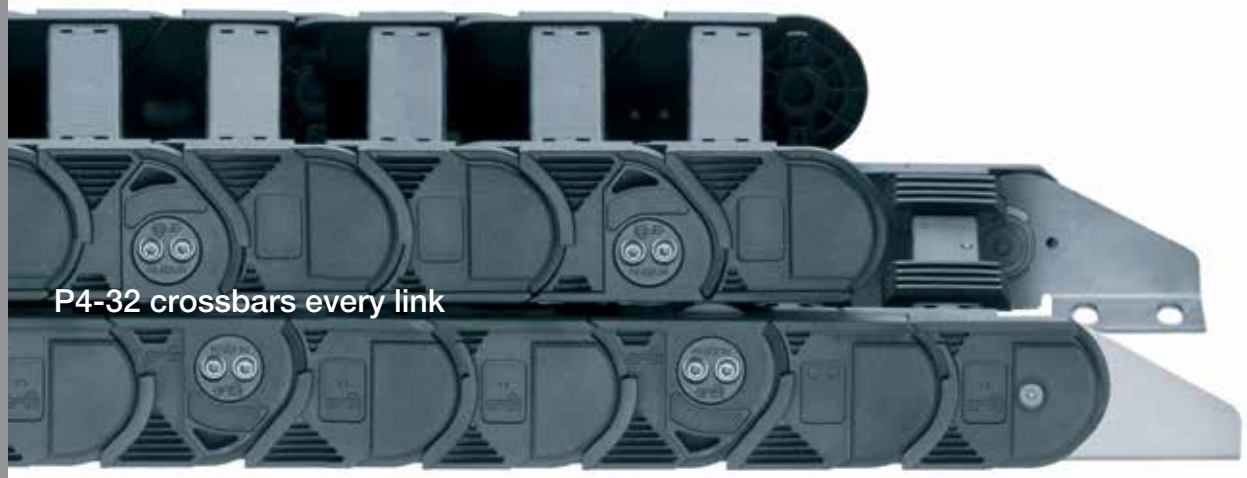
igus® P4 Rol E-Chain® in suitable aluminum SuperTrough. High speeds, longest travels, smooth running - thereby longest lifetime

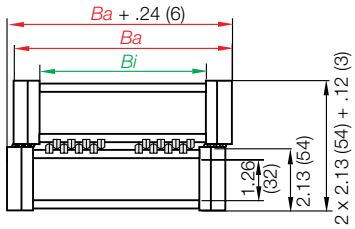


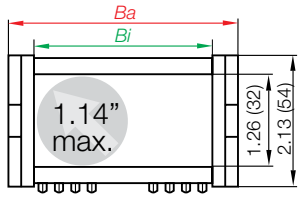
System P4 - Very quiet operation through identical pitch of all chain links. AUTO-GLIDE crossbars offer a safe guidance in very long travels

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-32
# Installation Dimensions

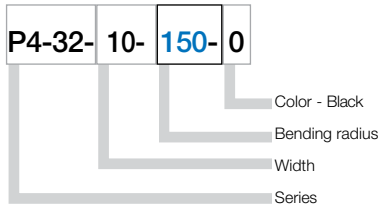
## P4-32 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars




**Part Number Structure**




| Part Number | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| P4-32-10- ☐ -0 | 3.94 (100) | 5.20 (132) | ≈ 1.82 (2.71) |
| P4-32-15- ☐ -0 | 5.91 (150) | 7.17 (182) | ≈ 2.04 (3.04) |
| P4-32-20- ☐ -0 | 7.87 (200) | 9.13 (232) | ≈ 2.24 (3.34) |

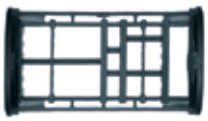
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: P4-32-20-[150]-0

| | 150 | 200 | 250 |
|---|---|---|---|
| R | 5.91 (150) | 7.87 (200) | 9.84 (250) |
| $H_2$ | 4.92 (125) | 4.92 (125) | 4.92 (125) |
| $D_2$ | 29.92 (760) | 39.96 (1015) | 55.12 (1400) |
| $K_2$ | 48.50 (1232) | 63.94 (1624) | 81.57 (2072) |

The bending radii [075] [100] [125] [300] are available upon request.
Please contact technical sales for approximate delivery times.

**Note:** We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

## Additional Features



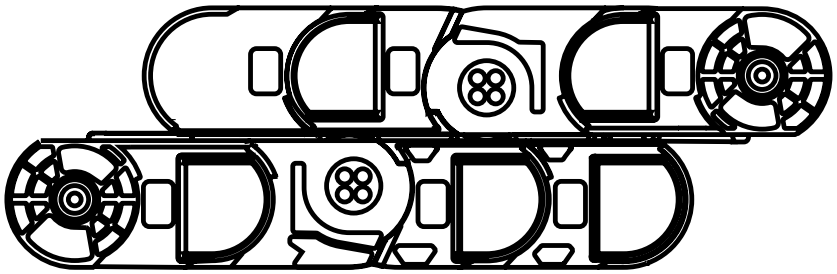
Interior separation available
➤ **Series E4-32**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-32
# Installation Dimensions



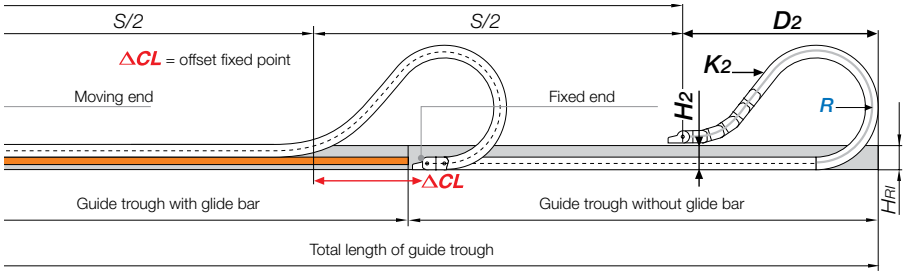
## Legend

S = Length of travel
R = Bending radius
$H_2$ = Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = Add-on
$H_{RI}$ = Trough inner height

The required clearance height: ***$H_F$ = H* + 1.57 in. (40 mm)** with 4.03 lbs/ft (6 kg/m) fill weight. Please consult igus® if space is particularly restricted.

## Sliding applications

**Long travel lengths up to 1,641 ft. (500 m)**
**In case of travels below 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**




**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**Chain length: =** $_{S}/_{2} + K_2$

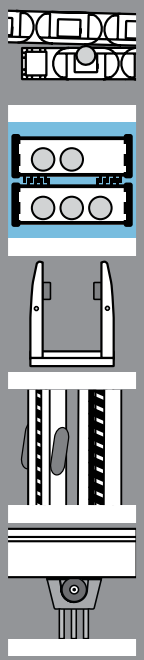
| R | 5.91 (150) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|
| $H_2$ | 4.92 (125) | 4.92 (125) | 4.92 (125) |
| $D_2$ | 29.92 (760) | 39.96 (1015) | 55.12 (1400) |
| $K_2$ | 48.50 (1232) | 63.94 (1624) | 81.57 (2072) |
| ΔCL | 14.80 (376) | 23.46 (596) | 32.87 (835) |

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Fill weight | max. 4.03 lbs/ft. (6 kg/m) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

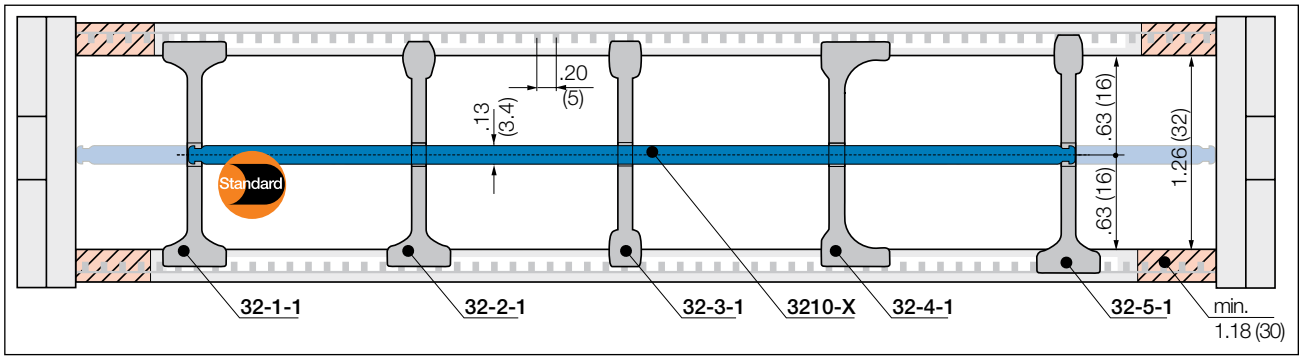
## Technical Data

Details of material properties
➤ **Chapter 1**

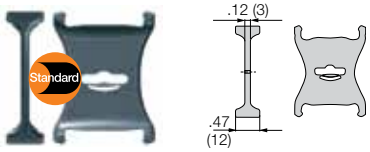
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-32
# Installation Dimensions



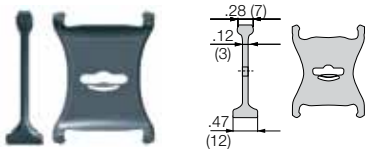

Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 32-1** |
| Assembled | **Part No. 32-1-1** |

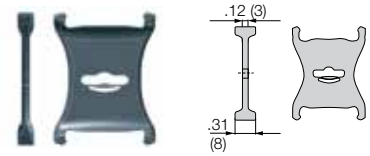
- **Standard separator 32-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 32-2** |
| Assembled | **Part No. 32-2-1** |

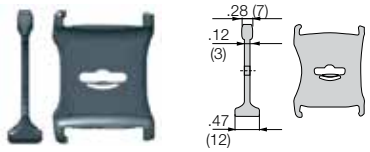
- **Separator 32-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 32-3** |
| Assembled | **Part No. 32-3-1** |

- **Separator 32-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

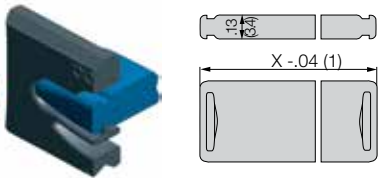



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 32-5** |
| Assembled | **Part No. 32-5-1** |

- **Separator 32-5**
  **Locks safely in .20" (5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-050** | **3210-050** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-075** | **3210-075** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

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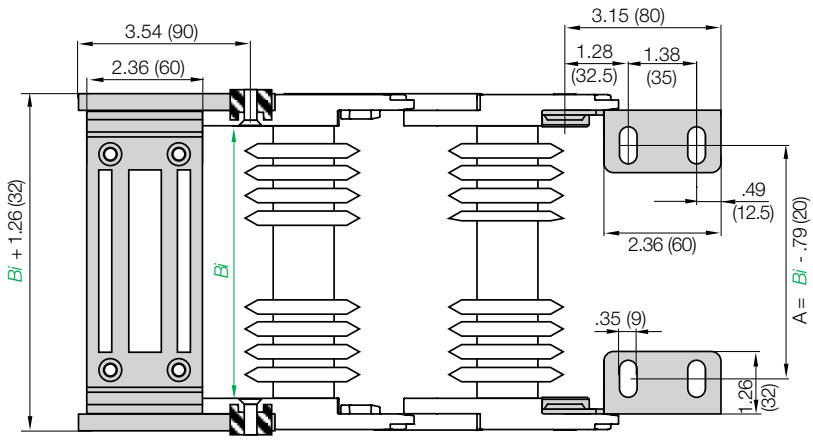
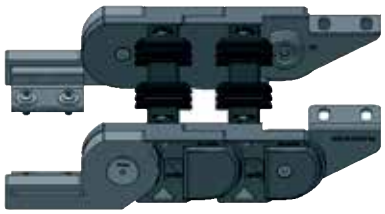
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-32
# Installation Dimensions

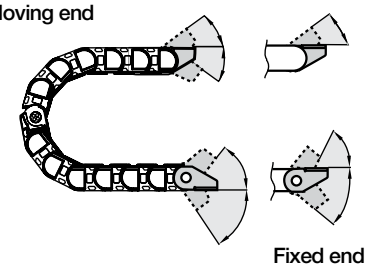
Fixed end
Polymer
P4.32100.5.VS.E45

Moving end
Steel
P4.32100.4.VS.E45



Moving end



Fixed end

## Mounting brackets pivoting - Recommended for rolling applications on long travels

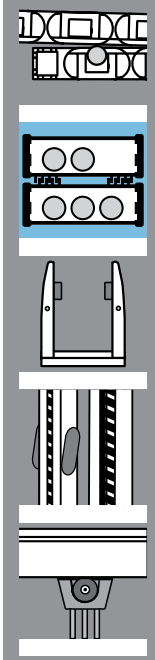
| Width<br>Index | Part No. full set for<br>Fixed end and moving end | *Bi*<br>in. (mm) | Dim. A<br>in. (mm) |
|---|---|---|---|
| 10- ➤ | P4-32100-54-10-VS-E45 | 3.94 (100) | 3.15 (80) |
| 15- ➤ | P4-32100-54-15-VS-E45 | 5.91 (150) | 5.12 (130) |
| 20- ➤ | P4-32100-54-20-VS-E45 | 7.87 (200) | 7.09 (180) |

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

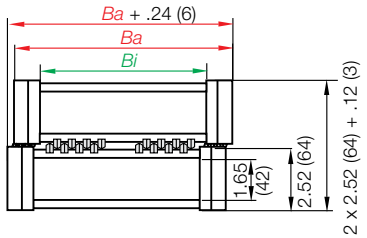
For the complete Chainfix range refer to ➤ Chapter 10

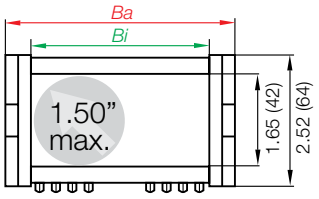
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-42
# Installation Dimensions

## P4-42 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars




**Part Number Structure**

P4-42- 10- 250- 0

- 0 – Color - Black
- 250 – Bending radius
- 10 – Width
- P4-42 – Series

| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| P4-42-10- ☐ -0 | 3.94 (100) | 6.06 (154) | ≈ 1.82 (2.71) |
| P4-42-15- ☐ -0 | 5.91 (150) | 8.03 (204) | ≈ 2.04 (3.04) |
| P4-42-20- ☐ -0 | 7.87 (200) | 10.00 (254) | ≈ 2.24 (3.34) |

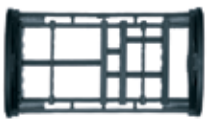
Choose from the radii below for all of the above sizes

*Radius* (mm) Example: P4-42-20-250-0

| | 100 | 125 | 150 | 200 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| $H_2$ | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) |
| $D_2$ | 20.47 (520) | 30.91 (785) | 37.01 (940) | 50.39 (1280) | 63.78 (1620) | 77.17 (1960) | 89.17 (2265) |
| $K_2$ | 36.61 (930) | 47.48 (1206) | 55.39 (1407) | 73.86 (1876) | 92.32 (2345) | 110.79 (2814) | 126.61 (3216) |

**Note:** We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

## Additional Features



Interior separation available
➤ **Series E4-42**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

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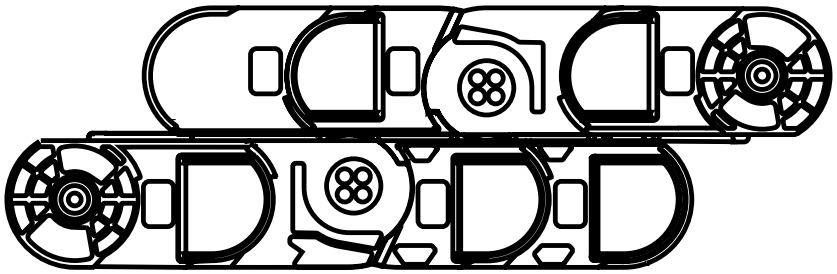
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-42
# Installation Dimensions



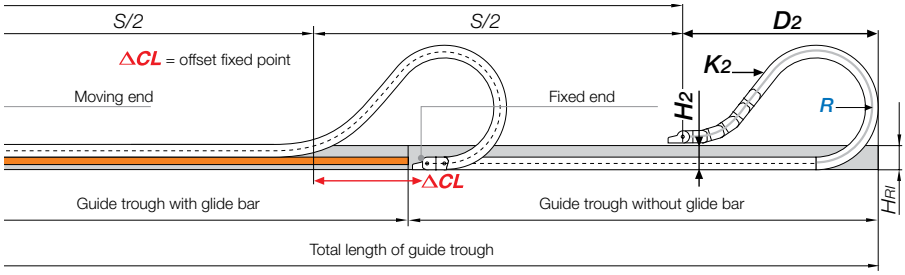
## Legend

S = Length of travel
R = Bending radius
$H_2$ = Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = Add-on
$H_{RI}$ = Trough inner height

The required clearance height: ***$H_F$ = H* + 1.57 in. (40 mm)** with 4.70 lbs/ft (7 kg/m) fill weight. Please consult igus® if space is particularly restricted.

## Sliding applications

**Long travel lengths up to 1,969 ft. (600 m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**




**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**Chain length: =** $_{S}/_{2} + K_2$

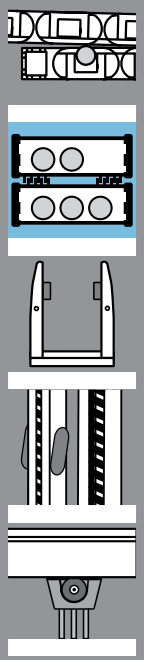
| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) | 5.51 (140) |
| $D_2$ | 20.47 (520) | 30.91 (785) | 37.01 (940) | 50.39 (1280) | 63.78 (1620) | 77.17 (1960) | 89.17 (2265) |
| $K_2$ | 36.61 (930) | 47.48 (1206) | 55.39 (1407) | 73.86 (1876) | 92.32 (2345) | 110.79 (2814) | 126.61 (3216) |
| ΔCL | 7.68 (195) | 130.19 (335) | 18.50 (470) | 30.12 (765) | 41.14 (1045) | 52.36 (1330) | 63.58 (1615) |

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Fill weight | max. 4.70 lbs/ft. (7 kg/m) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

## Technical Data

Details of material properties
➤ **Chapter 1**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-42
# Installation Dimensions

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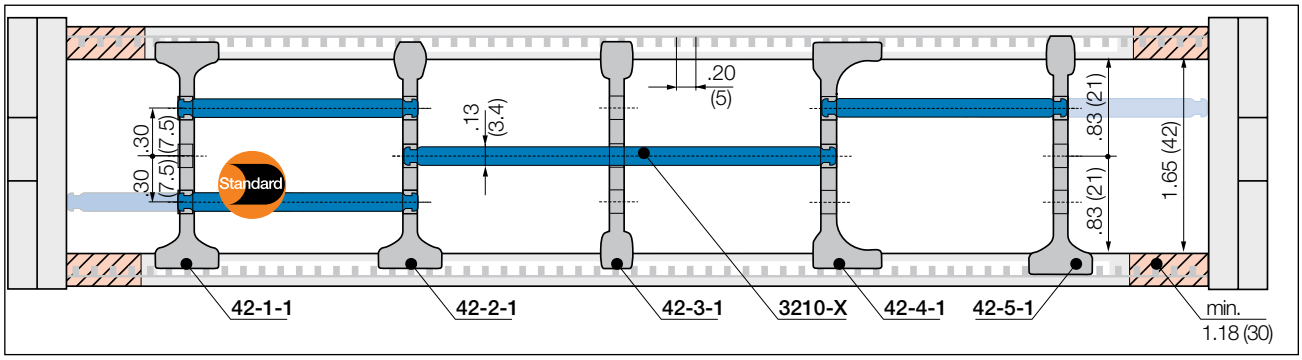
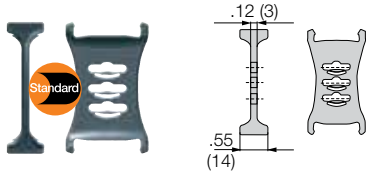


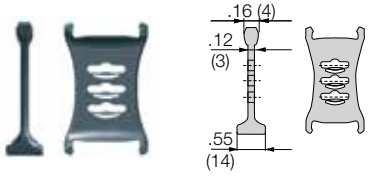

Note E-Tube: Please maintain a lateral spacing of 1.18" (30 mm) between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 42-1** |
| Assembled | **Part No. 42-1-1** |

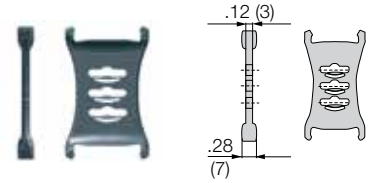
- **Standard separator 42-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 42-2** |
| Assembled | **Part No. 42-2-1** |

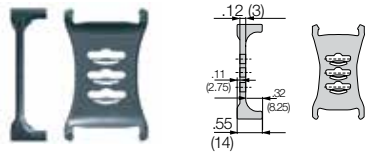
- **Separator 42-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 42-3** |
| Assembled | **Part No. 42-3-1** |

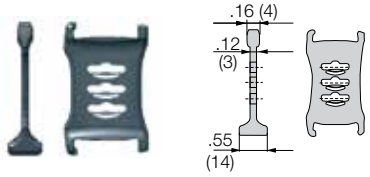
- **Separator 42-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 42-4** |
| Assembled | **Part No. 42-4-1** |

- **Separator 42-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

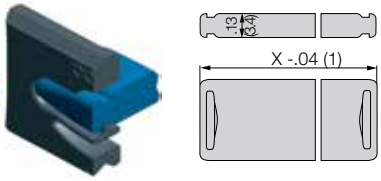



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 42-5** |
| Assembled | **Part No. 42-5-1** |

- **Separator 42-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 3200-X** |
| Assembled | **Part No. 3210-X** |

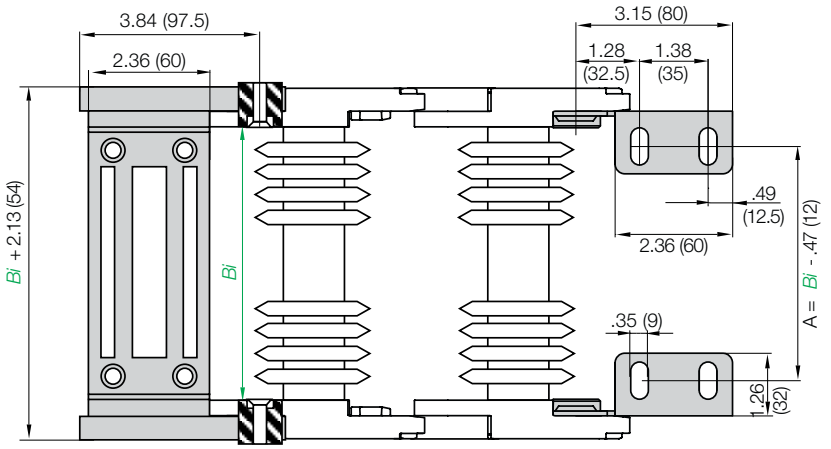
- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be used at one height.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **3200-050** | **3210-050** | 4.92 (125) | **3200-125** | **3210-125** | 8.86 (225) | **3200-225** | **3210-225** |
| 2.95 (075) | **3200-075** | **3210-075** | 5.91 (150) | **3200-150** | **3210-150** | 9.84 (250) | **3200-250** | **3210-250** |
| 3.94 (100) | **3200-100** | **3210-100** | 6.89 (175) | **3200-175** | **3210-175** | | | |
| 4.53 (115) | **3200-115** | **3210-115** | 7.87 (200) | **3200-200** | **3210-200** | | | |

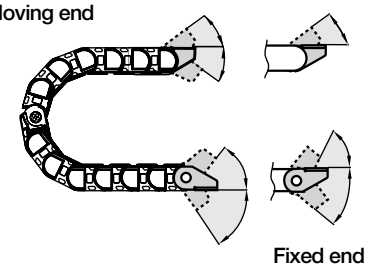
# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-42
# Installation Dimensions

Fixed end
Polymer
P4.42100.5.VS.E45

Moving end
Steel
P4.42100.4.VS.E45



Moving end



Fixed end

## Mounting brackets pivoting - Recommended for rolling applications on long travels

| Width Index | Part No. full set for Fixed end and moving end | *Bi* in. (mm) | Dim. A in. (mm) |
|---|---|---|---|
| 10- ➤ | P4-42100-54-10-VS-E45 | 3.94 (100) | 3.15 (80) |
| 15- ➤ | P4-42100-54-15-VS-E45 | 5.91 (150) | 5.12 (130) |
| 20- ➤ | P4-42100-54-20-VS-E45 | 7.87 (200) | 7.09 (180) |

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

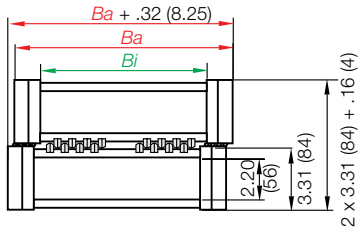
Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

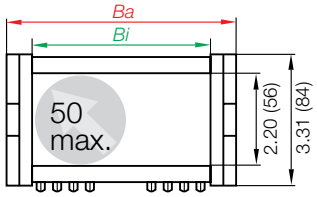
For the complete Chainfix range refer to ➤ Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

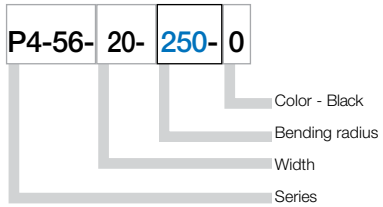
# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-56
# Installation Dimensions

## P4-56 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars




**Part Number Structure**




| Part Number | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|---|---|
| P4-56-18- | ☐ | -0 | 7.36 (187) | 9.84 (250) | ≈ 4.52 (6.72) |
| P4-56-20- | ☐ | -0 | 7.87 (200) | 10.63 (270) | ≈ 4.72 (7.03) |
| P4-56-25- | ☐ | -0 | 9.84 (250) | 12.60 (320) | ≈ 4.97 (7.39) |
| P4-56-30- | ☐ | -0 | 11.81 (300) | 14.57 (370) | ≈ 5.23 (7.79) |
| P4-56-35- | ☐ | -0 | 13.78 (350) | 16.54 (420) | ≈ 5.45 (8.11) |
| P4-56-40- | ☐ | -0 | 15.75 (400) | 18.50 (470) | ≈ 5.71 (8.50) |

Choose from the radii below for all of the above sizes

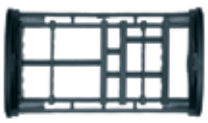
*Radius* (mm) Example: P4-56-20-[250]-0

| | 200 | 250 | 300 | 350 |
|---|---|---|---|---|
| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| $H_2$ | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ | 44.88 (1140) | 57.87 (1470) | 66.93 (1700) | 76.77 (1950) |
| $K_2$ | 71.65 (1820) | 89.57 (2275) | 103.90 (2639) | 118.23 (3003) |

The bending radii [150] [400] [450] [500] are available upon request.
Please contact technical sales for approximate delivery times.

**Note:** We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

## Additional Features



Interior separation available
➤ **Series E4-56**

Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

Extension link for heavy fill weights available ➤ **upon request**

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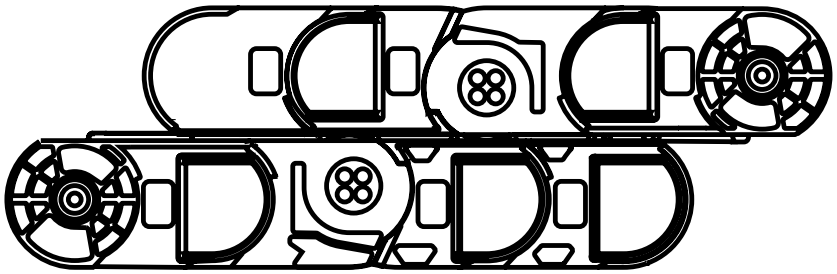
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-56
# Installation Dimensions



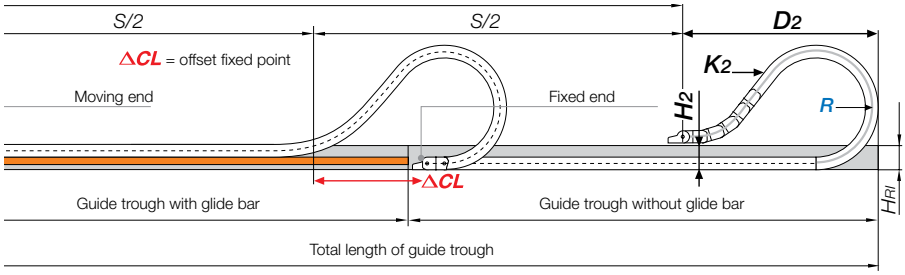
## Legend

S = Length of travel
R = Bending radius
$H_2$ = Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = Add-on
$H_{RI}$ = Trough inner height

The required clearance height: ***$H_F$ = H* + 1.97 in. (50 mm)** with 8.74 lbs/ft (13 kg/m) fill weight. Please consult igus® if space is particularly restricted.

## Sliding applications

**Long travel lengths up to 2,625 ft. (800 m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**




**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**Chain length: =** $_{S}/_{2} + K_2$

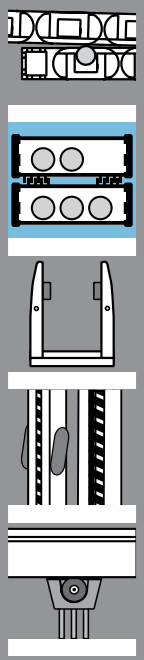
| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|
| $H_2$ | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ | 44.88 (1140) | 57.87 (1470) | 66.93 (1700) | 76.77 (1950) |
| $K_2$ | 71.65 (1820) | 89.57 (2275) | 103.90 (2639) | 118.23 (3003) |
| ΔCL | 21.65 (550) | 31.50 (800) | 39.37 (1000) | 47.24 (1200) |

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Fill weight | max. 8.74 lbs/ft. (13 kg/m) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

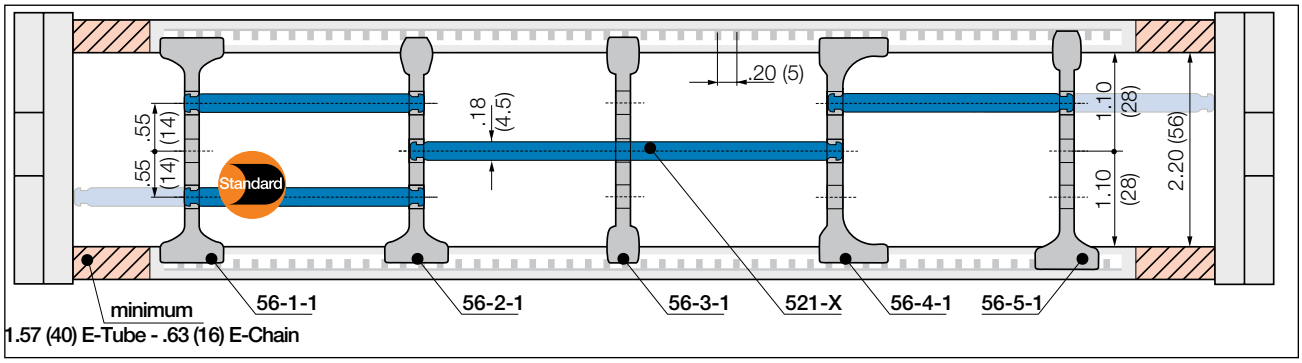
## Technical Data

Details of material properties
➤ **Chapter 1**

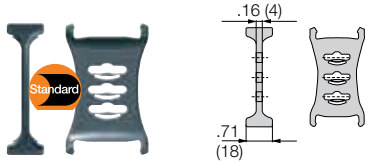
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# System P4 - RoI E-Chain® - Series P4-56
# Installation Dimensions



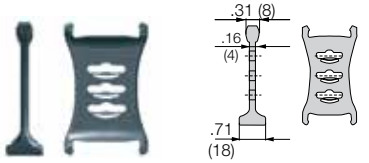

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 56-1** |
| Assembled | **Part No. 56-1-1** |

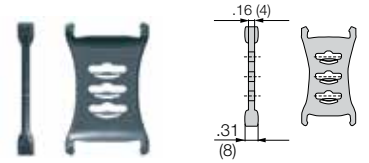
- **Standard separator 56-1**
  **for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 56-2** |
| Assembled | **Part No. 56-2-1** |

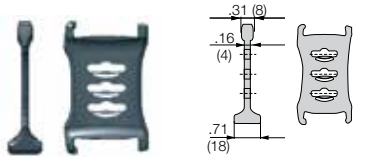
- **Separator 56-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 56-3** |
| Assembled | **Part No. 56-3-1** |

- **Separator 56-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

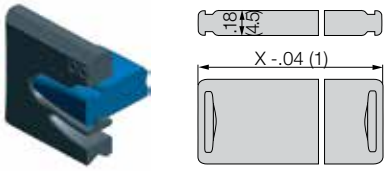



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 56-5** |
| Assembled | **Part No. 56-5-1** |

- **Separator 56-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 3 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-050** | **521-050** | 5.91 (150) | **520-150** | **521-150** | 11.81 (300) | **520-300** | **521-300** |
| 2.56 (065) | **520-065** | **521-065** | 6.89 (175) | **520-175** | **521-175** | 17.723 (450) | **520-450** | **521-450** |
| 2.95 (075) | **520-075** | **521-075** | 7.87 (200) | **520-200** | **521-200** | | | |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-225** | **521-225** | | | |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-250** | **521-250** | | | |

igus® E-Chain System®
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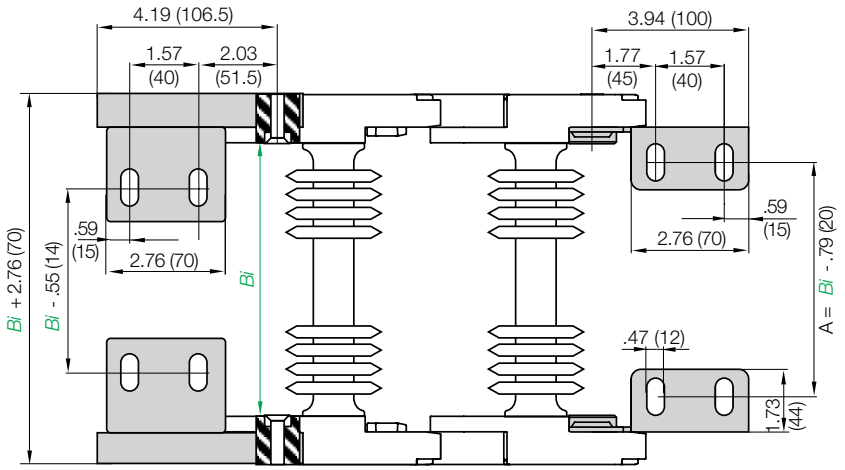
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

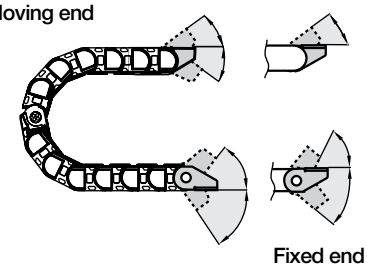
# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-56
# Installation Dimensions

Fixed end
Polymer
P4.56100.5.VS.E45

Moving end
Steel
P4.56100.4.VS.E45



Moving end



Fixed end

## Mounting brackets pivoting - Recommended for rolling applications on long travels

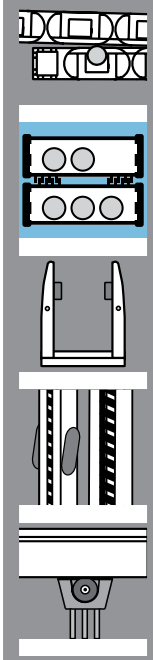
| Width Index | Part No. full set for Fixed end and moving end | *Bi* in. (mm) | Dim. A in. (mm) |
|---|---|---|---|
| 18- ➤ | P4-56100-54-VS-E45 | 7.09 (180) | 6.30 (160) |
| 20- ➤ | P4-56100-54-VS-E45 | 7.87 (200) | 7.09 (180) |
| 25- ➤ | P4-56100-54-VS-E45 | 9.84 (250) | 9.06 (230) |
| 30- ➤ | P4-56100-54-VS-E45 | 11.81 (300) | 11.02 (280) |
| 35- ➤ | P4-56100-54-VS-E45 | 13.78 (350) | 12.99 (330) |
| 40- ➤ | P4-56100-54-VS-E45 | 15.75 (400) | 14.96 (380) |

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

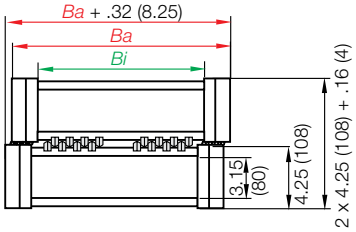
For the complete Chainfix range refer to ➤ Chapter 10

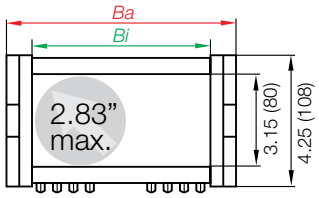
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



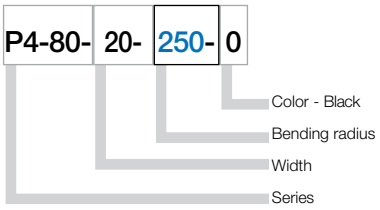
# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-80
# Installation Dimensions

## P4-80 - openable along both radii, crossbars every link - comb style AUTO-GLIDE crossbars




**Part Number Structure**




| Part Number | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) |
|---|---|---|---|
| P4-80-18- ☐ -0 | 7.36 (187) | 10.35 (263) | ≈ 5.95 (8.85) |
| P4-80-20- ☐ -0 | 7.87 (200) | 10.87 (276) | ≈ 6.14 (9.13) |
| P4-80-25- ☐ -0 | 9.84 (250) | 12.83 (326) | ≈ 6.36 (9.46) |
| P4-80-30- ☐ -0 | 11.81 (300) | 14.80 (376) | ≈ 6.61 (9.83) |
| P4-80-35- ☐ -0 | 13.78 (350) | 16.77 (426) | ≈ 6.85 (10.19) |
| P4-80-40- ☐ -0 | 15.75 (400) | 18.74 (476) | ≈ 7.03 (10.46) |

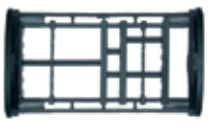
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: P4-80-20-[250]-0

| | 250 | 300 | 350 | 500 |
|---|---|---|---|---|
| R | 9.84 (250) | 11.81 (300) | 13.78 (350) | 19.68 (500) |
| $H_2$ | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ | 63.39 (1610) | 77.72 (1974) | 81.10 (2060) | 128.94 (3275) |
| $K_2$ | 70.87 (1800) | 90.55 (2300) | 106.30 (2700) | 161.42 (4100) |

The bending radii [150] [200] [400] [450] are available upon request.
Please contact technical sales for approximate delivery times.

**Note:** We recommend contacting our technical experts when planning your P4 application.
For distances below 32.8 ft. (10 m) we recommend a self-supporting E-Chain®.

## Additional Features



Interior separation available
➤ **Series E4-80**

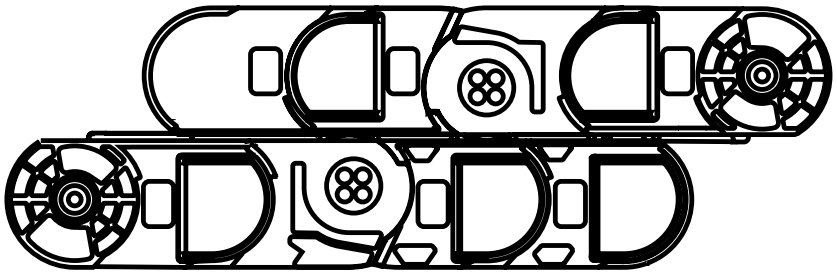
Robust steel mounting brackets available ➤ **Upon request**

Special P4 guide trough system available ➤ **Upon request**

Extension link for heavy fill weights available ➤ **upon request**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - RoI E-Chain® - Series P4-80
# Installation Dimensions



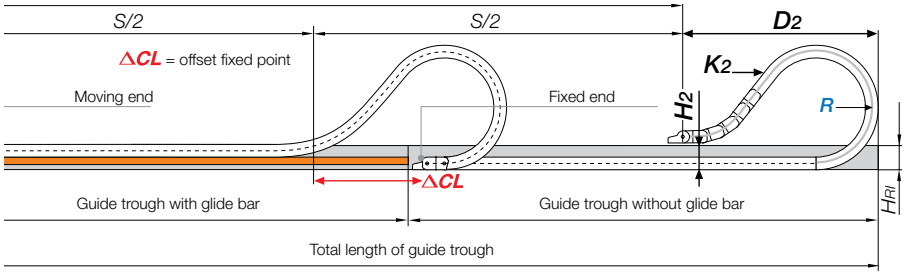
## Legend

S = Length of travel
R = Bending radius
$H_2$ = Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = Add-on
$H_{RI}$ = Trough inner height

The required clearance height: ***$H_F$ = H* + 1.97 in. (50 mm)** with 20.16 lbs/ft (30 kg/m) fill weight. Please consult igus® if space is particularly restricted.

## Sliding applications

**Long travel lengths up to 2,625 ft. (800 m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**




**Pitch per link: =** 3.94" (100 mm)
**Links per ft (m): =** 3.05 (10)
**Chain length: =** $_{S}/_{2} + K_2$

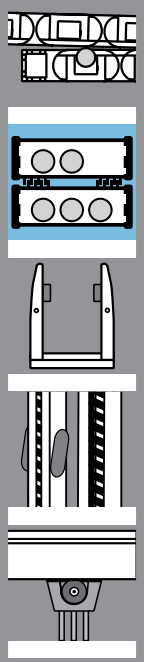
| R | 9.84 (250) | 11.81 (300) | 13.78 (350) | 19.68 (500) |
|---|---|---|---|---|
| $H_2$ | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ | 63.39 (1610) | 77.72 (1974) | 81.10 (2060) | 128.94 (3275) |
| $K_2$ | 70.87 (1800) | 90.55 (2300) | 106.30 (2700) | 161.42 (4100) |
| ΔCL | 23.62 (600) | 31.50 (800) | 38.19 (970) | 60.24 (1530) |

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 2,625 ft. (600 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Fill weight | max. 20.16 lbs/ft. (30 kg/m) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

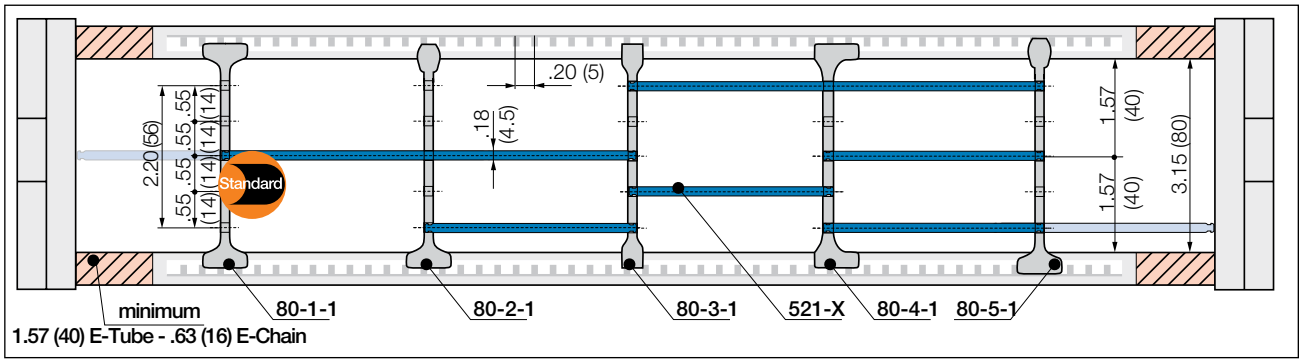
## Technical Data

Details of material properties
➤ **Chapter 1**

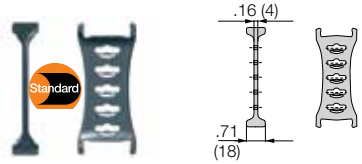
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-80
# Installation Dimensions



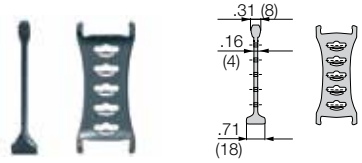

Note Please maintain a lateral spacing of 1.57" (40 mm) for E-Tube and .63" (16 mm) for E-Chains® between the separators and the side links. In the standard configuration separators are assembled every 2nd E-Chain® link




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 80-1** |
| Assembled | **Part No. 80-1-1** |

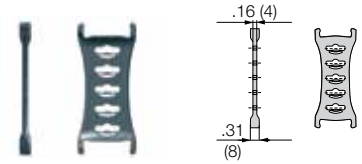
- **Standard separator 80-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 80-2** |
| Assembled | **Part No. 80-2-1** |

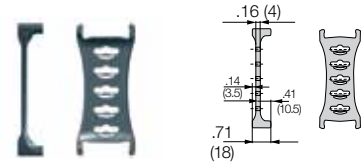
- **Separator 80-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 80-3** |
| Assembled | **Part No. 80-3-1** |

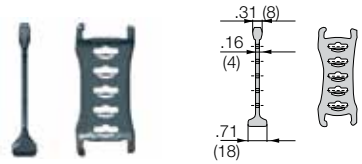
- **Separator 80-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-4** |
| Assembled | **Part No. 80-4-1** |

- **Separator 80-4**
  **For side mounted applications**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

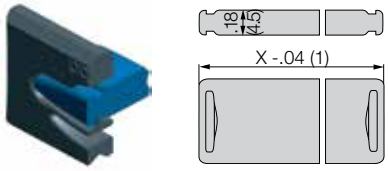



**Separator, asymmetrical**

| | |
|---|---|
| Unassembled | **Part No. 80-5** |
| Assembled | **Part No. 80-5-1** |

- **Separator 80-5**
  **Locks safely in .30" (7.5 mm) increments**
  Notch separator for exact positioning in E-Chains®. Recommended for side-mounted applications.

## Lockable full-width shelves - for the standard interior separation




**Full width shelf, lockable**

| | |
|---|---|
| Unassembled | **Part No. 520-X** |
| Assembled | **Part No. 521-X** |

- **Full width shelf, lockable**
  Shelf locks safely into separators on both ends, fixed width possible. Separators can be moved freely over the shelf in horizontal direction. Can be arranged at 5 different heights.

| Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled | Width X in. (mm) | Part No. Unassembled | Part No. Assembled |
|---|---|---|---|---|---|---|---|---|
| 1.97 (050) | **520-50** | **521-50** | 5.91 (150) | **520-125** | **521-125** | 11.81 (300) | **520-125** | **521-125** |
| 2.56 (065) | **520-65** | **521-65** | 6.89 (175) | **520-125** | **521-125** | 13.78 (350) | **520-125** | **521-125** |
| 2.95 (075) | **520-75** | **521-75** | 7.87 (200) | **520-125** | **521-125** | 14.76 (375) | **520-125** | **521-125** |
| 3.94 (100) | **520-100** | **521-100** | 8.86 (225) | **520-125** | **521-125** | 15.24 (387) | **520-125** | **521-125** |
| 4.92 (125) | **520-125** | **521-125** | 9.84 (250) | **520-125** | **521-125** | 17.723 (450) | **520-125** | **521-125** |

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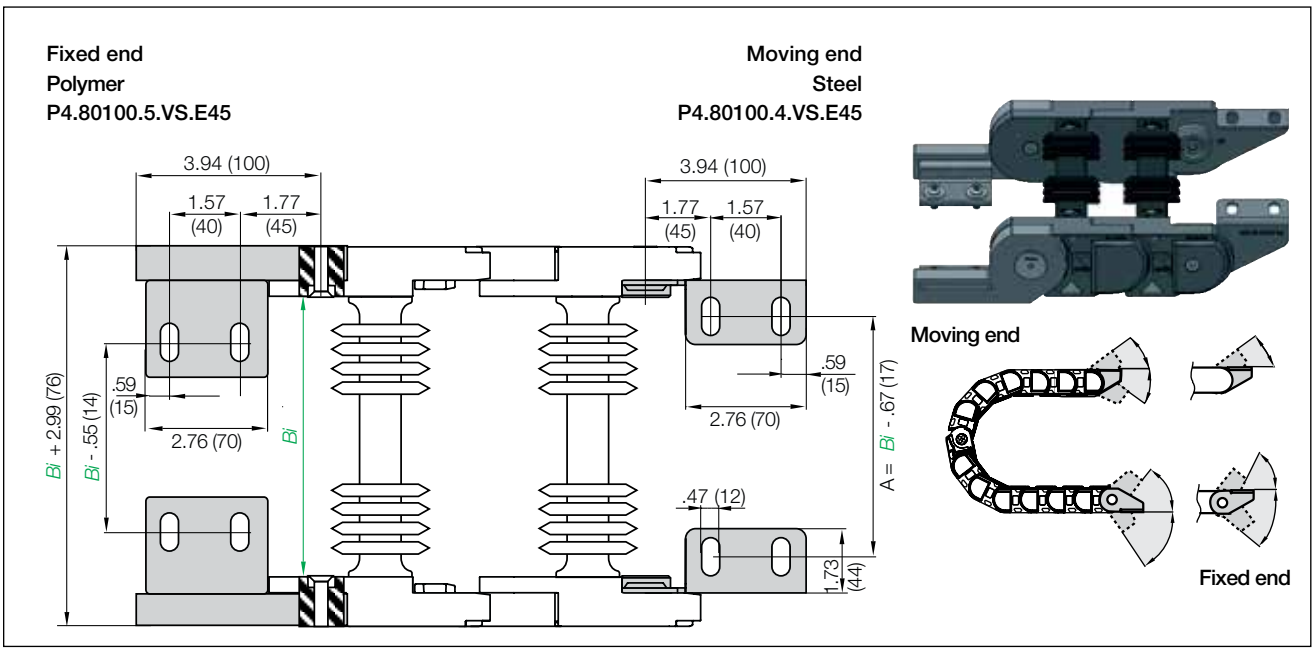
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# System P4 - Rol E-Chain® - Series P4-80
# Installation Dimensions




## Mounting brackets pivoting - Recommended for rolling applications on long travels

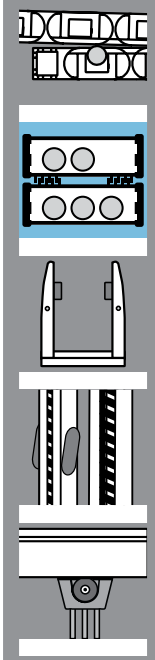
| Width Index | Part No. full set for Fixed end and moving end | *Bi* in. (mm) | Dim. A in. (mm) |
|---|---|---|---|
| 18- ➤ | P4-80100-54-VS-E45 | 7.09 (180) | 6.30 (160) |
| 20- ➤ | P4-80100-54-VS-E45 | 7.87 (200) | 7.09 (180) |
| 25- ➤ | P4-80100-54-VS-E45 | 9.84 (250) | 9.06 (230) |
| 30- ➤ | P4-80100-54-VS-E45 | 11.81 (300) | 11.02 (280) |
| 35- ➤ | P4-80100-54-VS-E45 | 13.78 (350) | 12.99 (330) |
| 40- ➤ | P4-80100-54-VS-E45 | 15.75 (400) | 14.96 (380) |

The mounting brackets for P4 E-Chains® consist of a steel mounting bracket at the moving end and a polymer mounting bracket at the fixed end. This ensure that the rollers move over a plain surface at the fixed end.

Strain relief, clamps, tiewrap plates, and clip-on solutions are available from stock.

For the complete Chainfix range refer to ➤ Chapter 10

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel E4/4 Rol E-Chain® Rolling instead of gliding

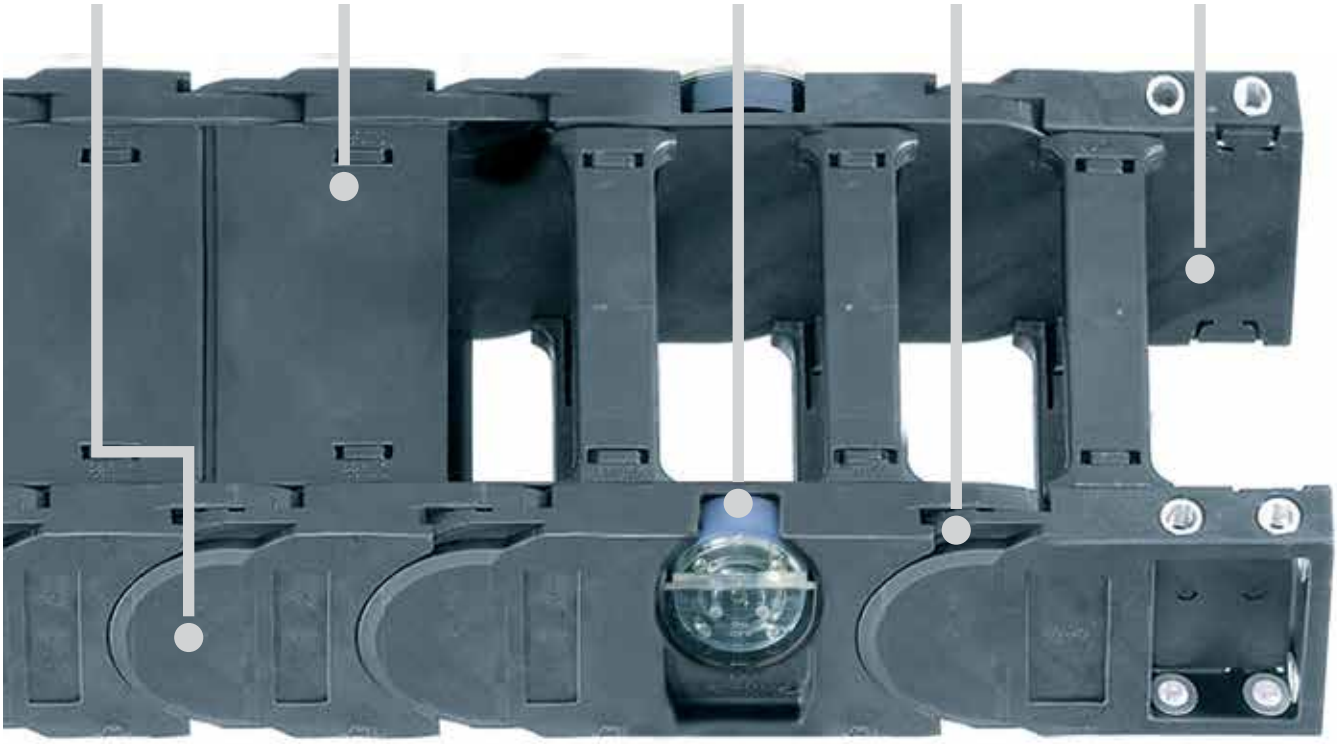
High push/pull forces:
Large bolt connection

Quick to fill:
Lids open on both sides, flip open in the outer radius

Long life:
High-strength rollers, quiet design, stainless steel ball bearings

High stability:
Torsional stiffness through undercut design

Universal:
KMA with attachment points on all sides



# Long travels up to 2,625 ft. (800 m), rolling instead of gliding - Rol E-Chain®

Conventionally designed E-Chains® are operated in the glide mode on long travels. The reason for developing the igus® Rol E-Chain® was the necessity to extend the technical limits of this operating mode. The demands on E-Chains® for long travels have increased steadily in recent years. Travels of 2,625 ft. (800 m) also pose new challenges in crane building such as high travel speeds and low noise with extreme cable loads.
Please contact us if you have decided for this product. We'll assist you in the project planning!

- Major reduction in drive power for moving the E-Chain®
- Travels up to 2,625 ft. (800 m) possible
- Speeds up to 19.69 ft/s (6 m/s) possible
- Various roller types for optimum application adaption
- Can be used even in dirty environments
- Available as ready-to-fit, made-to-specifications system with system guarantee

**Typical industries and applications**

- Cranes
- Warehousing
- Equipment manufacturing
- Gantry robots
- Material handling
- Mining
- Construction machinery

# Special solutions for long travel
# E4/4 Rol E-Chain®
# Selection Table - Technical Data

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) | Maximum Travel ft. (m) |
|---|---|---|---|---|---|---|
| | | | | | **Rol E-Chain® - with crossbars every link for the most demanding applications** | |
| 2828R | 1.26 (32) | 1.97-15.75 (50-400) | 2.91-16.69 (74-424) | 2.13 (54) | 4.92-11.81 (125-300)** | 820 (250) |
| 3838R | 1.65 (42) | 1.97-15.75 (50-400) | 3.03-16.81 (77-427) | 2.52 (64) | 5.91-13.78 (150-350)** | 1,082 (330) |
| 4040R | 2.20 (56) | 1.97-23.62 (50-600) | 3.39-25.04 (86-636) | 3.31 (84) | 7.87-19.69 (200-500)** | 1,641 (500) |
| 5050R | 3.15 (80) | 1.97-23.62 (50-600) | 3.94-25.59 (100-650) | 4.25 (108) | 9.84-19.69 (250-500)** | 1,969 (600) |
| | | | | | **Rol E-Chain® - E-Tubes fully enclosed, excellent cable protection** | |
| 7728R | 1.26 (32) | 1.97-11.81 (50-300) | 2.91-16.69 (74-424) | 2.13 (54) | 9.84-11.81 (250-300) | 820 (250) |
| 7838R | 1.65 (42) | 1.97-11.81 (50-300) | 3.03-16.81 (77-327) | 2.52 (64) | 4.92-13.78 (200-350) | 1,082 (330) |
| 8840R | 2.20 (56) | 2.95-18.19 (75-462) | 4.37-19.65 (111-499) | 3.31 (84) | 11.81-19.69 (300-500) | 1,641 (500) |
| 9850R | 3.15 (80) | 2.95-18.19 (75-462) | 4.92-20.20 (125-513) | 4.25 (108) | 11.81-39.37 (300-1000) | 1,969 (600) |
| | | | | | **Rol E-Chain® - with crossbars every link, Heavy Duty For very long travels with high additional fill weights** | |
| 4040RHD* | 2.20 (56) | 1.97-23.62 (50-600) | 4.09-25.75 (104-654) | 3.31 (84) | 7.87-15.75 (200-400) | 1,969 (600) |
| 5050RHD* | 3.15 (80) | 1.97-23.62 (50-600) | 4.33-25.98 (110-660) | 4.25 (108) | 9.84-19.69 (250-500) | 2,625 (800) |
| | | | | | **Rol E-Chain® - E-Tubes Heavy Duty fully enclosed, for very long travels with high additional fill weights** | |
| 8840RHD* | 2.20 (56) | 2.24-4.92 (57-125) | 5.08-20.31 (129-516) | 3.31 (84) | 11.81-15.75 (300-400) | 1,969 (600) |
| 9850RHD* | 3.15 (80) | 2.87-5.55 (73-141) | 5.31-20.55 (135-522) | 4.25 (108) | 11.81-19.69 (300-500) | 2,625 (800) |

**Smaller bending radii (only For E-Chains®) available upon request, please consult igus® for delivery time.

# Special solutions for long travel E4/4 Rol E-Chain®



Telephone 1-800-521-2747
Fax 1-401-438-7270

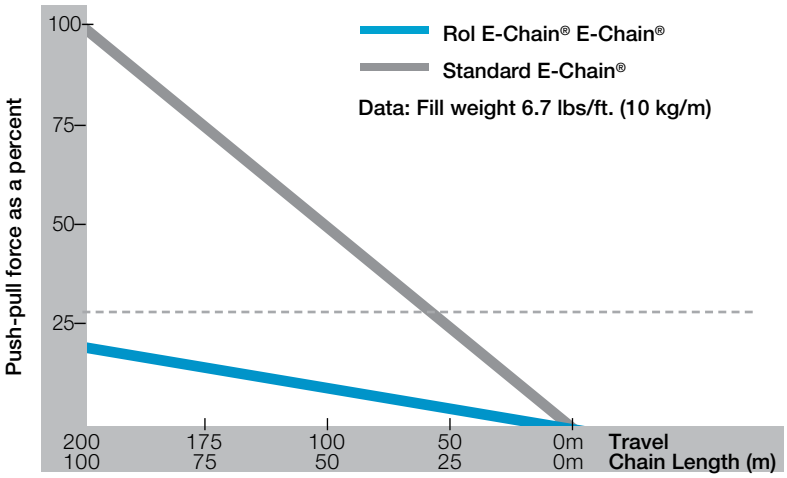
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



## Product Range Rol E-Chain®

Interior heights of 1.26", 1.65", 2.20", and 3.15" (32, 42, 56, and 80 mm) can be supplied from stock. All interior separation and mounting bracket options of the igus® System E4 are available. The standard guide troughs of the various chains from stock can be used. Rol E-Chains® can be opened on both sides. The Rol E-Chain® is available as a made-to-spec E-Chain Systems®. Chainflex® cables can be harnessed in Rol E-Chain to your specifications by igus® specialists and are packaged in an installation-friendly manner. Depending on the Rol E-Chain length it can be delivered on a drum. If cables from the Chainflex® product line are to be used, we will also be happy to provide a guarantee for the entire system. **Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact igus®.**

## Reduce push/pull forces by over 75% with igus® Rol E-Chain




The Rol E-Chain® roller E-Chain® compared with a conventional E-Chain System®

Shipyard-Crane: 590.5 ft. (180 m) travel, 20.16 lbs/ft (30 kg/m) fill weight: No problems since installation in 2001 with igus® Rol E-Chain®

igus® Rol E-Chain® Series 5050R in a steel plant in india with highly corrosive atmosphere -
Travel = 72 ft. (22 m), v = 3.28 ft/s (1 m/s), a = 3.28 ft/s² (1 m/s²)

Power plant application with igus® Rol E-Chain® 4040R -
Travel 151 ft. (46 m), Speed 4.92 ft/s (1.5 m/s), Fill weight 3.56 lbs/ft (5.3 kg/m)

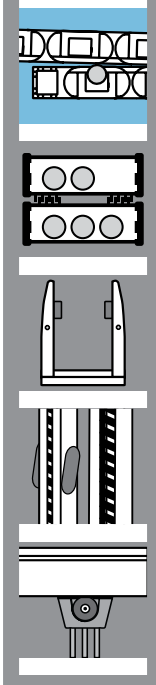
Assembled system in a ship unloading crane with igus® 5050RHD - Travel 248 ft. (106 m), Speed 13.12 ft/s (4 m/s), Fill weight 16.8 lbs/ft (25 kg/m)

Series 4040R on a coal unloading system -
Travel 623 ft. (190 m), Speed 1.6 ft/s (0.5 m/s), Fill weight 5.41 lbs/ft (8.05 kg/m)

Series 4040R in steel works environment -
Travel 34.5 ft. (10.5 m), Speed 197 ft/min (60 m/min), Fill weight 4.09 lbs/ft (6.084 kg/m)

igus® E-Chains® 5050RHD Rol E-Chain® in an igus® Aluminum SuperTrough = 75% less driving power

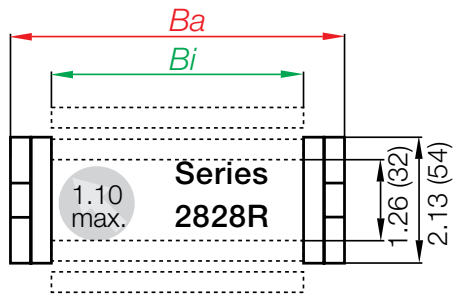




igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

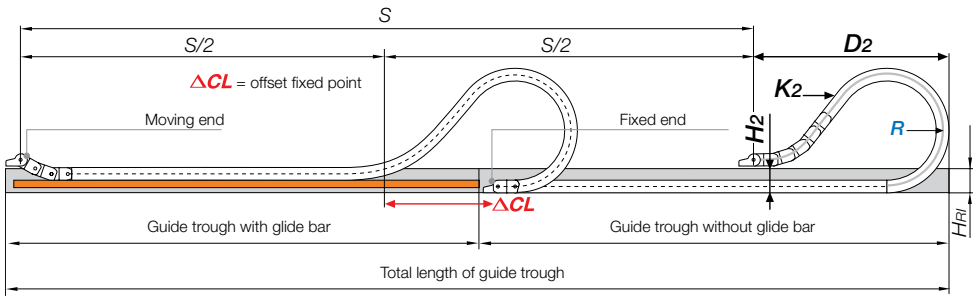
# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 2828R/R7728R

**Series 2828R - crossbars every link, openable along both radii**
**Series 7728R - fully enclosed, hinged, snap-open removable lids**




## Sliding applications

**Long travel lengths up to 820 ft. (250 m) fill weight up to 4.03 lbs/ft (6 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend a self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

| R | 4.92 (125**) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|
| $H_2$ +10 | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ +50 | 22.64 (575) | 27.56 (700) | 33.27 (845) | 37.80 (960) | 40.94 (1040) | 50.00 (1270) | 60.63 (1540) |
| $K_2$ | 35.28 (896) | 41.89 (1064) | 50.71 (1288) | 57.32 (1456) | 63.94 (1624) | 74.96 (1904) | 90.39 (2296) |
| ΔCL | 10.63 (270) | 14.96 (380) | 19.29 (490) | 23.62 (600) | 27.56 (700) | 33.07 (840) | 41.54 (1055) |

**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.48 (18)
**For center mount applications:**
**Chain length: =** $S/2 + K_2$

** This radius not available for E-Tubes

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 820 ft. (250 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 2828R/7728R
# Installation Dimensions

Supplement part number with required radius. Example: 2828R-30-300-0
Pitch: 2.20 in. (56mm) per link links/ft (m) = 5.49 (18)

| Part Number | | | | | Weight | |
|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 2828R lbs/ft (kg/m) | 7728R lbs/ft (kg/m) |
| 2828R-05- | [1]7728R-05- | -0 | 1.97 (50) | 2.91 (74) | ≈ 1.16 (1.73) | ≈ 1.76 (2.63) |
| 2828R-06- | | -0 | 2.68 (68) | 3.62 (92) | ≈ 1.20 (1.79) | – |
| 2828R-07- | 7728R-07- | -0 | 2.95 (75) | 3.90 (99) | ≈ 1.24 (1.84) | ≈ 1.84 (2.75) |
| 2828R-087- | | -0 | 3.43 (87) | 4.37 (111) | ≈ 1.30 (1.93) | – |
| 2828R-097 | | -0 | 3.82 (97) | 4.72 (120) | ≈ 1.34 (1.99) | – |
| 2828R-10- | 7728R-10- | -0 | 3.94 (100) | 4.88 (124) | ≈ 1.36 (2.02) | ≈ 1.90 (2.83) |
| 2828R-11- | 7728R-11- | -0 | 4.25 (108) | 5.20 (132) | ≈ 1.40 (2.08) | ≈ 1.98 (2.94) |
| 2828R-112- | | -0 | 4.41(112) | 5.39 (137) | ≈ 1.44 (2.15) | – |
| 2828R-12- | 7728R-12- | -0 | 4.92 (125) | 5.87 (149) | ≈ 1.48 (2.20) | ≈ 2.04 (3.03) |
| 2828R-137- | | -0 | 5.39 (137) | 6.38 (162) | ≈ 1.54 (2.29) | – |
| 2828R-15- | 7728R-15- | -0 | 5.91 (150) | 6.85 (174) | ≈ 1.60 (2.38) | ≈ 2.14 (3.19) |
| 2828R-162- | | -0 | 6.38 (162) | 7.36 (187) | ≈ 1.64 (2.44) | – |
| 2828R-17- | 7728R-17- | -0 | 6.61 (168) | 7.56 (192) | ≈ 1.69 (2.51) | ≈ 2.28 (3.39) |
| 2828R-18- | | -0 | 6.89 (175) | 7.83 (199) | ≈ 1.72 (2.56) | – |
| 2828R-187- | | -0 | 7.36 (187) | 8.35 (212) | ≈ 1.78 (2.65) | – |
| 2828R-20- | 7728R-20- | -0 | 7.87 (200) | 8.82 (224) | ≈ 1.84 (2.74) | ≈ 2.41 (3.59) |
| 2828R-212- | | -0 | 8.35 (212) | 9.33 (237) | ≈ 1.93 (2.87) | – |
| 2828R-23- | | -0 | 8.86 (225) | 9.80 (249) | ≈ 1.96 (2.92) | – |
| 2828R-237- | | -0 | 9.33 (237) | 10.31 (262) | ≈ 2.05 (3.05) | – |
| 2828R-25- | 7728R-25- | -0 | 9.84 (250) | 10.79 (274) | ≈ 2.08 (3.10) | ≈ 2.72 (4.04) |
| 2828R-262- | | -0 | 10.31 (262) | 11.26 (286) | ≈ 2.14 (3.19) | – |
| 2828R-28 | | -0 | 10.83 (275) | 11.77 (299) | ≈ 2.20 (3.28) | – |
| 2828R-29- | | -0 | 11.30 (287) | 12.28 (312) | ≈ 2.26 (3.37) | – |
| 2828R-30- | 7728R-30- | -0 | 11.81 (300) | 12.76 (324) | ≈ 2.33 (3.46) | ≈ 2.98 (4.43) |
| 2828R-312- | | -0 | 12.28 (312) | 13.27 (337) | ≈ 2.41 (3.59) | – |
| 2828R-325- | | -0 | 12.79 (325) | 13.74 (349) | ≈ 2.47 (3.68) | – |
| 2828R-337- | | -0 | 13.27 (337) | 14.25 (362) | ≈ 2.53 (3.77) | – |
| 2828R-350- | | -0 | 13.78 (350) | 14.72 (374) | ≈ 2.59 (3.86) | – |
| 2828R-362- | | -0 | 14.25 (362) | 15.24 (387) | ≈ 2.65 (3.95) | – |
| 2828R-375- | | -0 | 14.76 (375) | 15.71 (399) | ≈ 2.72 (4.04) | – |
| 2828R-387- | | -0 | 15.24 (387) | 16.22 (412) | ≈ 2.76 (4.11) | – |
| 2828R-400 | | -0 | 15.75 (400) | 16.69 (424) | ≈ 2.81 (4.18) | – |

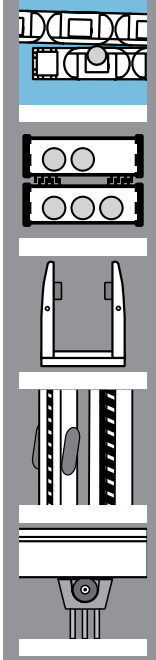
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2828R-30-300-0

| | 125** | 150 | 175 | 200 | 220 | 250 | 300 |
|---|---|---|---|---|---|---|---|
| R | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
| $H_2$ +10 | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ +50 | 22.64 (575) | 27.56 (700) | 33.27 (845) | 37.80 (960) | 40.94 (1040) | 50.00 (1270) | 60.63 (1540) |
| $K_2$ | 35.28 (896) | 41.89 (1064) | 50.71 (1288) | 57.32 (1456) | 63.94 (1624) | 74.96 (1904) | 90.39 (2296) |

** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

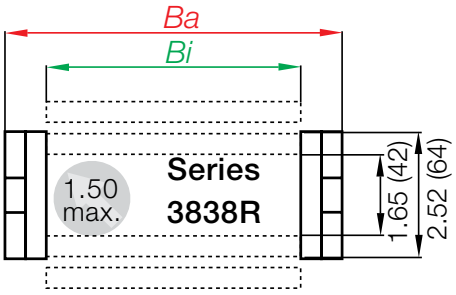
1.26”

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



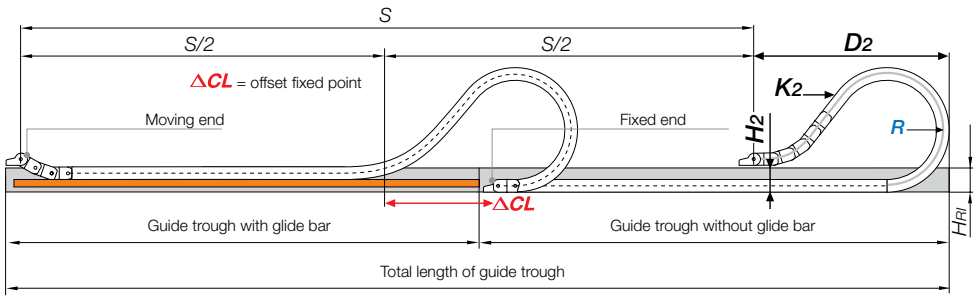
# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 3838R/R7838R

Series 3838R - crossbars every link, openable along both radii
Series 7838R - fully enclosed, hinged, snap-open removable lids




## Sliding applications

**Long travel lengths up to 1,083 ft. (330 m), Fill weights up to 4.70 lbs/ft (7 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

| R | 5.91 (150**) | 6.69 (170**) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|
| $H_2$ +10 | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ +50 | 26.77 (680) | 32.28 (820) | 39.76 (1010) | 40.55 (1030) | 49.02 (1245) | 64.17 (1630) | 72.05 (1830) |
| $K_2$ | 42.13 (107) | 50.12 (1273) | 60.67 (1541) | 63.31 (1608) | 73.86 (1876) | 97.60 (2479) | 108.15 (2747) |
| ΔCL | 13.58 (345) | 17.91 (455) | 24.02 (610) | 23.38 (670) | 32.48 (825) | 42.32 (1075) | 50.59 (1285) |

**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $\frac{S}{2} + K$

** This radius not available for E-Tubes

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,083 ft. (330 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 3838R/R7838R
# Installation Dimensions



Supplement part number with required radius. Example: 3838R-30-300-0
Pitch: 2.64 in. (67mm) per link, links/ft (m) = 4.57 (15)

| Part Number | | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | | in. (mm) | in. (mm) | 3838R lbs/ft (kg/m) | 7838R lbs/ft (kg/m) |
| 3838R-05- | [1]7838R-05- | □ | -0 | 1.97 (50) | 3.03 (77) | ≈ 1.38 (2.06) | ≈ 1.51 (2.25) |
| 3838R-06- | | □ | -0 | 2.68 (68) | 3.74 (95) | ≈ 1.40 (2.09) | – |
| 3838R-07- | 7838R-07- | □ | -0 | 2.95 (75) | 4.02 (102) | ≈ 1.42 (2.12) | ≈ 1.60 (2.38) |
| 3838R-087- | | □ | -0 | 3.43 (87) | 4.53 (115) | ≈ 1.47 (2.18) | – |
| 3838R-097- | | □ | -0 | 3.82 (97) | 4.84 (123) | ≈ 1.50 (2.23) | – |
| 3838R-10- | 7838R-10- | □ | -0 | 3.94 (100) | 5.00 (127) | ≈ 1.51 (2.25) | ≈ 1.75 (2.60) |
| 3838R-11- | 7838R-11- | □ | -0 | 4.25 (108) | 5.31 (135) | ≈ 1.55 (2.30) | ≈ 1.78 (2.65) |
| 3838R-112- | | □ | -0 | 4.41(112) | 5.51 (140) | ≈ 1.55 (2.30) | – |
| 3838R-12- | 7838R-12- | □ | -0 | 4.92 (125) | 5.98 (152) | ≈ 1.61 (2.40) | ≈ 1.89 (2.81) |
| 3838R-137- | | □ | -0 | 5.39 (137) | 6.50 (165) | ≈ 1.64 (2.44) | – |
| 3838R-15- | 7838R-15- | □ | -0 | 5.91 (150) | 6.97 (177) | ≈ 1.70 (2.53) | ≈ 2.06 (3.07) |
| 3838R-162- | | □ | -0 | 6.38 (162) | 7.48 (190) | ≈ 1.71 (2.55) | – |
| 3838R-17- | 7838R-17- | □ | -0 | 6.61 (168) | 7.68 (195) | ≈ 1.76 (2.62) | ≈ 2.18 (3.24) |
| 3838R-18- | | □ | -0 | 6.89 (175) | 7.95 (202) | ≈ 1.76 (2.62) | – |
| 3838R-187- | | □ | -0 | 7.36 (187) | 8.46 (215) | ≈ 1.81 (2.69) | – |
| 3838R-20- | 7838R-20- | □ | -0 | 7.87 (200) | 8.94 (227) | ≈ 1.86 (2.77) | ≈ 2.37 (3.53) |
| 3838R-212- | | □ | -0 | 8.35 (212) | 9.45 (240) | ≈ 1.91 (2.84) | – |
| 3838R-23- | | □ | -0 | 8.86 (225) | 9.92 (252) | ≈ 1.96 (2.92) | – |
| 3838R-237- | | □ | -0 | 9.33 (237) | 10.43 (265) | ≈ 1.99 (2.96) | – |
| 3838R-25- | 7838R-25- | □ | -0 | 9.84 (250) | 10.91 (277) | ≈ 2.05 (3.05) | ≈ 2.91 (4.33) |
| 3838R-262- | | □ | -0 | 10.31 (262) | 11.42 (290) | ≈ 2.06 (3.06) | – |
| 3838R-28 | | □ | -0 | 10.83 (275) | 11.89 (302) | ≈ 2.13 (3.17) | – |
| 3838R-29- | | □ | -0 | 11.30 (287) | 12.40 (315) | ≈ 2.14 (3.19) | – |
| 3838R-30- | 7838R-30- | □ | -0 | 11.81 (300) | 12.87 (327) | ≈ 2.23 (3.32) | ≈ 3.29 (4.89) |
| 3838R-312- | | □ | -0 | 12.28 (312) | 13.39 (340) | ≈ 2.24 (3.34) | – |
| 3838R-325- | | □ | -0 | 12.79 (325) | 13.86 (352) | ≈ 2.29 (3.41) | – |
| 3838R-337- | | □ | -0 | 13.27 (337) | 14.37 (365) | ≈ 2.33 (3.46) | – |
| 3838R-350- | | □ | -0 | 13.78 (350) | 15.41 (377) | ≈ 2.47 (3.68) | – |
| 3838R-362- | | □ | -0 | 14.25 (362) | 15.36 (390) | ≈ 2.51 (3.74) | – |
| 3838R-375- | | □ | -0 | 14.76 (375) | 15.83 (402) | ≈ 2.55 (3.79) | – |
| 3838R-387- | | □ | -0 | 15.24 (387) | 16.34 (415) | ≈ 2.59 (3.85) | – |
| 3838R-400 | | □ | -0 | 15.75 (400) | 16.81 (427) | ≈ 2.62 (3.90) | – |

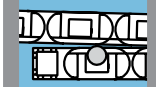
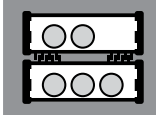
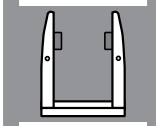
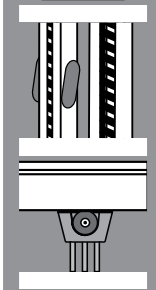
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 3838R-30-300-0

| | 150** | 170** | 200 | 215 | 250 | 300 | 350 |
|---|---|---|---|---|---|---|---|
| R | 5.91 (150) | 6.69 (170) | 7.87 (200) | 8.46 (215) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| $H_2$ +10 | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ +50 | 26.77 (680) | 32.28 (820) | 39.76 (1010) | 40.55 (1030) | 49.02 (1245) | 64.17 (1630) | 72.05 (1830) |
| $K_2$ | 42.13 (107) | 50.12 (1273) | 60.67 (1541) | 63.31 (1608) | 73.86 (1876) | 97.60 (2479) | 108.15 (2747) |

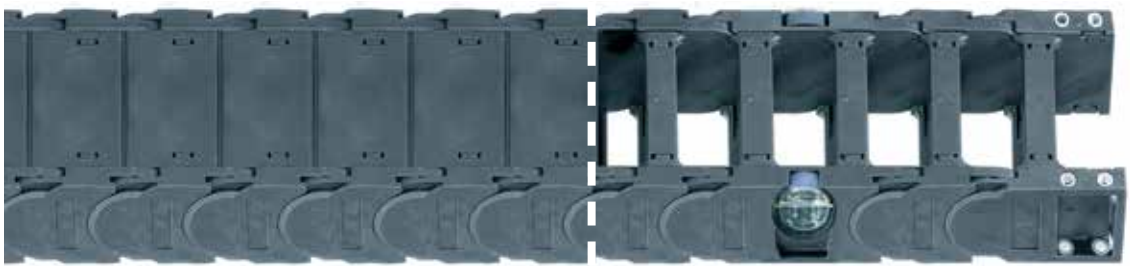
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

1.65”

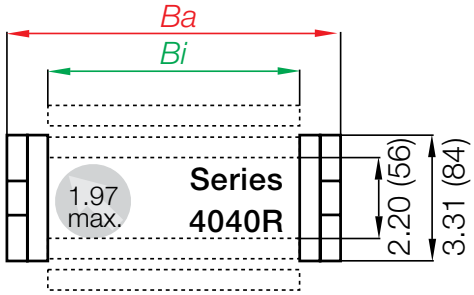
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 4040R/R8840R

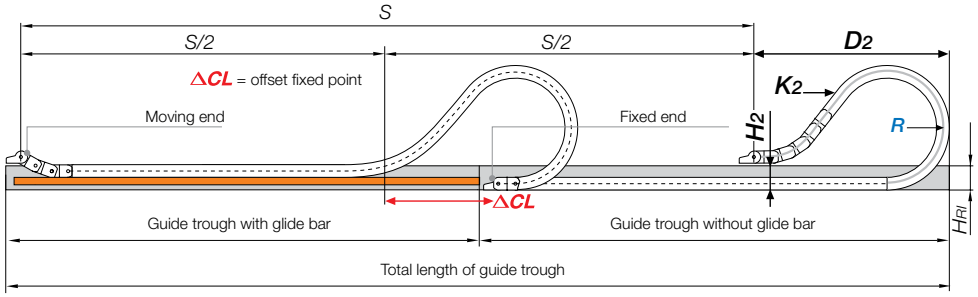


Series 4040R - crossbars every link, openable along both radii
Series 8840R - fully enclosed, hinged, snap-open removable lids




## Sliding applications

**Long travel lengths up to 1,641 ft. (500 m), Fill weights up to 8.74 lbs/ft (13 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
|---|---|---|---|---|---|
| $H_2$ +10 | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ +50 | 48.43 (1230) | 53.94 (1370) | 62.99 (1600) | 72.83 (1850) | 81.50 (2070) |
| $K_2$ | 71.65 (1820) | 85.98 (2184) | 100.31 (2548) | 114.65 (2912) | 128.98 (3276) |
| ΔCL | 20.67 (525) | 27.95 (710) | 35.43 (900) | 42.91 (1090) | 50.20 (1275) |

**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,641 ft. (500 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E4/4 Rol E-Chain® - Series 4040R/R8840R
# Installation Dimensions



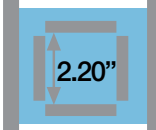
Supplement part number with required radius. Example: 4040R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | in. (mm) | in. (mm) | 4040R lbs/ft (kg/m) | 8840R lbs/ft (kg/m) |
| 4040R-05- | | -0 | 1.97 (50) | 3.39 (86) | ≈ 2.45 (3.65) | – |
| 4040R-06- | | -0 | 2.56 (65) | 3.98 (101) | ≈ 2.47 (3.67) | – |
| 4040R-07- | [1]8840R-07- | -0 | 2.95 (75) | 4.37 (111) | ≈ 2.54 (3.78) | ≈ 2.85 (4.24) |
| 4040R-08- | | -0 | 3.43 (87) | 4.84 (123) | ≈ 2.57 (3.83) | – |
| 4040R-10- | 8840R-10- | -0 | 3.94 (100) | 5.35 (136) | ≈ 2.66 (3.96) | ≈ 3.04 (4.52) |
| 4040R-11- | | -0 | 4.41 (112) | 5.87 (149) | ≈ 2.75 (4.09) | – |
| 4040R-12- | 8840R-12- | -0 | 4.92 (125) | 6.34 (161) | ≈ 2.80 (4.16) | ≈ 3.28 (4.88) |
| 4040R-13- | | -0 | 5.39 (137) | 6.85 (174) | ≈ 2.88 (4.29) | – |
| 4040R-15- | 8840R-15- | -0 | 5.91 (150) | 7.32 (186) | ≈ 2.93 (4.36) | ≈ 3.57 (5.31) |
| 4040R-16- | | -0 | 6.38 (162) | 7.83 (199) | ≈ 3.00 (4.47) | – |
| 4040R-17- | 8840R-17 | -0 | 6.89 (175) | 8.31 (211) | ≈ 3.08 (4.58) | ≈ 3.74 (5.56) |
| 4040R-18- | | -0 | 7.36 (187) | 8.81 (224) | ≈ 3.15 (4.69) | – |
| 4040R-20- | 8840R-20- | -0 | 7.87 (200) | 9.29 (236) | ≈ 3.17 (4.71) | ≈ 3.96 (5.89) |
| 4040R-21- | | -0 | 8.35 (212) | 9.80 (249) | ≈ 3.24 (4.82) | – |
| 4040R-22- | | -0 | 8.86 (225) | 10.28 (261) | ≈ 3.28 (4.88) | – |
| 4040R-23- | | -0 | 9.33 (237) | 10.79 (274) | ≈ 3.37 (5.02) | – |
| 4040R-25- | 8840R-25- | -0 | 9.84 (250) | 11.26 (286) | ≈ 3.43 (5.10) | ≈ 4.44 (6.61) |
| 4040R-26- | | -0 | 10.31 (262) | 11.77 (299) | ≈ 3.49 (5.19) | – |
| 4040R-27- | 8840R-27 | -0 | 10.83 (275) | 12.24 (311) | ≈ 3.56 (5.30) | ≈ 4.63 (6.89) |
| 4040R-28- | | -0 | 11.30 (287) | 12.76 (324) | ≈ 3.58 (5.32) | – |
| 4040R-30- | 8840R-30- | -0 | 11.81 (300) | 13.23 (336) | ≈ 3.72 (5.54) | ≈ 4.89 (7.27) |
| 4040R-31- | | -0 | 12.28 (312) | 13.74 (349) | ≈ 3.75 (5.58) | – |
| 4040R-32- | | -0 | 12.79 (325) | 14.21 (361) | ≈ 3.78 (5.63) | – |
| 4040R-33- | | -0 | 13.27 (337) | 14.72 (374) | ≈ 3.90 (5.81) | – |
| 4040R-35- | 8840R-35- | -0 | 13.78 (350) | 15.20 (386) | ≈ 4.01 (5.96) | ≈ 5.39 (8.02) |
| 4040R-36- | | -0 | 14.25 (362) | 15.71 (399) | ≈ 4.01 (5.96) | – |
| 4040R-37- | | -0 | 14.76 (375) | 16.18 (411) | ≈ 4.02 (5.98) | – |
| 4040R-38- | | -0 | 15.24 (387) | 16.69 (424) | ≈ 4.08 (6.07) | |
| 4040R-40- | 8840R-40- | -0 | 15.75 (400) | 17.17 (436) | ≈ 4.21 (6.27) | ≈ 6.04 (8.98) |
| 4040R-41- | | -0 | 16.22 (412) | 17.68 (449) | ≈ 4.31 (6.42) | – |
| 4040R-42- | | -0 | 16.73 (425) | 18.15 (461) | ≈ 4.42 (6.58) | – |
| 4040R-43- | | -0 | 17.20 (437) | 18.66 (474) | ≈ 4.46 (6.64) | – |
| 4040R-45- | | -0 | 17.72 (450) | 19.13 (486) | ≈ 4.51 (6.71) | – |
| 4040R-46- | 8840R-46- | -0 | 18.19 (462) | 19.65 (499) | ≈ 4.52 (6.73) | ≈ 6.34 (9.44) |
| 4040R-47- | | -0 | 18.70 (475) | 20.12 (511) | ≈ 4.61 (6.86) | – |
| 4040R-48- | | -0 | 19.17 (487) | 20.63 (524) | ≈ 4.63 (6.88) | – |
| 4040R-50- | | -0 | 19.69 (500) | 21.10 (536) | ≈ 4.70 (7.00) | – |
| 4040R-51- | | -0 | 20.16 (512) | 21.61 (549) | ≈ 4.72 (7.02) | – |
| 4040R-52- | | -0 | 20.67 (525) | 22.09 (561) | ≈ 4.74 (7.06) | – |
| 4040R-53- | | -0 | 21.14 (537) | 22.60 (574) | ≈ 4.85 (7.22) | – |
| 4040R-55- | | -0 | 21.65 (550) | 23.07 (586) | ≈ 5.17 (7.70) | – |
| 4040R-60- | | -0 | 23.62 (600) | 25.04 (636) | ≈ 5.31 (7.90) | – |

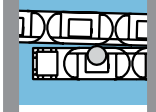
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 4040R-30-300-0

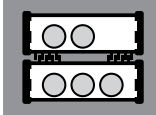
| | 200** | 250** | 300 | 350 | 400 |
|---|---|---|---|---|---|
| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| $H_2$ +10 | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ +50 | 48.43 (1230) | 53.94 (1370) | 62.99 (1600) | 72.83 (1850) | 81.50 (2070) |
| $K_2$ | 71.65 (1820) | 85.98 (2184) | 100.31 (2548) | 114.65 (2912) | 128.98 (3276) |

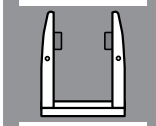
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

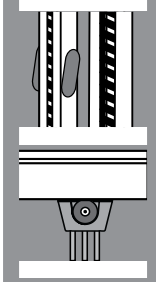



PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



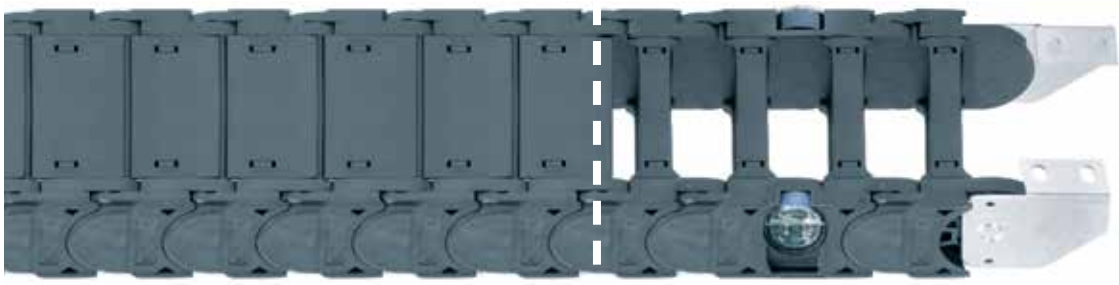




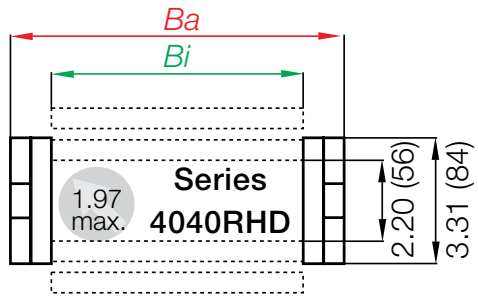


# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 4040RHD/R8840RHD

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

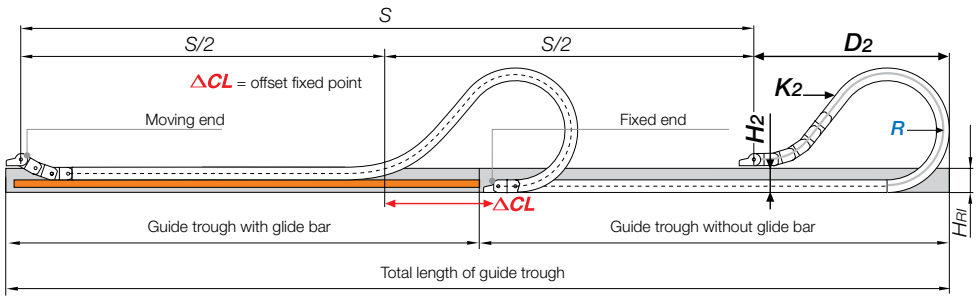


Series 4040RHD - crossbars every link, openable along both radii
Series 8840RHD - fully enclosed, hinged, snap-open removable lids




## Sliding applications

**Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 10.75 lbs/ft (16 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




| R | 7.87 (200**) | 9.84 (250**) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
|---|---|---|---|---|---|
| $H_2$ +10 | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ +50 | 45.08 (1145) | 54.72 (1390) | 63.78 (1620) | 73.62 (1870) | 82.48 (2095) |
| $K_2$ | 71.65 (1820) | 85.98 (2184) | 100.31 (2548) | 114.65 (2912) | 128.98 (3276) |
| ΔCL | 20.67 (525) | 27.95 (710) | 35.43 (900) | 42.91 (1090) | 50.20 (1275) |

**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

**Legend**
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

## Available Accessories

Optimized, cable-friendly interior separation program

Steel mounting brackets, pivoting, robust and electrically conductive

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ Chapter 1

# E4/4 Rol E-Chain® - Series 4040RHD/R8840RHD
# Installation Dimensions



Supplement part number with required radius. Example: 4040HD-30-[300] -0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | in. (mm) | in. (mm) | 4040RHD lbs/ft (kg/m) | 8840RHD lbs/ft (kg/m) |
| 4040RHD-05- | | [ ]-0 | 1.97 (50) | 4.09 (104) | ≈ 3.38 (5.03) | – |
| 4040RHD-06- | | [ ]-0 | 2.56 (65) | 4.69 (119) | ≈ 3.44 (5.12) | – |
| 4040RHD-07- | [1)]8840RHD-07- | [ ]-0 | 2.95 (75) | 5.08 (129) | ≈ 3.49 (5.19) | ≈ 3.79 (5.64) |
| 4040RHD-08- | | [ ]-0 | 3.43 (87) | 5.55 (141) | ≈ 3.54 (5.27) | – |
| 4040RHD-10- | 8840RHD-10- | [ ]-0 | 3.94 (100) | 6.06 (154) | ≈ 3.60 (5.36) | ≈ 3.98 (5.93) |
| 4040RHD-11- | | [ ]-0 | 4.41 (112) | 6.54 (166) | ≈ 3.68 (5.48) | – |
| 4040RHD-12- | 8840RHD-12- | [ ]-0 | 4.92 (125) | 7.05 (179) | ≈ 3.74 (5.56) | ≈ 4.23 (6.29) |
| 4040RHD-13- | | [ ]-0 | 5.39 (137) | 7.52 (191) | ≈ 3.82 (5.69) | – |
| 4040RHD-15- | 8840RHD-15- | [ ]-0 | 5.91 (150) | 8.03 (204) | ≈ 3.85 (5.73) | ≈ 4.48 (6.67) |
| 4040RHD-16- | | [ ]-0 | 6.38 (162) | 8.50 (216) | ≈ 3.92 (5.84) | – |
| 4040RHD-17- | 8840RHD-17- | [ ]-0 | 6.89 (175) | 9.02 (229) | ≈ 4.01 (5.97) | ≈ 4.69 (6.98) |
| 4040RHD-18- | | [ ]-0 | 7.36 (187) | 9.49 (241) | ≈ 4.09 (6.09) | – |
| 4040RHD-20- | 8840RHD-20- | [ ]-0 | 7.87 (200) | 10.00 (254) | ≈ 4.13 (6.14) | ≈ 4.90 (7.29) |
| 4040RHD-21- | | [ ]-0 | 8.35 (212) | 10.47 (266) | ≈ 4.17 (6.21) | – |
| 4040RHD-22- | | [ ]-0 | 8.86 (225) | 10.98 (279) | ≈ 4.22 (6.28) | – |
| 4040RHD-23- | | [ ]-0 | 9.33 (237) | 11.46 (291) | ≈ 4.29 (6.39) | – |
| 4040RHD-25- | 8840RHD-25- | [ ]-0 | 9.84 (250) | 11.97 (304) | ≈ 4.37 (6.50) | ≈ 5.39 (8.02) |
| 4040RHD-26- | | [ ]-0 | 10.31 (262) | 12.44 (316) | ≈ 4.43 (6.59) | – |
| 4040RHD-27- | 8840RHD-27 | [ ]-0 | 10.83 (275) | 12.95 (329) | ≈ 4.50 (6.70) | ≈ 5.63 (8.38) |
| 4040RHD-28- | | [ ]-0 | 11.30 (287) | 13.43 (341) | ≈ 4.54 (6.75) | – |
| 4040RHD-30- | 8840RHD-30- | [ ]-0 | 11.81 (300) | 13.94 (354) | ≈ 4.64 (6.91) | ≈ 5.83 (8.68) |
| 4040RHD-31- | | [ ]-0 | 12.28 (312) | 14.41 (366) | ≈ 4.66 (6.94) | – |
| 4040RHD-32- | | [ ]-0 | 12.79 (325) | 14.92 (379) | ≈ 4.74 (7.05) | – |
| 4040RHD-33- | | [ ]-0 | 13.27 (337) | 15.39 (391) | ≈ 4.82 (7.17) | – |
| 4040RHD-35- | 8840RHD-35- | [ ]-0 | 13.78 (350) | 15.91 (404) | ≈ 4.95 (7.37) | ≈ 6.30 (9.38) |
| 4040RHD-36- | | [ ]-0 | 14.25 (362) | 16.38 (416) | ≈ 4.96 (7.38) | – |
| 4040RHD-37- | | [ ]-0 | 14.76 (375) | 16.89 (429) | ≈ 4.96 (7.38) | – |
| 4040RHD-38- | | [ ]-0 | 15.24 (387) | 17.36 (441) | ≈ 5.03 (7.49) | – |
| 4040RHD-40- | 8840RHD-40- | [ ]-0 | 15.75 (400) | 17.87 (454) | ≈ 5.21 (7.76) | ≈ 6.98 (10.38) |
| 4040RHD-41- | | [ ]-0 | 16.22 (412) | 18.35 (466) | ≈ 5.16 (7.68) | – |
| 4040RHD-42- | | [ ]-0 | 16.73 (425) | 18.86 (479) | ≈ 5.36 (7.98) | – |
| 4040RHD-43- | | [ ]-0 | 17.20 (437) | 19.33 (491) | ≈ 5.25 (7.82) | – |
| 4040RHD-45- | | [ ]-0 | 17.72 (450) | 19.84 (504) | ≈ 5.48 (8.15) | – |
| 4040RHD-46- | 8840RHD-46- | [ ]-0 | 18.19 (462) | 20.31 (516) | ≈ 5.44 (8.10) | ≈ 7.29 (10.85) |
| 4040RHD-47- | | [ ]-0 | 18.70 (475) | 20.83 (529) | ≈ 5.47 (8.14) | – |
| 4040RHD-48- | | [ ]-0 | 19.17 (487) | 21.30 (541) | ≈ 5.64 (8.39) | – |
| 4040RHD-50- | | [ ]-0 | 19.69 (500) | 21.81 (554) | ≈ 5.70 (8.48) | – |
| 4040RHD-51- | | [ ]-0 | 20.16 (512) | 22.28 (566) | ≈ 5.64 (8.40) | – |
| 4040RHD-52- | | [ ]-0 | 20.67 (525) | 22.80 (579) | ≈ 5.76 (8.57) | – |
| 4040RHD-53- | | [ ]-0 | 21.14 (537) | 23.27 (591) | ≈ 5.82 (8.66) | – |
| 4040RHD-55- | | [ ]-0 | 21.65 (550) | 23.78 (604) | ≈ 6.10 (9.08) | – |
| 4040RHD-60- | | [ ]-0 | 23.62 (600) | 25.75 (654) | ≈ 6.26 (9.31) | – |

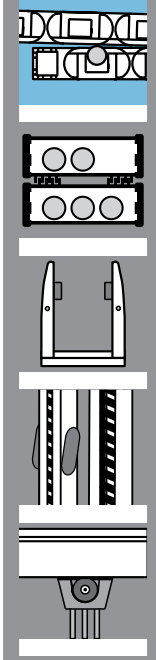
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 4040RHD-30-[300]-0

| | 200** | 250** | 300 | 350 | 400 |
|---|---|---|---|---|---|
| R | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) |
| $H_2$ | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) | 7.09 (180) |
| $D_2$ | 45.08 (1145) | 54.72 (1390) | 63.78 (1620) | 73.62 (1870) | 82.48 (2095) |
| $K_2$ | 71.65 (1820) | 85.98 (2184) | 100.31 (2548) | 114.65 (2912) | 128.98 (3276) |

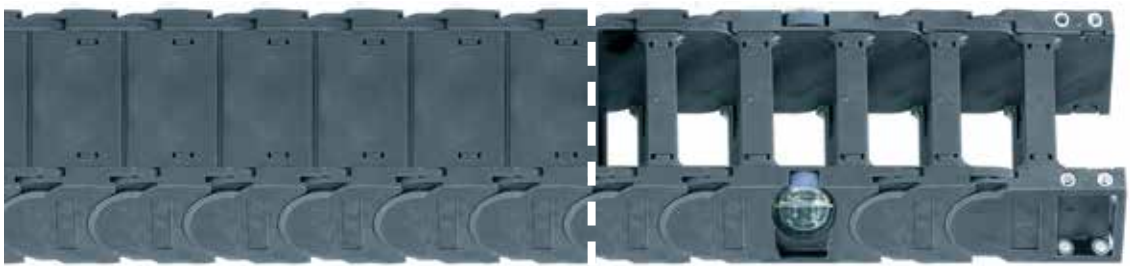
** This radius is not available for the R8840HD Series *Removable lid only, no hinged option



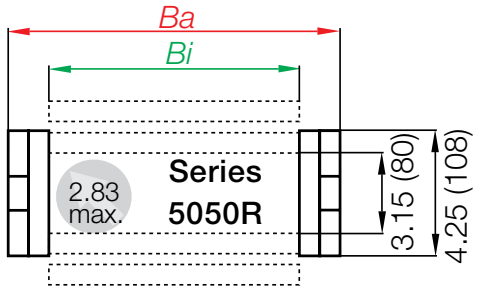
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 5050R/9850R

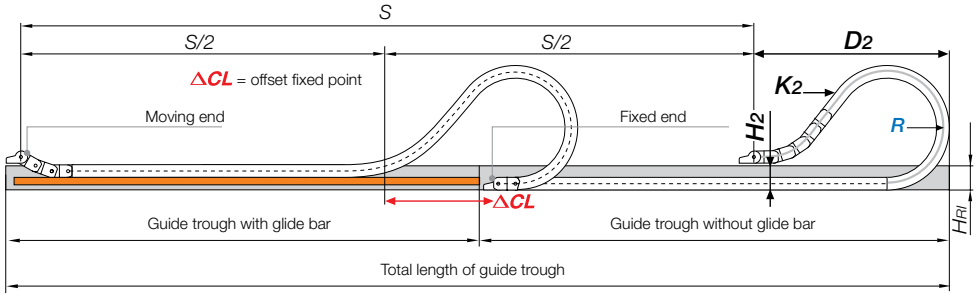


Series 5050R - crossbars every link, openable along both radii
Series 9850R - fully enclosed, hinged, snap-open removable lids




## Sliding applications

**Long travel lengths up to 1,969 ft. (600 m), Fill weights up to 16.80 lbs/ft (25 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

| R | 9.84 (250**) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|
| $H_2$ +10 | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) |
| $D_2$ +50 | 49.21 (1250) | 61.02 (1550) | 67.72 (1720) | 78.35 (1990) | 96.85 (2460) |
| $K_2$ | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 125.39 (3185) | 154.06 (3913) |
| ΔCL | 23.62 (600) | 31.50 (800) | 38.19 (970) | 45.67 (1160) | 60.24 (1530) |

**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting bracket with all-sides attachment

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 1,969 ft. (600 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E4/4 Rol E-Chain® - Series 5050R/9850R
# Installation Dimensions



Supplement part number with required radius. Example: 5050R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

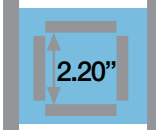
| Part Number | | | | Weight | |
|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | *Bi* in. (mm) | *Ba* in. (mm) | 5050R lbs/ft (kg/m) | 9850R lbs/ft (kg/m) |
| 5050R-05- | | -0 | 1.97 (50) | 3.94 (100) | ≈ 3.78 (5.62) | – |
| 5050R-06- | | -0 | 2.56 (65) | 4.53 (115) | ≈ 3.82 (5.68) | – |
| 5050R-07- | [1]9850R-07- | -0 | 2.95 (75) | 4.92 (125) | ≈ 3.83 (5.70) | ≈ 4.19 (6.24) |
| 5050R-08- | | -0 | 3.43 (87) | 5.39 (137) | ≈ 3.87 (5.76) | – |
| 5050R-10- | 9850R-10- | -0 | 3.94 (100) | 5.91 (150) | ≈ 3.89 (5.79) | ≈ 4.38 (6.52) |
| 5050R-11- | | -0 | 4.41 (112) | 6.42 (163) | ≈ 3.93 (5.85) | – |
| 5050R-12- | 9850R-12- | -0 | 4.92 (125) | 6.89 (175) | ≈ 3.96 (5.89) | ≈ 4.63 (6.89) |
| 5050R-13- | | -0 | 5.39 (137) | 7.40 (188) | ≈ 4.00 (5.95) | – |
| 5050R-15- | 9850R-15- | -0 | 5.91 (150) | 7.87 (200) | ≈ 4.02 (5.98) | ≈ 4.92 (7.32) |
| 5050R-16- | | -0 | 6.38 (162) | 8.39 (213) | ≈ 4.06 (6.04) | – |
| 5050R-17- | 9850R-17 | -0 | 6.89 (175) | 8.86 (225) | ≈ 4.09 (6.09) | ≈ 5.09 (7.58) |
| 5050R-18- | | -0 | 7.36 (187) | 9.37 (238) | ≈ 4.13 (6.15) | – |
| 5050R-20- | 9850R-20- | -0 | 7.87 (200) | 9.84 (250) | ≈ 4.14 (6.16) | ≈ 5.30 (7.89) |
| 5050R-21- | | -0 | 8.35 (212) | 10.35 (263) | ≈ 4.18 (6.22) | – |
| 5050R-22- | | -0 | 8.86 (225) | 10.83 (275) | ≈ 4.20 (6.25) | – |
| 5050R-23- | | -0 | 9.33 (237) | 11.34 (288) | ≈ 4.24 (6.31) | – |
| 5050R-25- | 9850R-25- | -0 | 9.84 (250) | 11.81 (300) | ≈ 4.27 (6.36) | ≈ 5.79 (8.61) |
| 5050R-26- | | -0 | 10.31 (262) | 12.32 (313) | ≈ 4.30 (6.40) | – |
| 5050R-27- | 9850R-27 | -0 | 10.83 (275) | 12.80 (325) | ≈ 4.34 (6.46) | ≈ 5.93 (8.82) |
| 5050R-28- | | -0 | 11.30 (287) | 13.31 (338) | ≈ 4.35 (6.47) | – |
| 5050R-30- | 9850R-30- | -0 | 11.81 (300) | 13.78 (350) | ≈ 4.42 (6.58) | ≈ 6.23 (9.27) |
| 5050R-31- | | -0 | 12.28 (312) | 14.29 (363) | ≈ 443 (6.60) | – |
| 5050R-32- | | -0 | 12.79 (325) | 14.76 (375) | ≈ 4.45 (6.62) | – |
| 5050R-33- | | -0 | 13.27 (337) | 15.28 (388) | ≈ 4.51 (6.71) | – |
| 5050R-35- | 9850R-35- | -0 | 13.78 (350) | 15.75 (400) | ≈ 4.56 (6.79) | ≈ 6.73 (10.02) |
| 5050R-36- | | -0 | 14.25 (362) | 16.26 (413) | ≈ 4.57 (6.80) | – |
| 5050R-37- | | -0 | 14.76 (375) | 16.73 (425) | ≈ 4.57 (6.80) | – |
| 5050R-38- | | -0 | 15.24 (387) | 17.24 (438) | ≈ 4.60 (6.84) | – |
| 5050R-40- | 9850R-40- | -0 | 15.75 (400) | 17.72 (450) | ≈ 4.66 (6.94) | ≈ 7.38 (10.98) |
| 5050R-41- | | -0 | 16.22 (412) | 18.23 (463) | ≈ 4.72 (7.02) | – |
| 5050R-42- | | -0 | 16.73 (425) | 18.70 (475) | ≈ 4.77 (7.10) | – |
| 5050R-43- | | -0 | 17.20 (437) | 19.21 (488) | ≈ 4.79 (7.13) | – |
| 5050R-45- | | -0 | 17.72 (450) | 19.69 (500) | ≈ 4.81 (7.16) | – |
| 5050R-46- | 9850R-46- | -0 | 18.19 (462) | 20.20 (513) | ≈ 4.82 (7.17) | ≈ 7.69 (11.44) |
| 5050R-47- | | -0 | 18.70 (475) | 20.67 (525) | ≈ 4.87 (7.24) | – |
| 5050R-48- | | -0 | 19.17 (487) | 21.99 (538) | ≈ 4.88 (7.26) | – |
| 5050R-50- | | -0 | 19.69 (500) | 21.65 (550) | ≈ 4.91 (7.30) | – |
| 5050R-51- | | -0 | 20.16 (512) | 22.16 (563) | ≈ 4.92 (7.32) | – |
| 5050R-52- | | -0 | 20.67 (525) | 22.64 (575) | ≈ 4.93 (7.34) | – |
| 5050R-53- | | -0 | 21.14 (537) | 23.15 (588) | ≈ 4.98 (7.41) | – |
| 5050R-55- | | -0 | 21.65 (550) | 23.62 (600) | ≈ 5.15 (7.66) | – |
| 5050R-60- | | -0 | 23.62 (600) | 25.59 (650) | ≈ 5.21 (7.76) | – |

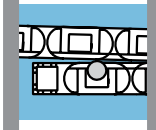
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 5050R-30-300-0

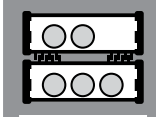
| | 250** | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|
| R | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
| $H_2$ +10 | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) |
| $D_2$ +50 | 49.21 (1250) | 61.02 (1550) | 67.72 (1720) | 78.35 (1990) | 96.85 (2460) |
| $K_2$ | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 125.39 (3185) | 154.06 (3913) |

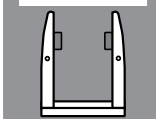
** This radius not available for E-Tubes
[1] Removable lid only, no hinged option

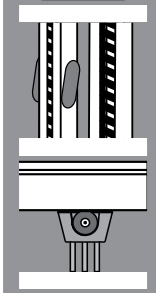
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



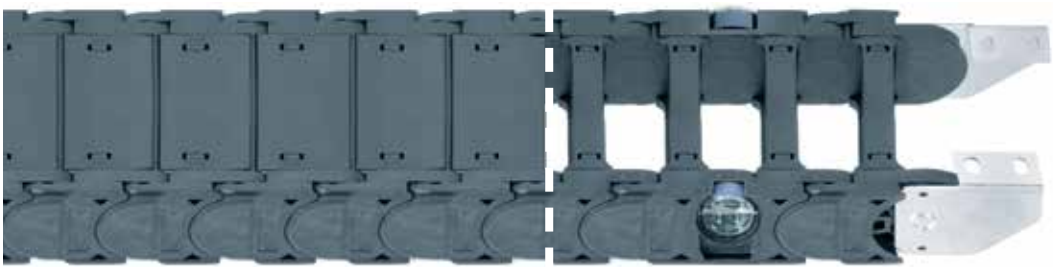





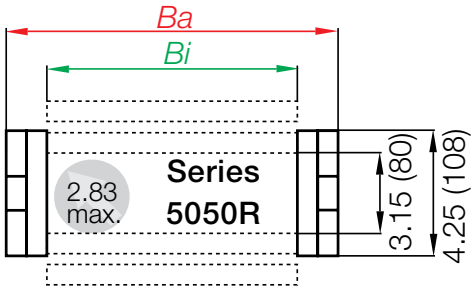




# Special solutions for long travel
# E4/4 Rol E-Chain® - Series 5050RHD/9850RHD

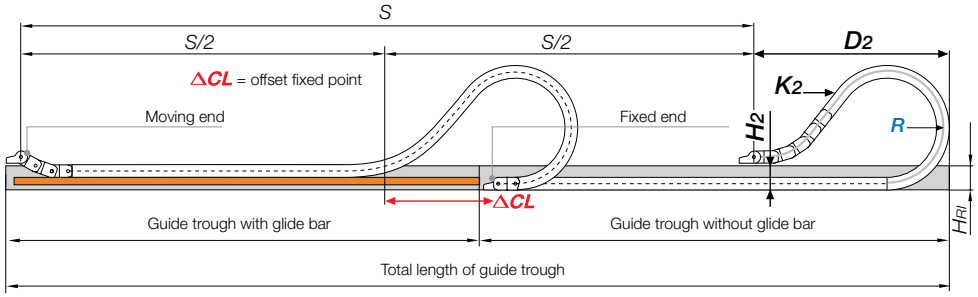


Series 5050RHD - crossbars every link, openable along both radii
Series 9850RHD - fully enclosed, hinged, snap-open removable lids




## Sliding applications

**Long travel lengths up to 2,625 ft. (800 m), Fill weights up to 20.16 lbs/ft (30 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers. Please contact igus® for assistance with your application.**




**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding
$K_2$ = *Add-on

| R | 9.84 (250**) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
|---|---|---|---|---|---|
| $H_2$ +10 | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) |
| $D_2$ +50 | 50.39 (1280) | 61.81 (1570) | 68.90 (1750) | 79.13 (2010) | 97.64 (2480) |
| $K_2$ | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 125.39 (3185) | 154.06 (3913) |
| ΔCL | 23.62 (600) | 31.50 (800) | 38.19 (970) | 45.67 (1160) | 60.24 (1530) |

**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S/2 + K$

## Available Accessories

Optimized, cable-friendly interior separation program

Steel mounting brackets, pivoting, robust and electrically conductive

Extension links - for extremely wide E-Chains® up to 9.84 ft. (3.0 m)

Aluminum SuperTrough, Basic Version

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 2,625 ft. (800 m) |
| Speed max. rolling / acceleration max. rolling | max. 32.8 ft/s (10 m/s) / max. 164 ft/s² (50 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E4/4 Rol E-Chain® - Series 5050RHD/9850RHD
# Installation Dimensions



Supplement part number with required radius. Example: 4040R-30-300-0
Pitch: 3.58 in. (91mm) per link links/ft (m) = 3.35 (11)

| Part Number | | | | Bi | Ba | Weight | |
|---|---|---|---|---|---|---|---|
| Crossbars Every Link | Tube Version | | | in. (mm) | in. (mm) | 5050RHD lbs/ft (kg/m) | 9850RHD lbs/ft (kg/m) |
| 5050RHD-05- | | | -0 | 1.97 (50) | 4.33 (110) | ≈ 4.47 (6.65) | – |
| 5050RHD-06- | | | -0 | 2.56 (65) | 4.92 (125) | ≈ 4.53 (6.74) | – |
| 5050RHD-07- | 9850RHD-07- | | -0 | 2.95 (75) | 5.31 (135) | ≈ 4.58 (6.81) | ≈ 4.87 (7.25) |
| 5050RHD-08- | | | -0 | 3.43 (87) | 5.79 (147) | ≈ 4.63 (6.89) | – |
| 5050RHD-10- | 9850RHD-10- | | -0 | 3.94 (100) | 6.30 (160) | ≈ 4.70 (6.99) | ≈ 5.07 (7.55) |
| 5050RHD-11- | | | -0 | 4.41 (112) | 6.77 (172) | ≈ 4.77 (7.10) | – |
| 5050RHD-12- | 9850RHD-12- | | -0 | 4.92 (125) | 7.28 (185) | ≈ 4.82 (7.18) | ≈ 5.32 (7.91) |
| 5050RHD-13- | | | -0 | 5.39 (137) | 7.76 (197) | ≈ 4.92 (7.32) | – |
| 5050RHD-15- | 9850RHD-15- | | -0 | 5.91 (150) | 8.27 (210) | ≈ 4.94 (7.35) | ≈ 5.57 (8.29) |
| 5050RHD-16- | | | -0 | 6.38 (162) | 8.74 (222) | ≈ 5.02 (7.47) | – |
| 5050RHD-17- | 9850RHD-17 | | -0 | 6.89 (175) | 9.25 (235) | ≈ 5.11 (7.60) | ≈ 5.78 (8.60) |
| 5050RHD-18- | | | -0 | 7.36 (187) | 9.72 (247) | ≈ 5.18 (7.71) | – |
| 5050RHD-20- | 9850RHD-20- | | -0 | 7.87 (200) | 10.24 (260) | ≈ 5.22 (7.77) | ≈ 5.99 (8.91) |
| 5050RHD-21- | | | -0 | 8.35 (212) | 10.71 (272) | ≈ 5.27 (7.84) | – |
| 5050RHD-22- | | | -0 | 8.86 (225) | 11.22 (285) | ≈ 5.32 (7.91) | – |
| 5050RHD-23- | | | -0 | 9.33 (237) | 11.69 (297) | ≈ 5.39 (8.02) | – |
| 5050RHD-25- | 9850RHD-25- | | -0 | 9.84 (250) | 12.20 (310) | ≈ 5.46 (8.13) | ≈ 6.48 (9.64) |
| 5050RHD-26- | | | -0 | 10.31 (262) | 12.68 (322) | ≈ 5.52 (8.22) | – |
| 5050RHD-27- | 9850RHD-27 | | -0 | 10.83 (275) | 13.19 (335) | ≈ 5.59 (8.32) | ≈ 6.72 (10.00) |
| 5050RHD-28- | | | -0 | 11.30 (287) | 13.66 (347) | ≈ 5.63 (8.38) | – |
| 5050RHD-30- | 9850RHD-30- | | -0 | 11.81 (300) | 14.17 (360) | ≈ 5.73 (8.53) | ≈ 6.92 (10.30) |
| 5050RHD-31- | | | -0 | 12.28 (312) | 14.65 (372) | ≈ 5.76 (8.57) | – |
| 5050RHD-32- | | | -0 | 12.79 (325) | 15.16 (385) | ≈ 5.83 (8.67) | – |
| 5050RHD-33- | | | -0 | 13.27 (337) | 15.63 (397) | ≈ 5.91 (8.79) | – |
| 5050RHD-35- | 9850RHD-35- | | -0 | 13.78 (350) | 16.14 (410) | ≈ 6.04 (8.99) | ≈ 7.39 (11.00) |
| 5050RHD-36- | | | -0 | 14.25 (362) | 16.61 (422) | ≈ 5.98 (8.90) | – |
| 5050RHD-37- | | | -0 | 14.76 (375) | 17.12 (435) | ≈ 6.04 (9.00) | – |
| 5050RHD-38- | | | -0 | 15.24 (387) | 17.60 (447) | ≈ 6.12 (9.11) | – |
| 5050RHD-40- | 9850RHD-40- | | -0 | 15.75 (400) | 18.11 (460) | ≈ 6.30 (9.38) | ≈ 8.06 (12.00) |
| 5050RHD-41- | | | -0 | 16.22 (412) | 18.58 (472) | ≈ 6.26 (9.31) | – |
| 5050RHD-42- | | | -0 | 16.73 (425) | 19.09 (485) | ≈ 6.45 (9.60) | – |
| 5050RHD-43- | | | -0 | 17.20 (437) | 19.57 (497) | ≈ 6.34 (9.44) | – |
| 5050RHD-45- | | | -0 | 17.72 (450) | 20.08 (510) | ≈ 6.42 (9.55) | – |
| 5050RHD-46- | 9850RHD-46- | | -0 | 18.19 (462) | 20.55 (522) | ≈ 6.53 (9.72) | ≈ 8.38 (12.47) |
| 5050RHD-47- | | | -0 | 18.70 (475) | 21.06 (535) | ≈ 6.56 (9.76) | – |
| 5050RHD-48- | | | -0 | 19.17 (487) | 21.54 (547) | ≈ 6.73 (10.01) | – |
| 5050RHD-50- | | | -0 | 19.69 (500) | 22.05 (560) | ≈ 6.79 (10.11) | – |
| 5050RHD-51- | | | -0 | 20.16 (512) | 22.52 (572) | ≈ 6.73 (10.02) | – |
| 5050RHD-52- | | | -0 | 20.67 (525) | 23.03 (585) | ≈ 6.85 (10.19) | – |
| 5050RHD-53- | | | -0 | 21.14 (537) | 23.50 (597) | ≈ 6.91 (10.29) | – |
| 5050RHD-55- | | | -0 | 21.65 (550) | 24.02 (610) | ≈ 7.20 (10.71) | – |
| 5050RHD-60- | | | -0 | 23.62 (600) | 25.98 (660) | ≈ 7.35 (10.94) | – |

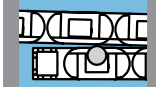
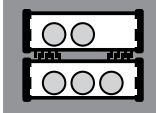
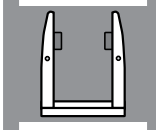
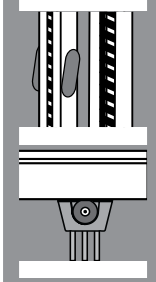
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 5050R-30-300-0

| | 250** | 300 | 350 | 400 | 500 |
|---|---|---|---|---|---|
| R | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 19.69 (500) |
| $H_2$ +10 | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) | 9.53 (242) |
| $D_2$ +50 | 49.21 (1250) | 61.02 (1550) | 67.72 (1720) | 78.35 (1990) | 96.85 (2460) |
| $K_2$ | 78.82 (2002) | 96.73 (2457) | 107.48 (2730) | 125.39 (3185) | 154.06 (3913) |

** This radius not available for E-Tubes
1) Removable lid only, no hinged option

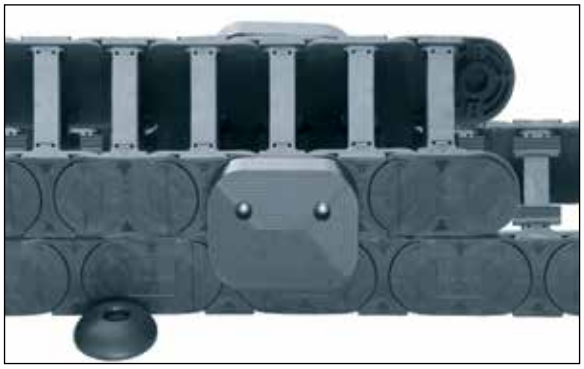


PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

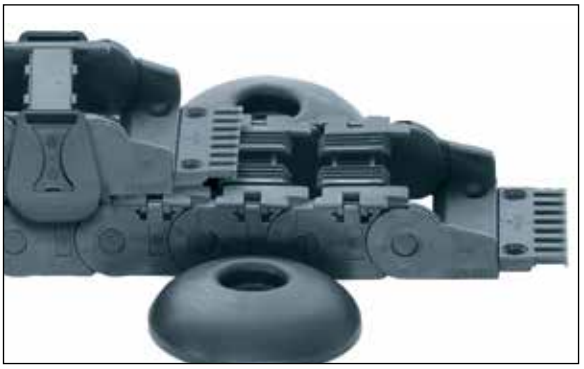





# Special solutions for long travel
# AUTO-GLIDE - Self-guiding E-Chain Systems®

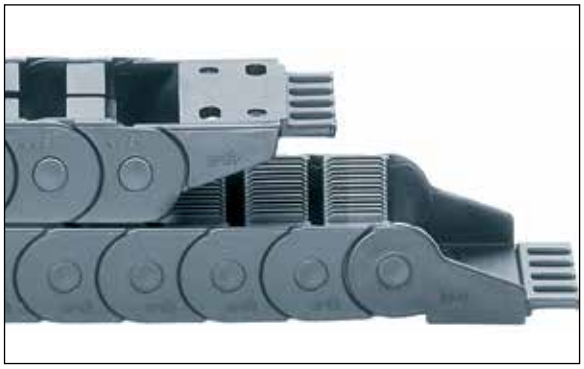
## There are 4 options for the igus® autoglide system:



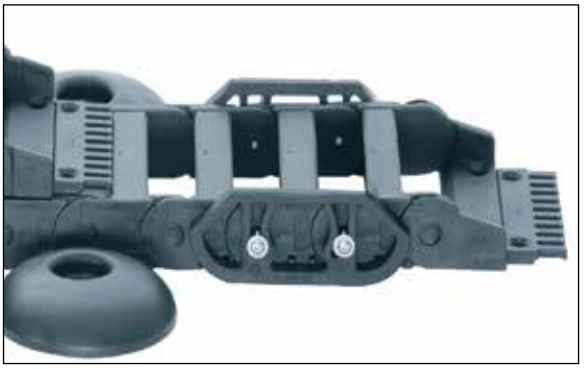
**Version 01 - For igus® E4-1 E-Chains®**
Special crossbars in the inner radius of the E-Chain® fitted with molded-on AUTO-GLIDE grooves



**Version 02 - For igus® E2/000 E-Chains®**
Special crossbars with molded-on AUTO-GLIDE grooves. To be opened along the inner radius.



**Version 03 - For igus® E-Z Chains**
Combination of the easily fillable E-Z Chain and injection-molded AUTO-GLIDE grooves in the inner radius



**Version 04 - For Series E2/000 E-Chains®**
Special plastic AUTO-GLIDE grooves side-mounted on the E-Chain® hold the E-Chain® "in the track"

# Save on long travels, self-guiding E-Chains® - AUTO-GLIDE

Long travels are always demanding for an E-Chain System®. For much of the travel, the E-Chain® must run on the lower run or on the glide bars. In addition the E-Chain System® needs guides, in order to prevent a sidewards movement. In most cases this is ensured through a guide trough. However, there are also applications where a guide trough is not desired for space reasons, whether this is due to optical considerations or spatial conditions. In order to cater for this possibility, igus® developed the AUTO-GLIDE system in 1995. AUTO-GLIDE is a self-aligning E-Chain®, which can eliminate guide troughs for up to 262 ft. (80 m) travel.

- Travels up to 262 ft. (80 m) and travel speeds up to 8.20 ft/s (2.5 m/s)
- Cost-effective solution, guide troughs not required
- Very quick installation times for long travels
- Small installation width, quiet operation

**Typical industries and applications**

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

# Special solutions for long travel
# AUTO-GLIDE - Self-guiding E-Chain Systems®
# Selection Table - Technical Data

**Version 01 AUTO-GLIDE -**
**Self-guiding E-Chains® for system E4-1**
Crossbars in the inner radius of the E-Chain®
fitted with molded-on AUTO-GLIDE grooves

| Series | Inner height *hi* in. (mm) | Inner width *Bi* in. (mm) | Outer width *Ba* in. (mm) | Outer height *ha* in. (mm) | Bending radius *R* in. (mm) | Maximum Travel ft. (m) |
|---|---|---|---|---|---|---|
| E4-32AG | 1.26 (32) | 4.41-10.31 (112-262) | 5.35-11.26 (136-286) | 2.13 (54) | 3.94-11.81 (100-300) | 196.9 (60) |
| E4-42AG | 1.65 (42) | 4.41-10.31 (112-262) | 5.47-11.38 (139-289) | 2.52 (64) | 4.92-13.78 (125-350) | 229.7 (70) |
| E4-56AG | 2.20 (56) | 5.91-9.84 (150-250) | 7.24-11.18 (184-284) | 3.31 (84) | 5.91-19.69 (150-500) | 262.5 (80) |

**Version 02 AUTO-GLIDE -**
**Self-guiding E-Chains® for system E2/000**
Crossbars in the inner radius of the E-Chain®
fitted with molded-on AUTO-GLIDE grooves

| | | | | | | |
|---|---|---|---|---|---|---|
| 2400AG | .98 (25) | 2.24-3.03 (57-77) | 2.87-3.66 (73-93) | 1.38 (35) | 2.95-9.84 (075-250) | 131.2 (40) |
| 2600AG | 1.38 (35) | 1.97-2.95 (50-75) | 2.60-3.58 (66-91) | 1.97 (50) | 2.95-9.84 (075-250) | 196.9 (60) |
| 3400AG | 1.77 (45) | 2.95-3.94 (75-100) | 3.74-4.72 (95-120) | 2.52 (64) | 3.94-11.81 (100-300) | 229.7 (70) |

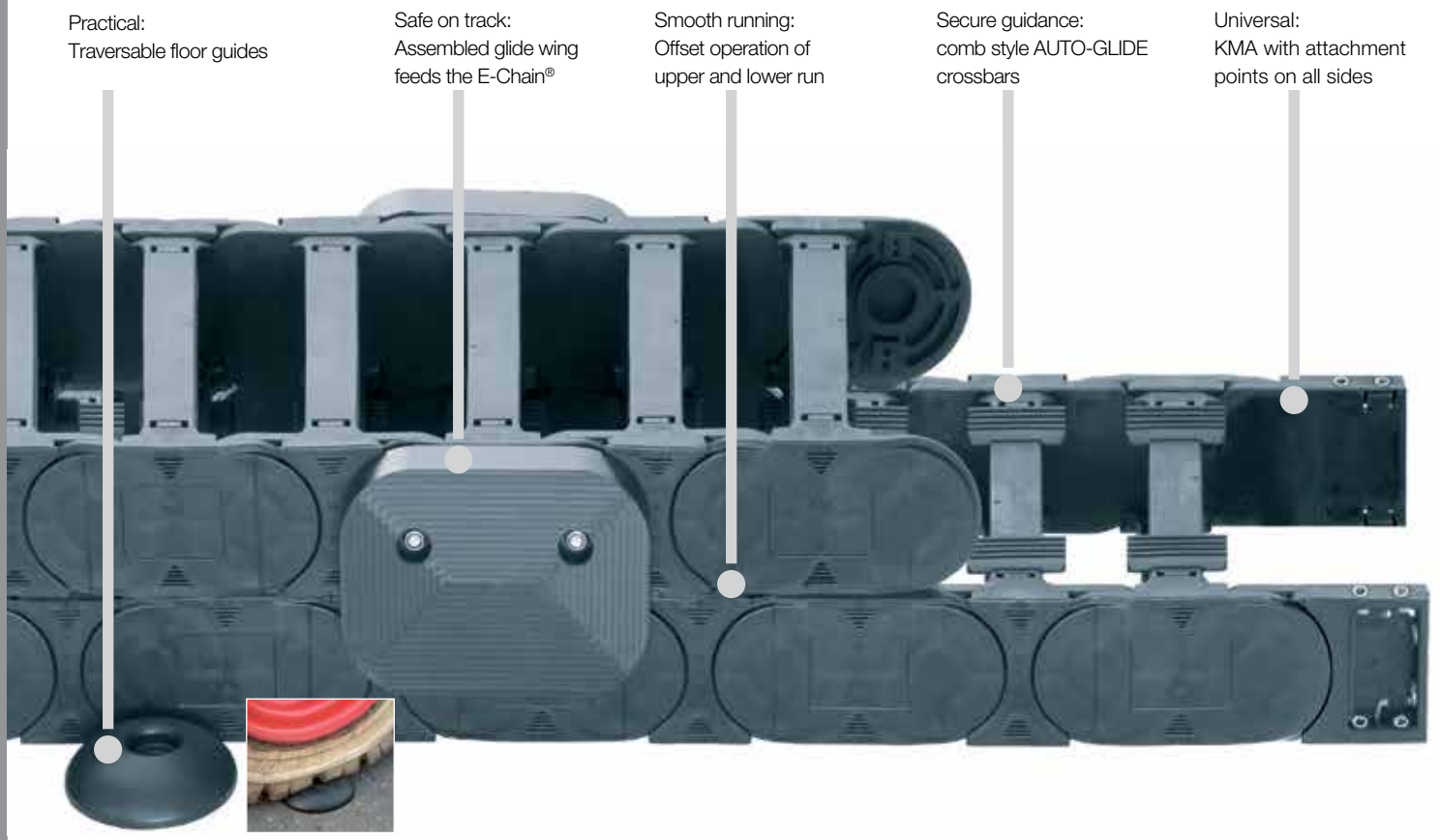
**Version 03 AUTO-GLIDE -**
**Easy filling - simply press cables in**
E-Z Chain Design in the outer radius, fitted with molded-on
AUTO-GLIDE grooves in the inner radius

| | | | | | | |
|---|---|---|---|---|---|---|
| EA16 | 1.26 (32) | 1.89 (48) | 2.36 (60) | 1.54 (39) | 2.56-3.94 (065-100) | 65.6 (20) |
| EA25 | .98 (25) | 1.97 (50) | 2.36 (60) | .99 (25.2) | 2.95-3.94 (075-100) | 65.6 (20) |

**Version 04 AUTO-GLIDE -**
**Special glide elements provide a secure guidance**
on E2/000: E-Chain®, half and full E-Tubes

| | | | | | | |
|---|---|---|---|---|---|---|
| 2400/2500-AG | .98 (25) | 2.24-4.92 (57-125) | 2.87-5.55 (73-141) | 1.38 (35) | 2.17-9.84 (055-250) | 65.6 (20) |
| 2600/2700-AG | 1.38 (35) | 1.97-9.84 (50-250) | 2.60-7.64 (66-194) | 1.97(50) | 2.95-9.84 (075-250) | 98.4 (30) |

# Special solutions for long travel
# AUTO-GLIDE - Self-guiding E-Chain Systems®
# Version 01 - Overview




# Self-guiding E-Chains® for System E4-1 AUTO-GLIDE Version 01

For the larger E-Chains® of the E4-1 system - crossbars in the inner radius of the E-Chains® are provided with injection-molded glide shoes. **Glide wings and floor guides -** Simple guide elements for quick installation on the subsurface are available for the AUTO-GLIDE system version 01. The traversable eccentric floor guides are fastened every 6.56 ft.(2 m) on the subsurface. The glide wing fastened on the moving end feeds the E-Chains® and holds this securely in the track. The AUTO-GLIDE crossbars safely guide the E-Chains® and replace the guide trough.

- Save purchase and installation costs with this system
- Traversable over floor guide for travel distances over 32.8 ft.(10 m).

**Note:** Only two glide wings **AG-XXX-OF** are required for the safe feeding of the E-Chains®. The mounting of the glide wing is done on the outer link of the upper run, which is laid down first on the lower run.

**Typical industries and applications**

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

# Special solutions for long travel
# AUTO-GLIDE - Self-guiding E-Chain Systems®
# Version 01 - Technical Data - Order Examples

AUTO-GLIDE with assembled glide wing. Module, containing 3 E-Chain® links and 2 glide wings
Part No. E4-32-15-150-0-AG-OF-NC

AUTO-GLIDE self-guiding E-Chains®
Part No. E4-32-15-150-0-AG-NC

Glide wing Part No. AG-280-OF and floor guide
Part No. AG-380-BF as single parts

## Part number structure
## E4-32-15-150-0-AG-**OF**-NC

- Assembly as NC Version
- With assembled glide wing
- AUTO-GLIDE
- Standard color black
- Bending radius ***R***
- Width index
- Series / Type

## Order example | Part number structure

**Order example for complete E-Chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:**

| | | |
|---|---|---|
| **E-Chain®** 49.2 ft. (15 m) | Please indicate E-Chain® length or number of links: 49.2 ft. (15 m) or 287 links | E4-32-15-150-0-AG-NC |
| **E-Chain® + glide wing** | Module, containing 3 E-Chain® links and 2 glide wings | E4-32-15-150-0-AG-OF-NC |
| **+ Floor guides** | 8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel) | AG-380-BF |

**Order text: 49.2 ft. (15 m) E4-32-15-150-0-AG-NC + E4-32-15-150-0-AG-OF-NC + AG-380-BF + Mounting bracket + Interior separation** (optional)
**Note:** We require one glide wing per E-Chain® to the left and right at the position where the upper run first meets the lower run.

| | |
|---|---|
| Long travels | from 32.8 ft. (10 m) up to max. 262 ft. (80 m) |
| Speed max. gliding / acceleration max. gliding | max. 8.20 ft/s (2.5 m/s) / max. 8.20 ft/s² (2.5 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions for long travel
# AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
# E4-32AG

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series E4-32AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius

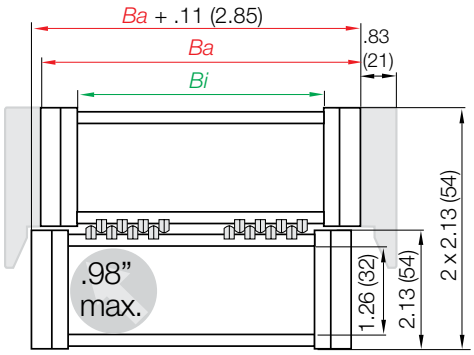
Supplement part number with required radius. Example: E4-32-15-150-0-AG-NC
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.49 (18)

| Part Number Crossbars Every Link | | | *Bi* in. (mm) | *Ba* in. (mm) | Weight lbs/ft (kg/m) | Glide Wing Single part | Floor Guide Single part |
|---|---|---|---|---|---|---|---|
| E4-32-112- | | -0-AG-NC | 4.41 (112) | 5.35 (136) | ≈ 1.42 (2.106) | AG-380-OF | AG-380-BF |
| E4-32-12- | | -0-AG-NC | 4.92 (125) | 5.83 (148) | ≈ 1.46 (2.176) | AG-380-OF | AG-380-BF |
| E4-32-15- | | -0-AG-NC | 5.91 (150) | 6.81 (173) | ≈ 1.57 (2.343) | AG-380-OF | AG-380-BF |
| E4-32-17- | | -0-AG-NC | 6.61 (168) | 7.52 (191) | ≈ 1.64 (2.444) | AG-380-OF | AG-380-BF |
| E4-32-20- | | -0-AG-NC | 7.87 (200) | 8.78 (223) | ≈ 1.79 (2.657) | AG-380-OF | AG-380-BF |
| E4-32-262- | | -0-AG-NC | 10.31 (262) | 11.26 (286) | ≈ 2.05 (3.050) | AG-380-OF | AG-380-BF |

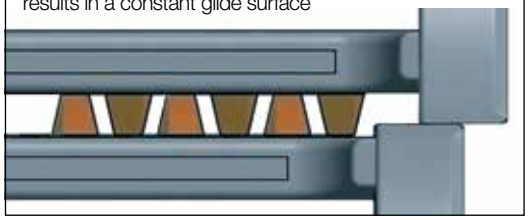
Choose from the radii below for all of the above sizes
*Radius* (mm)Example: E4-32-15-150-0-AG-NC

| | 100 | 125 | 150 | 175 | 200 | 220 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|
| *R* | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
| $H_2$ | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ | 14.57 (370) | 18.50 (470) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 35.43 (900) | 36.61 (930) | 43.31 (1100) |
| $K_3$ | 33.07 (840) | 40.71 (1064) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 81.57 (2072) | 88.19 (2240) | 105.83 (2688) |

# Special solutions for long travel
# AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
# E4-32AG - Installation Dimensions

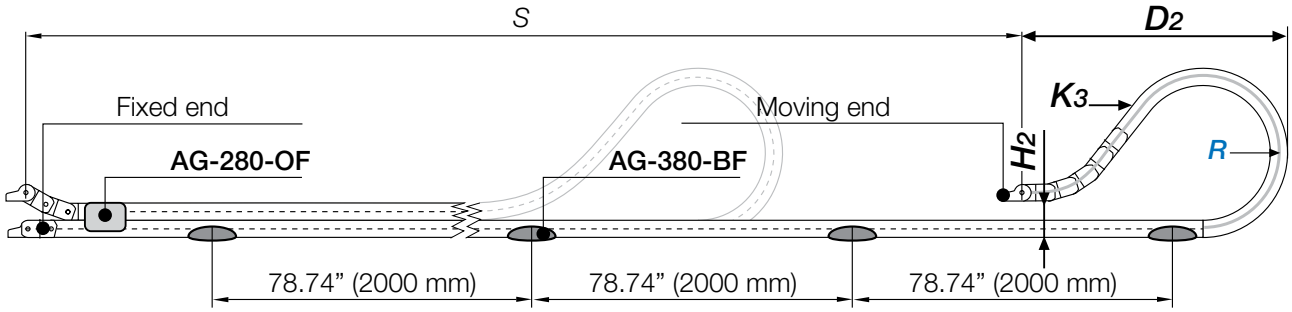



**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



## Gliding applications

**Long travel lengths up to 197 ft. (60 m), Fill weights up to 3.36 to 4.70 lbs/ft (5.0 to 7.0 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**




| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|---|---|
| H2 | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| D2 | 14.57 (370) | 18.50 (470) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 35.43 (900) | 36.61 (930) | 43.31 (1100) |
| K3 | 33.07 (840) | 40.71 (1064) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 81.57 (2072) | 88.19 (2240) | 105.83 (2688) |

**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $S + K_3$

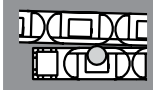
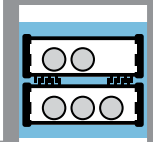
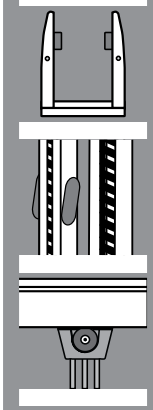
**Legend**
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
# E4-42AG

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

**Series E4-42AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius**

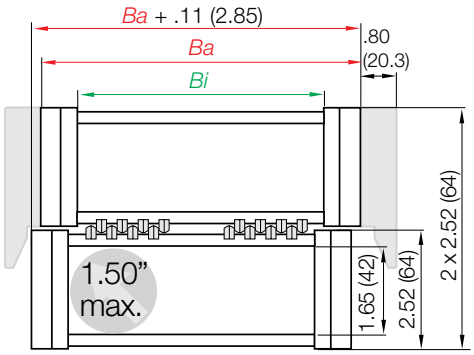
Supplement part number with required radius. Example: E4-42-15-150-0-AG-NC
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.57 (15)

| Part Number Crossbars Every Link | | Bi in. (mm) | Ba in. (mm) | Weight lbs/ft (kg/m) | Glide Wing Single part | Floor Guide Single part |
|---|---|---|---|---|---|---|
| E4-42-112- | -0-AG-NC | 4.41 (112) | 5.47 (139) | ≈ 1.59 (2.372) | AG-380-OF | AG-380-BF |
| E4-42-12- | -0-AG-NC | 4.92 (125) | 5.94 (151) | ≈ 1.63 (2.430) | AG-380-OF | AG-380-BF |
| E4-42-15- | -0-AG-NC | 5.91 (150) | 6.93 (176) | ≈ 1.73 (2.569) | AG-380-OF | AG-380-BF |
| E4-42-17- | -0-AG-NC | 6.61 (168) | 7.64 (194) | ≈ 1.78 (2.654) | AG-380-OF | AG-380-BF |
| E4-42-20- | -0-AG-NC | 7.87 (200) | 8.90 (226) | ≈ 1.90 (2.831) | AG-380-OF | AG-380-BF |
| E4-42-262- | -0-AG-NC | 10.31 (262) | 11.38 (289) | ≈ 2.12 (3.159) | AG-380-OF | AG-380-BF |

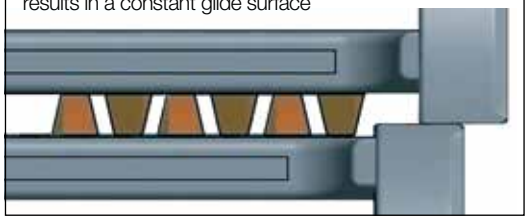
Choose from the radii below for all of the above sizes
*Radius* (mm)Example: E4-42-15-150-0-AG-NC

| | 125 | 150 | 160 | 175 | 200 | 250 | 250 | 300 |
|---|---|---|---|---|---|---|---|---|
| *R* | 4.92 (125) | 5.91 (150) | 6.30 (160) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
| $H_2$ | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ | 18.70 (475) | 22.44 (570) | 24.53 (623) | 26.38 (670) | 30.71 (780) | 40.55 (1030) | 45.28 (1150) | 59.06 (1500) |
| $K_3$ | 44.84 (1139) | 52.76 (1340) | 58.03 (1474) | 63.31 (1608) | 73.86 (1876) | 94.96 (2412) | 111.89 (2747) | 139.80 (3551) |

# Special solutions for long travel
# AUTO-GLIDE - Version 01- Self-guiding E-Chain Systems®
# E4-42AG - Installation Dimensions

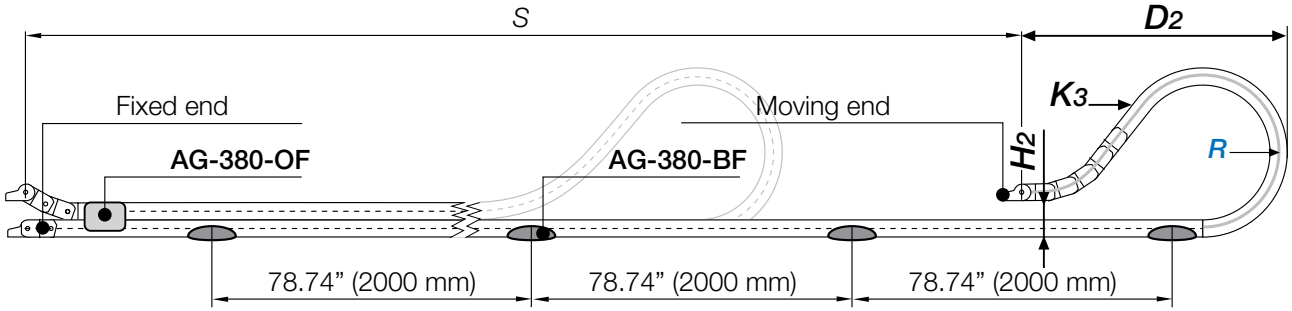



**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



## Gliding applications

**Long travel lengths up to 230 ft. (70 m), Fill weights up to 2.69 to 6.45 lbs/ft (4.0 to 9.6 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**




| R | 4.92 (125) | 5.91 (150) | 6.30 (160) | 6.89 (175) | 7.87 (200) | 9.84 (250) | 11.81 (300) | 13.78 (350) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ | 18.70 (475) | 22.44 (570) | 24.53 (623) | 26.38 (670) | 30.71 (780) | 40.55 (1030) | 45.28 (1150) | 59.06 (1500) |
| $K_3$ | 44.84 (1139) | 52.76 (1340) | 58.03 (1474) | 63.31 (1608) | 73.86 (1876) | 94.96 (2412) | 111.89 (2747) | 139.80 (3551) |

**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.57 (15)
**For center mount applications:**
**Chain length =** $S + K_3$

**Legend**

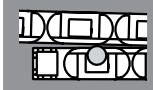
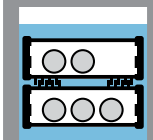
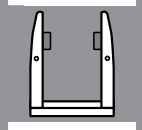
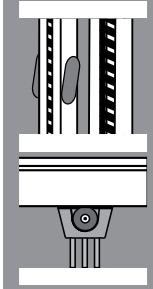
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
# E4-56AG

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

**Series E4-56AG - openable along both radii, crossbars every link - AUTO-GLIDE crossbars along the inner radius**

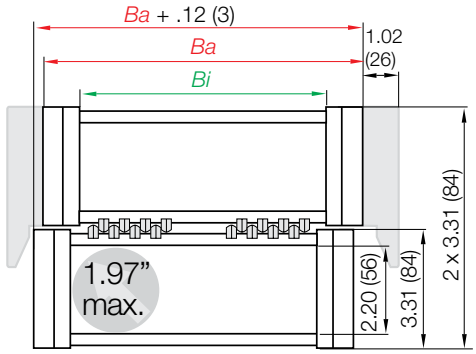
Supplement part number with required radius. Example: E4-56-15-[150]-0-AG-NC
Pitch: 3.58 in. (91 mm) per link links/ft (m) = 3.35 (11)

| Part Number<br>Crossbars<br>Every Link | | | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) | Glide Wing<br>Single part | Floor Guide<br>Single part |
|---|---|---|---|---|---|---|---|
| E4-56-15- | ☐ | -0-AG-NC | 5.91 (150) | 7.24 (184) | ≈2.76 (4.109) | AG-400-OF | AG-400-BF |
| E4-56-21- | ☐ | -0-AG-NC | 8.35 (212) | 9.72 (247) | ≈3.07 (4.567) | AG-400-OF | AG-400-BF |
| E4-56-25- | ☐ | -0-AG-NC | 9.84 (250) | 11.18 (284) | ≈3.29 (4.896) | AG-400-OF | AG-400-BF |

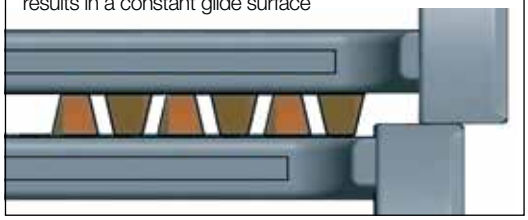
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: E4-56-15-[150]-0-AG-NC

| | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 |
|---|---|---|---|---|---|---|---|---|---|---|
| *R* | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) |
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2$ | 17.72 (450) | 22.83 (580) | 27.95 (710) | 35.43 (900) | 38.58 (980) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 66.93 (1700) | 72.83 (1850) |
| $K_3$ | 42.99 (1092) | 57.32 (1456) | 68.07 (1729) | 85.98 (2184) | 93.15 (2366) | 111.06 (2821) | 128.98 (3276) | 143.31 (3640) | 161.22 (4095) | 179.13 (4550) |

# Special solutions for long travel
# AUTO-GLIDE - Version 01 - Self-guiding E-Chain Systems®
# E4-56AG - Installation Dimensions




**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



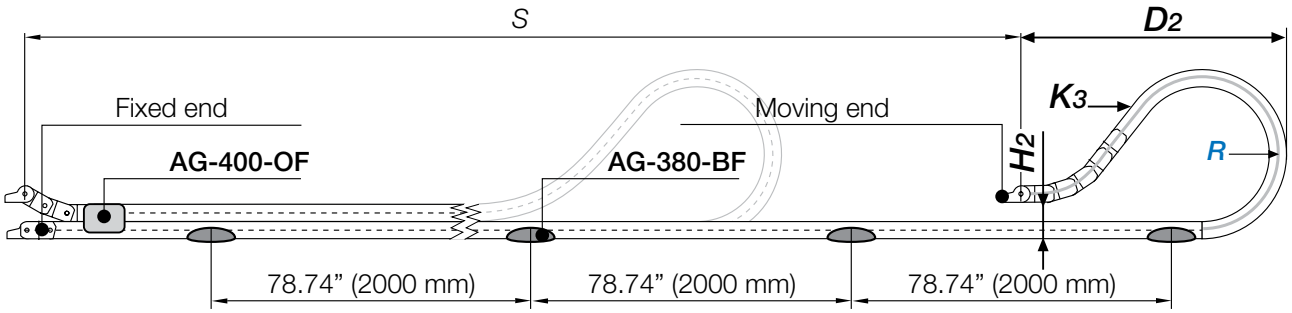
## Gliding applications

**Long travel lengths up to 262 ft. (80 m), Fill weights up to 4.30 to 8.06 lbs/ft (6.4 to 12.0 kg/m)**
**In case of travels less than 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**

**Pitch per link: =** 3.58" (91 mm)
**Links per ft (m): =** 3.35 (11)
**For center mount applications:**
**Chain length =** $S + K_3$

**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding



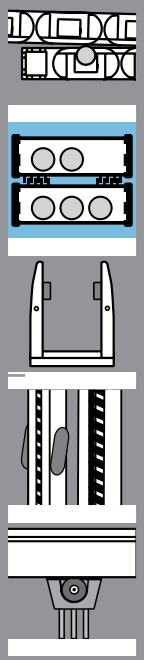

| R | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.45 (240) | 9.84 (250) | 11.81 (300) | 13.78 (350) | 15.75 (400) | 17.72 (450) | 19.69 (500) |
|---|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) | 10.47 (266) |
| $D_2$ | 17.72 (450) | 22.83 (580) | 27.95 (710) | 35.43 (900) | 38.58 (980) | 46.46 (1180) | 56.69 (1440) | 60.24 (1530) | 66.93 (1700) | 72.83 (1850) |
| $K_3$ | 42.99 (1092) | 57.32 (1456) | 68.07 (1729) | 85.98 (2184) | 93.15 (2366) | 111.06 (2821) | 128.98 (3276) | 143.31 (3640) | 161.22 (4095) | 179.13 (4550) |

## Available Accessories

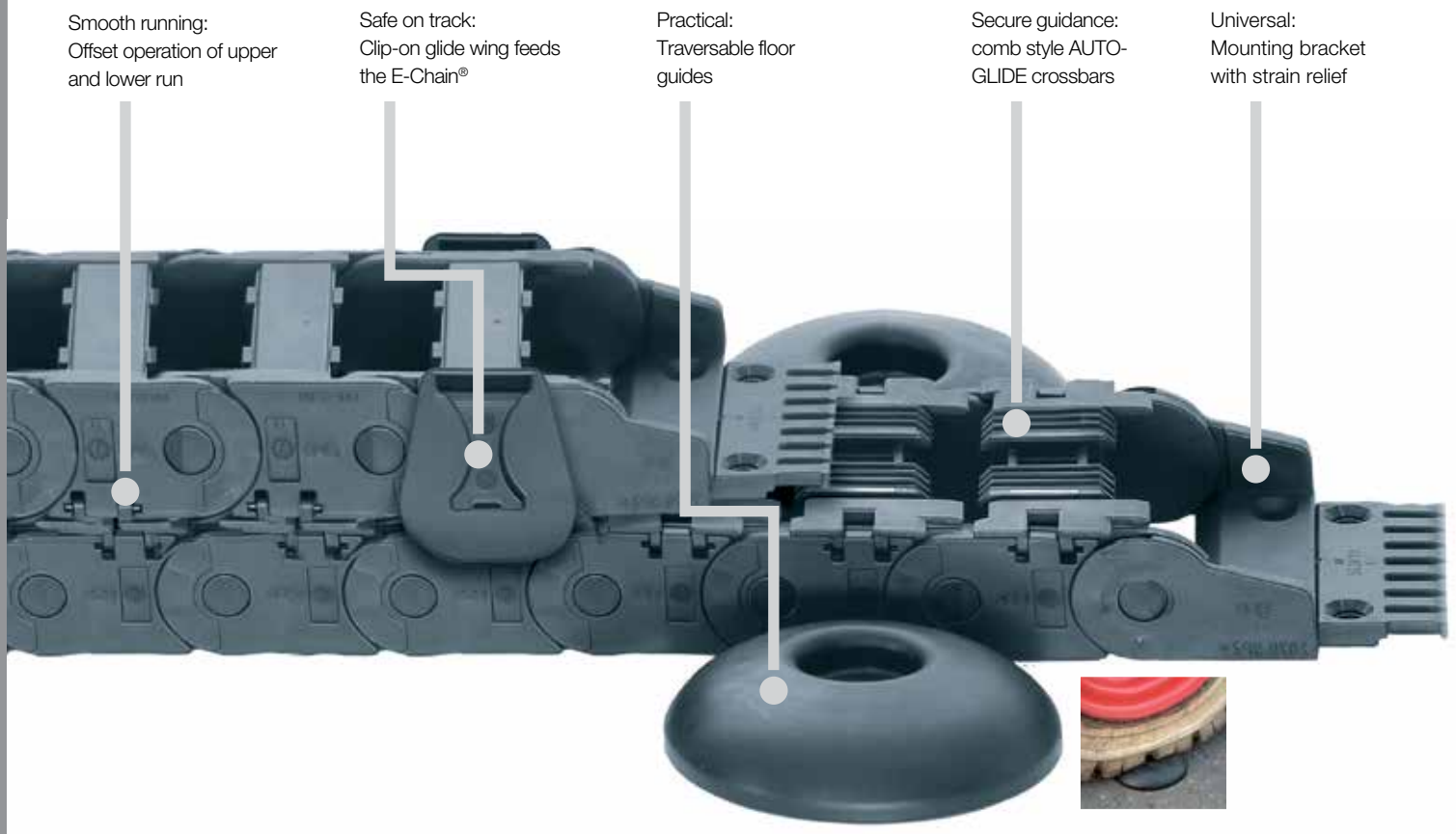
Optimized, cable-friendly interior separation program

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# Overview




# Self-guiding E-Chains® for System E2/000 AUTO-GLIDE Version 02

Interfering guide troughs for long travels can be dispensed with when using the AUTO-GLIDE system. Self-guiding E-Chains® glide safely on top of each other for up to 230 ft. (70 m). The system has now been extended to the igus® E2/000 and further improved. The AUTO-GLIDE crossbars ensure even longer life. A plug-in glide wing ensures safe E-Chain® threading over the first few feet (meters) of travel. The traversable eccentric floor guides are fastened to the subsurface every 6.56 ft. (2 m).

- Travels up to 230 ft. (70 m) without guide trough at speeds up to 6.56 ft/s (2.0 m/s)
- Very compact, no interfering trough in the travel or work area
- Fast installation times for long travels
- Snap-open in the inner radius
- Also for "half tube" fully enclosed in the outer radius
- Clip-on glide wings, safe threading in of the E-Chain®
- Drive-over floor guide

**Typical industries and applications**

- Greenhouses
- Storage and retrieval systems
- Conveyor systems
- Indoor cranes
- Handling
- And many other long travels

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# Technical Data - Order Examples

## Part number structure
## 2400-05AG-100-0

- Standard color black
- Bending radius *R*
- AUTO-GLIDE
- Width index
- Series / Type

## Order example | Part number structure

**Order example for complete E-Chain® Series E4-32AG 49.2 ft. (15 m), color black, with mounting brackets and interior separation:**

| | | |
|---|---|---|
| **E-Chain®** 49.2 ft. (15 m) | Please indicate E-Chain® length or number of links: 49.2 ft. (15 m) or 347 links | **2400-15AG-100-0** |
| **+ glide wing** | 2 glide wings are required per E-Chain® | **AG-2400-OF** |
| **+ Floor guides** | 8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel) | **AG-380-BF** |

**Order text: 49.2 ft. (15 m) 2400-05AG-100-0 + AG-2400-OF + AG-380-BF + Mounting bracket + Interior separation** (optional)
**Note:** We require one glide wing per E-Chain® to the left and right at the position where the upper run first meets the lower run.

| | |
|---|---|
| Speed max. rolling | max. 6.56 ft/s (2 m/s) |
| Acceleration max. gliding | max. 3.28 ft/s² (1 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 2400AG

Series 2400AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 2400-05AG-150-0
Pitch: 1.814 in. (46 mm) per link links/ft (m) = 6.63 (22)

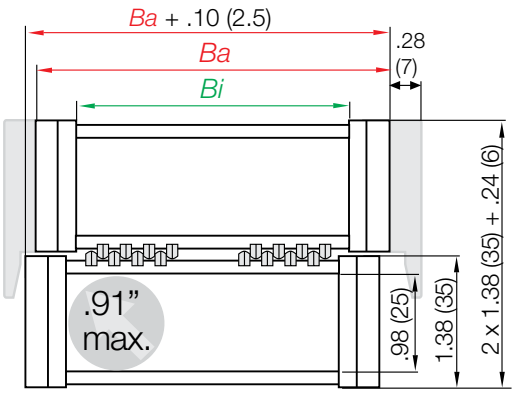
| Part Number<br>Crossbars<br>Every Link | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) | Glide Wing<br>Single part | Floor Guide<br>Single part |
|---|---|---|---|---|---|
| 2400-05AG-□-0 | 2.24 (57) | 2.87 (73) | ≈0.67 (1.00) | AG-2400-OF | AG-380-BF |
| 2400-07AG-□-0 | 3.03 (77) | 3.66 (93) | ≈0.74 (1.10) | AG-2400-OF | AG-380-BF |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2400-05AG-150-0

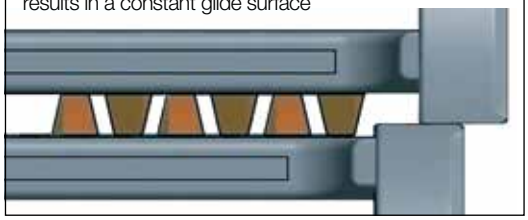
| | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|
| *R* | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) |
| $H_2$ | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$ | 6.38 (162) | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_3$ | 23.54 (598) | 36.22 (920) | 41.65 (1058) | 56.14 (1426) | 70.63 (1794) | 86.93 (2208) | 95.98 (2438) | 105.04 (2668) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 2400AG - Installation Dimensions

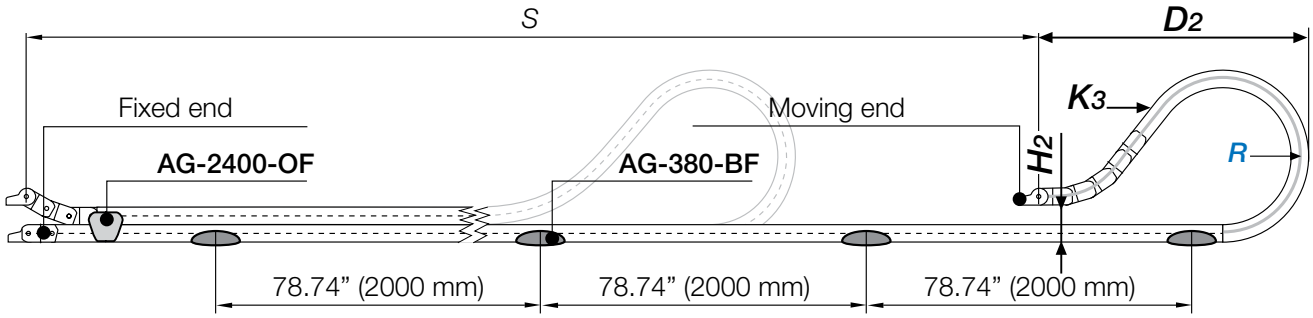



**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



## Gliding applications

**Long travel lengths up to 131 ft. (40 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)**
**In case of travels between 13 ft. (4 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**




| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.66 (220) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|
| $H_2$ | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$ | 6.38 (162) | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_3$ | 23.54 (598) | 36.22 (920) | 41.65 (1058) | 56.14 (1426) | 70.63 (1794) | 86.93 (2208) | 95.98 (2438) | 105.04 (2668) |

**Legend**
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.63 (22)
**For center mount applications:**
**Chain length =** $S + K_3$

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 2600AG

Series 2600AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 2600-05AG-150-0
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

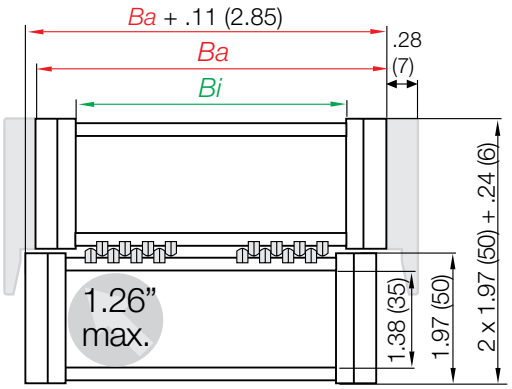
| Part Number<br>Crossbars<br>Every Link | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) | Glide Wing<br>Single part | Floor Guide<br>Single part |
|---|---|---|---|---|---|
| 2600-05AG-□-0 | 1.97 (50) | 2.60 (66) | ≈ 0.85 (1.27) | AG-2600-OF | AG-380-BF |
| 2600-07AG-□-0 | 2.95 (75) | 3.58 (91) | ≈ 0.94 (1.40) | AG-2600-OF | AG-380-BF |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2600-05AG-150-0

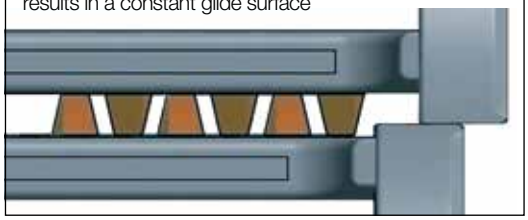
| | 075 | 100 | 125 | 150 | 175 | 200 | 250 |
|---|---|---|---|---|---|---|---|
| *R* | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
| $H_2$ | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ | 5.91 (150) | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) |
| $K_3$ | 24.25 (616) | 33.07 (840) | 44.09 (1120) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 90.39 (2296) |

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 2600AG - Installation Dimensions

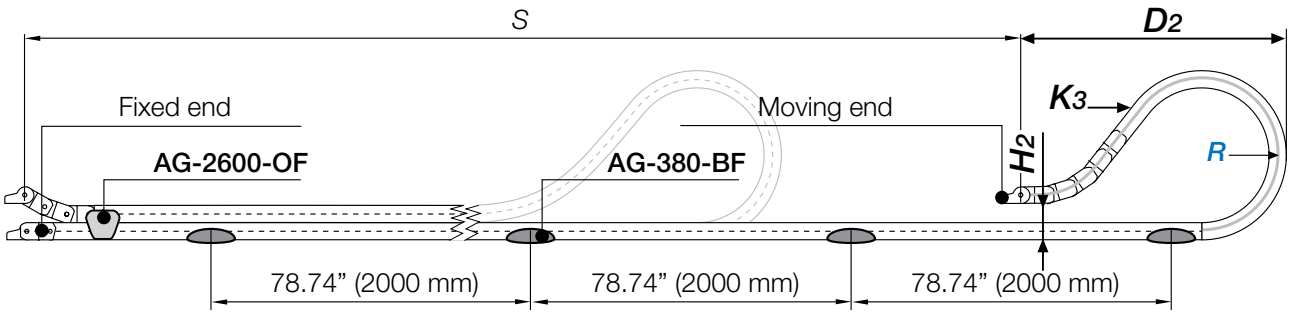



**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



## Gliding applications

**Long travel lengths up to 197 ft. (60 m), Fill weights up to 1.68 lbs/ft (2.5 kg/m)**
**In case of travels between 16.4 ft. (5 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**




| R | 2.95 (075) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_2$ | 5.91 (150) | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) |
| $K_3$ | 24.25 (616) | 33.07 (840) | 44.09 (1120) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 90.39 (2296) |

**Legend**
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.49 (18)
**For center mount applications:**
**Chain length =** $S + K_3$

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 3400AG

Series 3400AG - snap-open along the inner radius - crossbars with molded-on AUTO-GLIDE grooves

Supplement part number with required radius. Example: 3400-100AG-150-0
Pitch: 2.64 in. (67 mm) per link links/ft (m) = 4.55 (15)

| Part Number<br>Crossbars<br>Every Link | *Bi*<br>in. (mm) | *Ba*<br>in. (mm) | Weight<br>lbs/ft (kg/m) | Glide Wing<br>Single part | Floor Guide<br>Single part |
|---|---|---|---|---|---|
| 3400-05AG-□-0 | 2.95 (75) | 3.74 (95) | ≈1.27 (1.89) | AG-3400-OF | AG-380-BF |
| 3400-07AG-□-0 | 3.94 (100) | 4.72 (120) | ≈1.37 (2.04) | AG-3400-OF | AG-380-BF |

Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 3400-05AG-150-0

| | 100 | 125 | 150 | 200 | 250 | 300 |
|---|---|---|---|---|---|---|
| *R* | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
| $H_2$ | 7.87 (200) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ | 9.17 (233) | 18.70 (475) | 22.44 (570) | 30.71 (780) | 39.76 (1010) | 45.28 (1150) |
| $K_3$ | 34.29 (871) | 44.84 (1139) | 55.39 (1407) | 73.86 (1876) | 94.96 (2412) | 108.15 (2747) |

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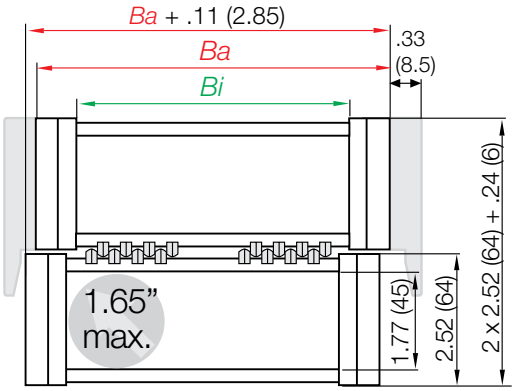
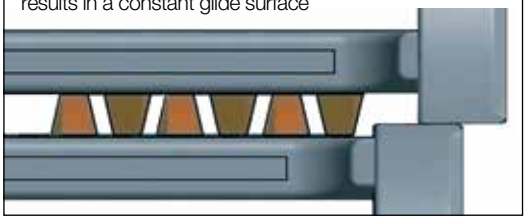
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Special solutions for long travel
# AUTO-GLIDE - Version 02 - Self-guiding E-Chain Systems®
# 3400AG - Installation Dimensions

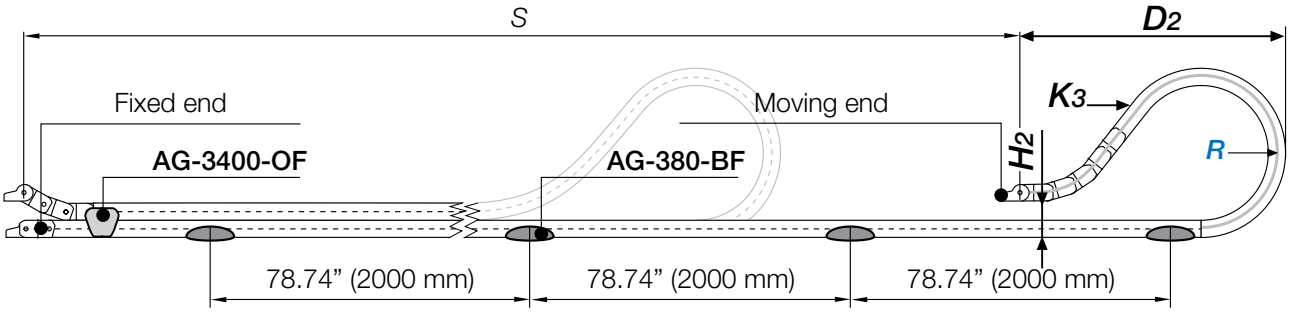



**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



## Gliding applications

**Long travel lengths up to 230 ft. (70 m), Fill weights up to 3.36 to 5.38 lbs/ft (5.0 to 8.0 kg/m)**
**In case of travels between 19.7 ft. (6 m) and 32.8 ft. (10m) we recommend an self-supporting E-Chain®.**
**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**




| R | 3.94 (100) | 4.92 (125) | 5.91 (150) | 7.87 (200) | 9.84 (250) | 11.81 (300) |
|---|---|---|---|---|---|---|
| $H_2$ | 7.87 (200) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) | 7.32 (186) |
| $D_2$ | 9.17 (233) | 18.70 (475) | 22.44 (570) | 30.71 (780) | 39.76 (1010) | 45.28 (1150) |
| $K_3$ | 34.29 (871) | 44.84 (1139) | 55.39 (1407) | 73.86 (1876) | 94.96 (2412) | 108.15 (2747) |

**Legend**
S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

**Pitch per link: =** 2.64" (67 mm)
**Links per ft (m): =** 4.55 (15)
**For center mount applications:**
**Chain length =** $S + K_3$

## Available Accessories

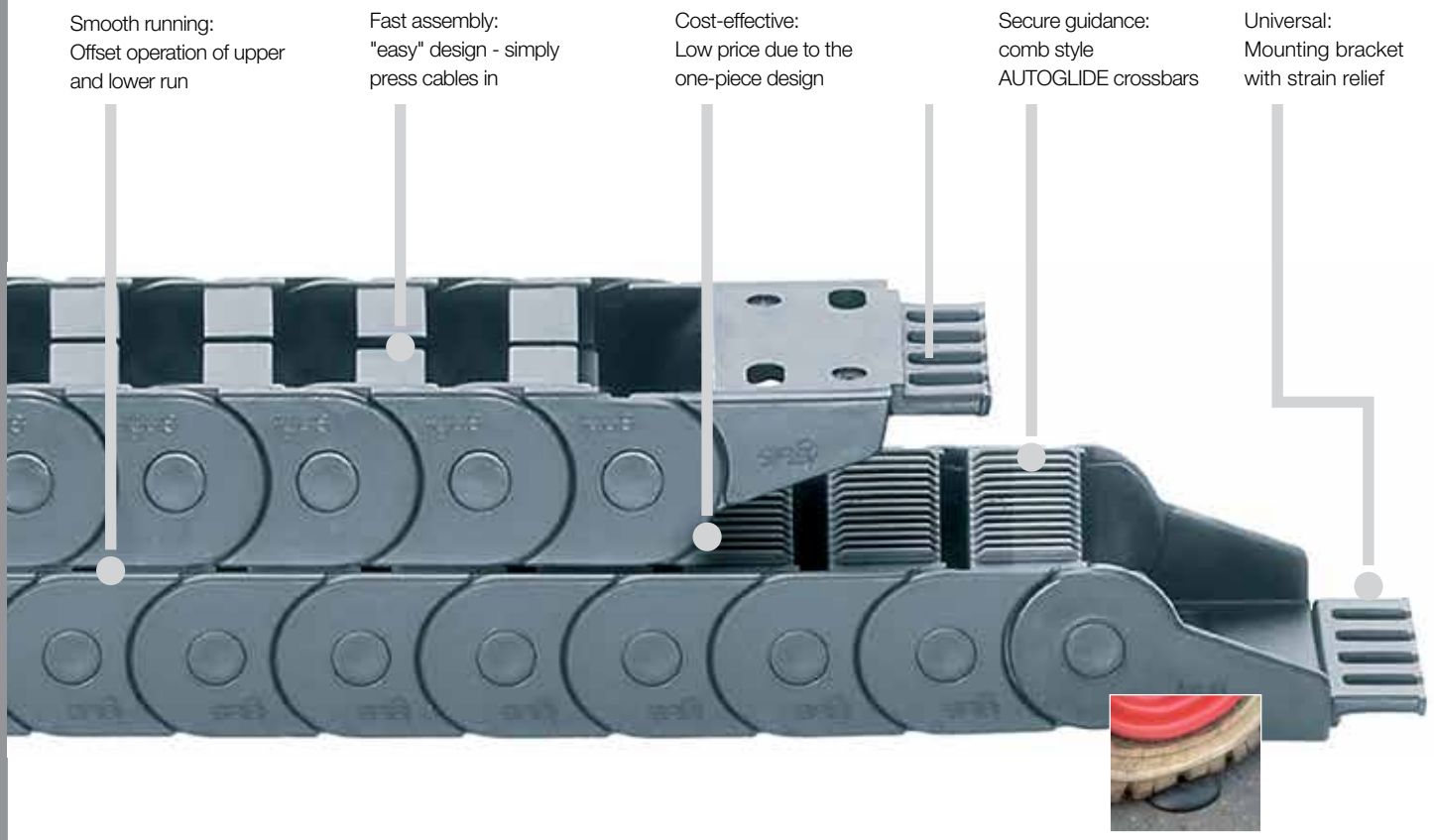
Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
# Overview




# E-Z Chain along the outer radius, injection molded AUTO-GLIDE crossbars along the inner radius - Version 03

Version 03 is the quickly filled and cost-effective E-Z-Chain® with injection-molded AUTO-GLIDE crossbars in the inner radius. The crossbars are molded directly on the E-Chain® link and are available in two sizes. The reduced installation time is one of the main features of the E-Chains®. The elastic and rugged material igumid NB offers yet more reasons for application: Optimum elasticity, UL94-V2 classification and excellent suitability for cleanrooms. Their one-piece design makes E-Z Chain® attractive especially with regard to price.

- Doubly cost-effective. Elimination of guide troughs and economical, one-piece E-Chain®
- Very quick assembly time - "easy"-design even on long travels
- "Easy"-design: Easy to fill - cables and hoses can be inserted without opening
- Single part design
- Small installation width, quiet operation
- UL94-V2 classifications

**Typical industries and applications**

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

# Special solutions for long travel
# AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
# Technical Data - Order Examples

## Part number structure
EA25-050-100-0-

- Standard color black
- Bending radius *R*
- Width index
- Series / Type

Simply push in the cables in the E-Chain with your thumb - and it's ready!
To remove simply pull out the cables from the E-Chain®

| | |
|---|---|
| Speed max. rolling | max. 3.28 ft/s (1 m/s) |
| Acceleration max. gliding | max. 3.28 ft/s² (1 m/s²) |
| Material - permitted temperature | igumid NB / -40°F (-40°C) up to +176°F (+80° C) |
| Flammability Class, igumid NB | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions for long travel
# AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
# EA16

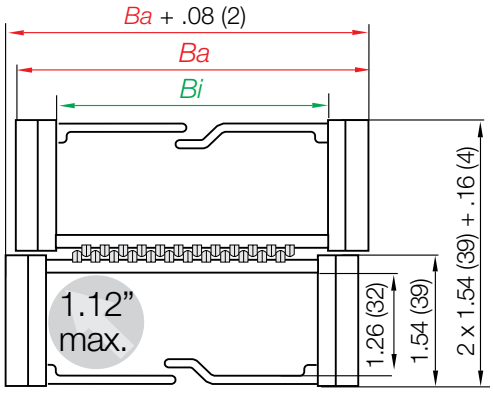
## Series EA16 - Simply press cables in (outer radius) - AUTO-GLIDE crossbars (inner radius)

Supplement part number with required radius. Example: EA16-4-065-0
Pitch: 1.20 in. (30.5 mm) per link links/ft (m) = 10.06 (33)

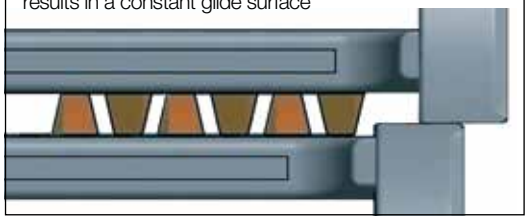
| Part Number | | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| EA16-4- | -0 | 1.89 (48) | 2.36 (60) |

Choose from the radii below for the above size
*Radius* (mm) Example: EA16-4-065-0

| | 065 | 075 | 100 |
|---|---|---|---|
| *R* | 2.56 (065) | 1.89 (075) | 3.94 (100) |
| $H_2$ | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$ | 12.80 (325) | 13.98 (355) | 22.44 (570) |
| $K_3$ | 27.64 (702) | 30.04 (763) | 49.25 (1251) |



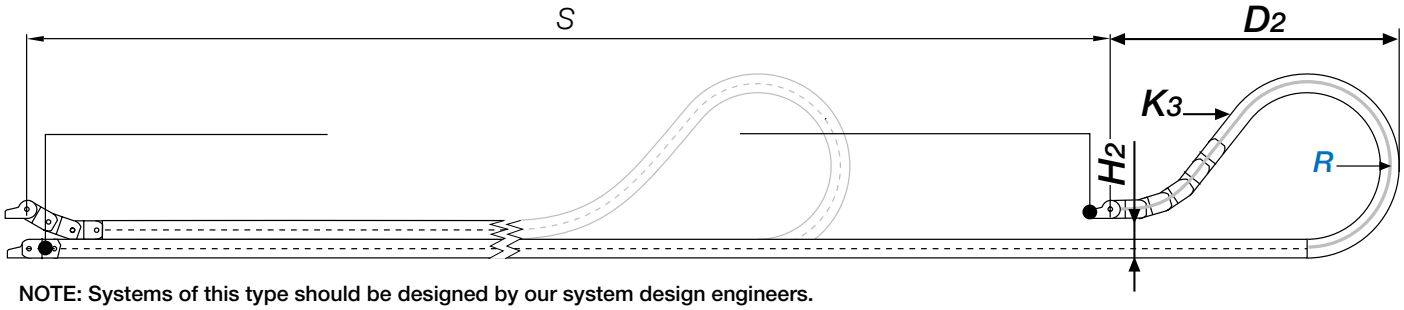

**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



| | | |
|---|---|---|
| Pitch | = | 1.20 (30.5 mm) |
| Links per ft (m) | = | 10.06 (33) |
| Chain length | = | $S + K_3$ |

## Gliding applications

**Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)**




NOTE: Systems of this type should be designed by our system design engineers.
Please contact igus® for assistance with your application.

| *R* | 2.56 (065) | 1.89 (075) | 3.94 (100) |
|---|---|---|---|
| $H_2$ | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2$ | 12.80 (325) | 13.98 (355) | 22.44 (570) |
| $K_3$ | 27.64 (702) | 30.04 (763) | 49.25 (1251) |

# Special solutions for long travel
# AUTO-GLIDE - Version 03 - Self-guiding E-Chain Systems®
# EA25

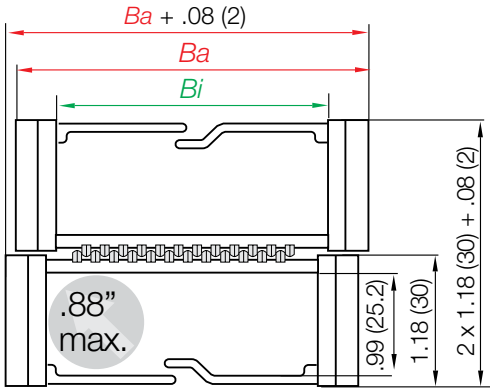
**Series EA25 - Simply press cables in (outer radius) - AUTO-GLIDE crossbars (inner radius)**

Supplement part number with required radius. Example: EA25-050-100-0
Pitch: .98 in. (25 mm) per link links/ft (m) = 12.24 (40)

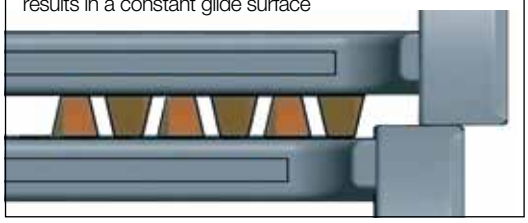
| Part Number | | *Bi* in. (mm) | *Ba* in. (mm) |
|---|---|---|---|
| EA25-050- | -0 | 1.97 (50) | 2.36 (60) |

Choose from the radii below for the above size
*Radius* (mm) Example: EA25-050-100-0

| | 075 | 100 |
|---|---|---|
| *R* | 1.89 (075) | 3.94 (100) |
| $H_2$ | 3.94 (100) | 3.94 (100) |
| $D_2$ | 13.00 (330) | 13.00 (330) |
| $K_3$ | 29.53 (750) | 44.29 (1125) |



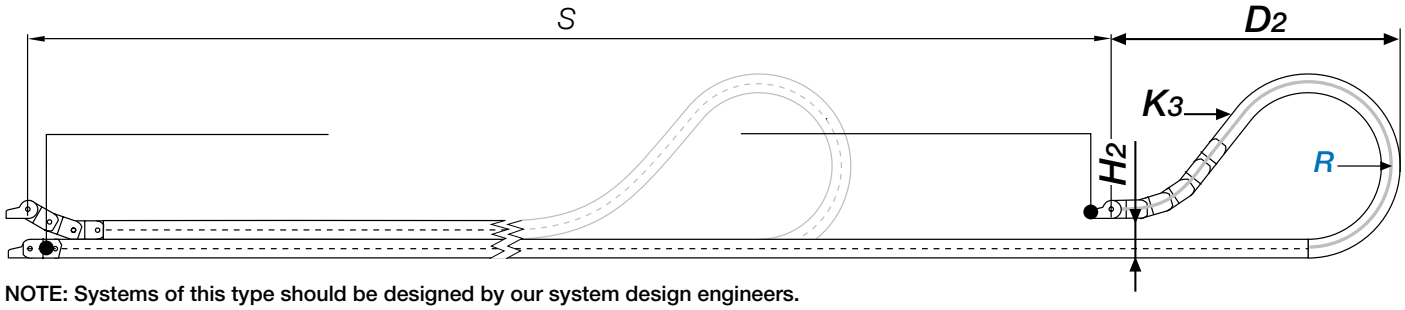

**AUTO-GLIDE principle**
Offset operation of upper and lower run, results in a constant glide surface



| | | |
|---|---|---|
| **Pitch** | = | .98 (25 mm) |
| **Links per ft (m)** | = | 12.24 (40) |
| **Chain length** | = | S + $K_3$ |

## Gliding applications

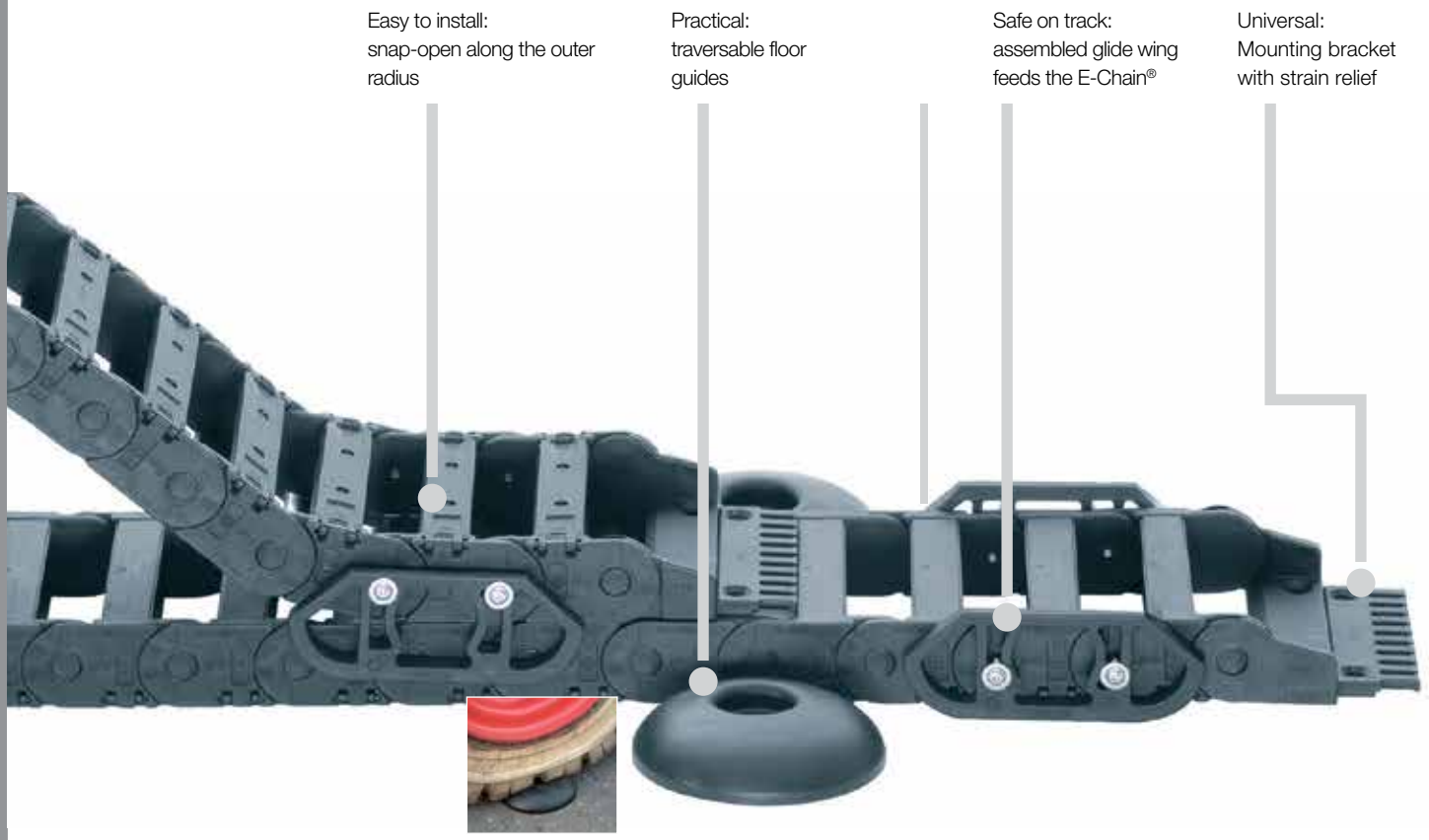
**Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 0.27 lbs/ft (0.4 kg/m)**




**NOTE: Systems of this type should be designed by our system design engineers.**
**Please contact igus® for assistance with your application.**

| | | |
|---|---|---|
| *R* | 1.89 (075) | 3.94 (100) |
| $H_2$ | 3.94 (100) | 3.94 (100) |
| $D_2$ | 13.00 (330) | 13.00 (330) |
| $K_3$ | 29.53 (750) | 44.29 (1125) |

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# Overview




# Special glide shoes provide safe guiding of the E2/000 - AUTO-GLIDE - Version 04

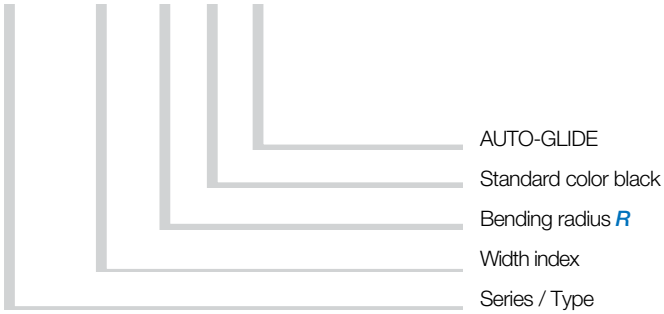
In this version, special plastic glide shoes are side-mounted on the E-Chain® link every 39.4 to 78.7 inches (1,000 to 2,000 mm). The function of these gliding shoes resembles the leeboard used on sailboats. Some of these glide shoes are conceived in such a way that in contact they pivot upwards and enable the continuation of the travel. Similarly the glide shoes in AUTO-GLIDE go up and down, each according to its position as lower run or upper run of the E-Chain®. They provide the precise lateral guidance and a smooth glide of the E-Chain®. The glide shoes are assembled every 24th E-Chain® link from the moving end. Up to 32.8 ft. (10 m) length without floor guides possible in the series 2400/2450/2480/2500.

**Typical industries and applications**

- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# Technical Data - Order Examples

## Part number structure
## 2500-05-150-0-AG




## Order example | Part number structure

**Order example for complete E-Chain® Series 2500, color black, with mounting brackets and interior separation:**

| | | |
|---|---|---|
| **E-Chain®** 32.8 ft. (10 m) | Please indicate E-Chain® length or number of links: 32.8 ft. (10 m) or 249 links (Number of links in the assembly must be deducted | 2500-05-150-0 |
| **E-Chain® + glide wing** | Assembly consists of 4 E-Chain® links and 2 glide wings | 2500-05-1500-AG |
| **+ Floor guides** | 8 pieces (2 pieces every 6.56 ft. (2 m) from the half of travel) | AG-380-BF |

**Order text: 249 links 2500-05-150-0 + 10 units 2500-05-150-AG + Mounting bracket + Interior separation** (optional)
**Note:** Lateral glide wings are assembled on every 24th E-Chain® link.

| | |
|---|---|
| Speed max. rolling | max. 1.64 ft/s (0.5 m/s) |
| Acceleration max. gliding | max. 3.28 ft/s² (1 m/s²) |
| Material - permitted temperature | igumid G / -40°F (-40°C) up to +248°F (+120° C) |
| Flammability Class, igumid G | VDE 0304 IIC UL94 HB |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# 2400/2450/2480/2500

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Series 2400 shown

Series 2400 - snap-open along the inner radius
Series 2450 - snap-open along the outer radius - standard
Series 2480 - snap-open along the inner radius, enclosed along the outer radius
Series 2500 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2500-05-[150]-0-AG
Pitch: 1.81 in. (46 mm) per link links/ft (m) = 6.63 (22)

| Part Number E-Chain® / E-Tube | *Bi* in. (mm) | *Ba* in. (mm) | Floor Guide Single part |
|---|---|---|---|
| 2400/2450/2480/2500-05-[ ]-0-AG | 2.24 (57) | 2.87 (73) | AG-380-BF |
| 2400/2450/2480/2500-07-[ ]-0-AG | 3.03 (77) | 3.66 (93) | AG-380-BF |
| 2400/2450/2480/2500-09-[ ]-0-AG | 3.50 (89) | 4.13 (105) | AG-380-BF |
| 2400/2450/2480/2500-10-[ ]-0-AG | 4.06 (103) | 4.69 (119) | AG-380-BF |
| 2400/2450/2480/2500-12-[ ]-0-AG | 4.92 (125) | 5.55 (141) | AG-380-BF |

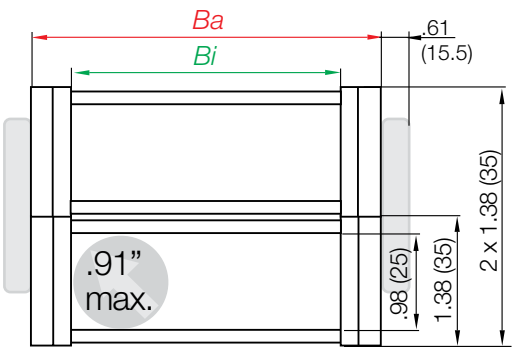
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2500-05-[150]-0-AG

| | 055* | 075 | 100 | 125 | 150 | 175 | 200 | 225 | 250 |
|---|---|---|---|---|---|---|---|---|---|
| R | 2.17 (55) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
| $H_2$ | 4.33 (110) | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2^{+25}$ | 5.59 (142) | 6.38 (162) | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_3$ | 19.92 (506) | 23.54 (598) | 36.22 (920) | 41.65 (1058) | 56.14 (1426) | 70.63 (1794) | 86.93 (2208) | 95.98 (2438) | 105.04 (2668) |

*This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# 2400/2450/2480/2500 - Installation Dimensions





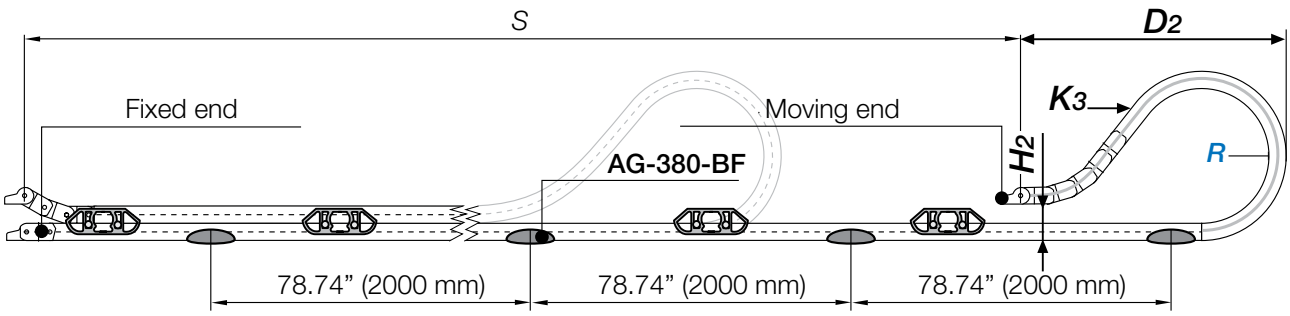

**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

## Gliding applications

**Long travel lengths up to 65.6 ft. (20 m), Fill weights up to 1.08 lbs/ft (1.6 kg/m)**
**In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting E-Chain®.**
**Note: Lateral glide wings are assembled on every 24th E-Chain® link.**

**Pitch per link: =** 1.81" (46 mm)
**Links per ft (m): =** 6.63 (22)
**For center mount applications:**
**Chain length =** $S + K_3$




| R | 2.17 (55) | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 8.86 (225) | 9.84 (250) |
|---|---|---|---|---|---|---|---|---|---|
| $H_2$ | 4.33 (110) | 5.91 (150) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) | 3.94 (100) |
| $D_2^{+25}$ | 5.59 (142) | 6.38 (162) | 14.96 (380) | 17.32 (440) | 23.23 (590) | 29.72 (755) | 37.40 (950) | 40.94 (1040) | 44.49 (1130) |
| $K_3$ | 19.92 (506) | 23.54 (598) | 36.22 (920) | 41.65 (1058) | 56.14 (1426) | 70.63 (1794) | 86.93 (2208) | 95.98 (2438) | 105.04 (2668) |

***This radius for Series 2450/2480 available upon request. Please consult igus® for delivery times.**

## Available Accessories

Optimized, cable-friendly interior separation program

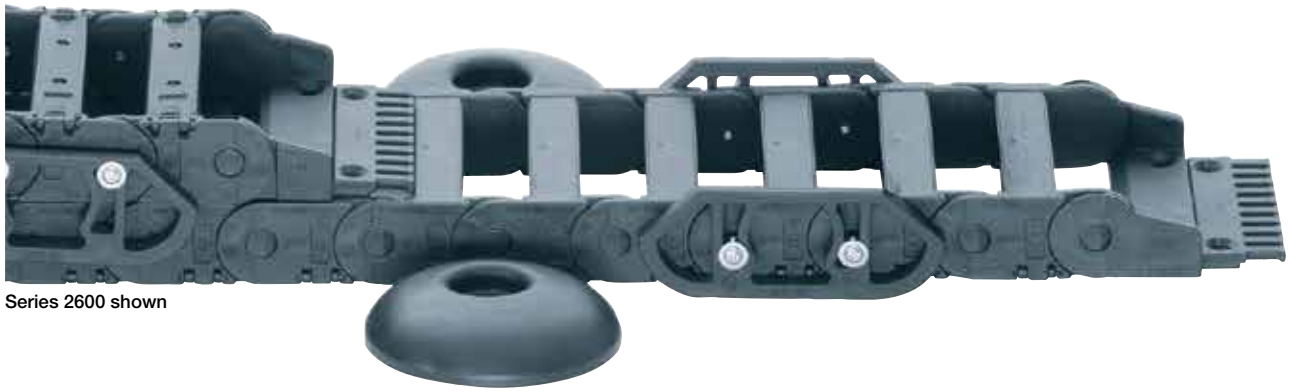
Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# 2600/2650/2680/2700

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



Series 2600 shown

Series 2600 - snap-open along the inner radius
Series 2650 - snap-open along the outer radius - standard
Series 2680 - snap-open along the inner radius, enclosed along the outer radius
Series 2700 - snap-open along the inner radius, fully enclosed

Supplement part number with required radius. Example: 2600-05-[150]-0-AG
Pitch: 2.20 in. (56 mm) per link links/ft (m) = 5.45 (18)

| Part Number E-Chain® / E-Tube | *Bi* in. (mm) | *Ba* in. (mm) | Floor Guide Single part |
|---|---|---|---|
| 2600/2650/2680/2700-05-[ ]-0-AG | 1.97 (50) | 2.60 (66) | AG-380-BF |
| 2600/2650/2680/2700-06-[ ]-0-AG | 2.56 (65) | 3.19 (81) | AG-380-BF |
| 2600/2650/2680/2700-07-[ ]-0-AG | 2.95 (75) | 3.58 (91) | AG-380-BF |
| 2600/2650/2680/2700-09-[ ]-0-AG | 3.54 (90) | 4.17 (106) | AG-380-BF |
| 2600/2650/2680/2700-10-[ ]-0-AG | 3.94 (100) | 4.57 (116) | AG-380-BF |
| 2600/2650/2680/2700-12-[ ]-0-AG | 4.92 (125) | 5.55 (141) | AG-380-BF |
| 2600/2650/2680/2700-15-[ ]-0-AG | 5.91 (150) | 6.54 (166) | AG-380-BF |
| 2600/2650/2680/2700-17-[ ]-0-AG | 6.89 (175) | 7.64 (194) | AG-380-BF |

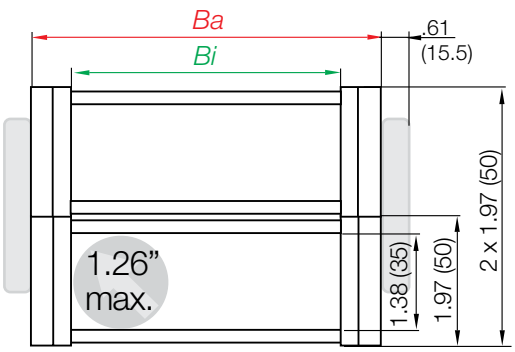
Choose from the radii below for all of the above sizes
*Radius* (mm) Example: 2600-05-[150]-0-AG

| | 075* | 100 | 125 | 150 | 175 | 200 | 250 | | |
|---|---|---|---|---|---|---|---|---|---|
| R | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) | | |
| $H_2$ | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | | |
| $D_2^{*25}$ | 5.91 (150) | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) | | |
| $K_3$ | 24.33 (616) | 33.07 (840) | 44.09 (1120) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 90.39 (2296) | | |

*This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.

# Special solutions for long travel
# AUTO-GLIDE - Version 04 - Self-guiding E-Chain Systems®
# 2600/2650/2680/2700 - Installation Dimensions





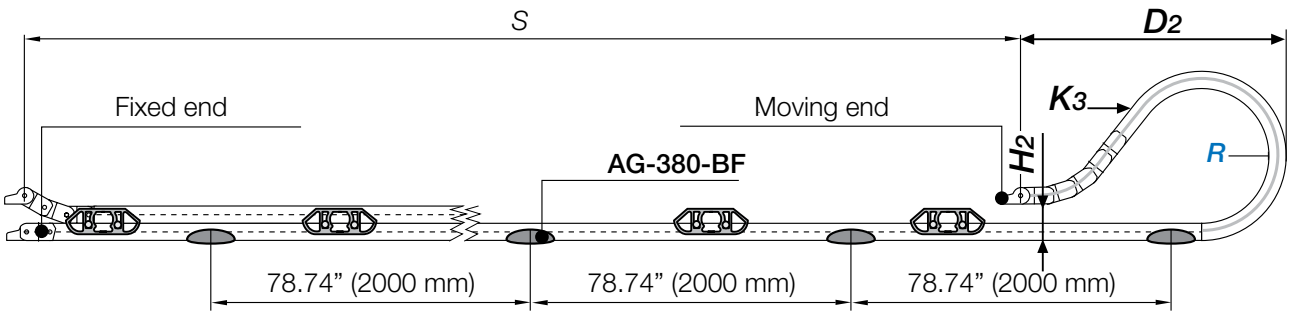

**Legend**

S = Length of travel
R = Bending radius
$H_{RI}$ = Trough inner height
$H_2$ = *Mounting height
$D_2$ = Overlength - long travels, gliding

## Gliding applications

**Long travel lengths up to 98.4 ft. (30 m), Fill weights up to 1.34 lbs/ft (2.0 kg/m)**
**In case of travels less than 9.84 ft. (3 m) we recommend an self-supporting E-Chain®.**
**Note: Lateral glide wings are assembled on every 24th E-Chain® link.**

**Pitch per link: =** 2.20" (56 mm)
**Links per ft (m): =** 5.45 (18)
**For center mount applications:**
**Chain length =** $S + K_3$




| R | 2.95 (75) | 3.94 (100) | 4.92 (125) | 5.91 (150) | 6.89 (175) | 7.87 (200) | 9.84 (250) |
|---|---|---|---|---|---|---|---|
| $H_2$ | 5.91 (150) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) | 6.54 (166) |
| $D_{2^{+25}}$ | 5.91 (150) | 13.78 (350) | 18.70 (475) | 19.69 (500) | 25.79 (655) | 30.31 (770) | 37.40 (950) |
| $K_3$ | 24.33 (616) | 33.07 (840) | 44.09 (1120) | 48.50 (1232) | 61.73 (1568) | 72.76 (1848) | 90.39 (2296) |

***This radius for Series 2650/2680 available upon request. Please consult igus® for delivery times.**

## Available Accessories

Optimized, cable-friendly interior separation program

Pivoting mounting brackets for gliding applications

Pivoting KMA mounting brackets with attachment points on all sides

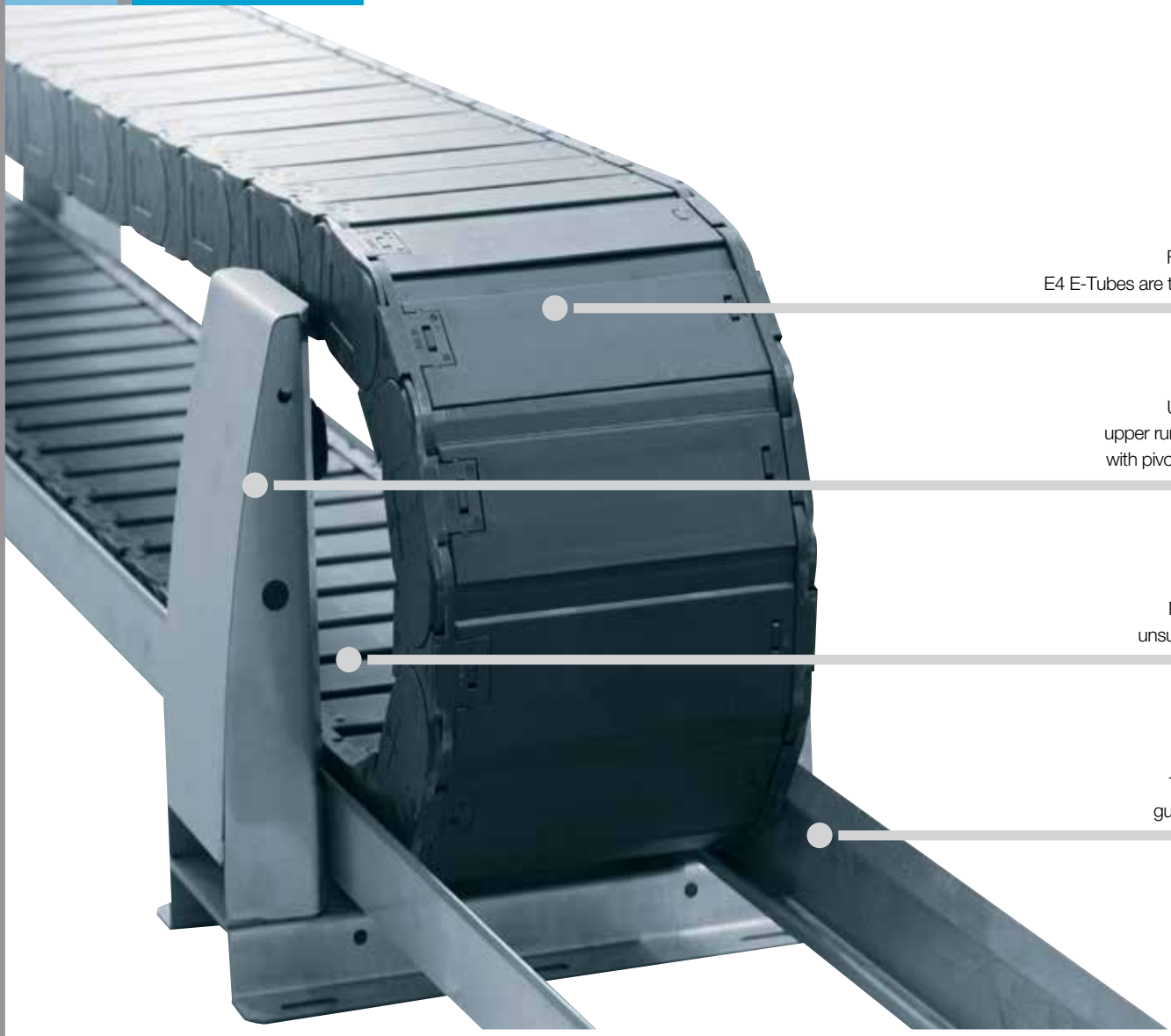
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

igus

# More solutions for long travels

## Guidelok horizontal - Basic flizz®
## Micro Flizz® - PPDS - Modular Projects

# More solutions for long travel
# Guidelok Horizontal - Upper run guide for long travels
# Overview




# Self-supporting in chip areas - Guidelok horizontal

Especially for long travels on machine tools, when the E-Chain® has to be gliding, metallic chips are a problem. Guidelok horizontal is a cost-effective solution.

- Travels, unsupported up to (50 m) possible
- Chips cannot get stuck between upper and lower run
- Modular system with few parts (also possible without sideways trough)
- Enormous increase of "self-supporting" length of E-Chains®
- Lower push-/pull forces (smaller E-Chains®, self-supporting and rollers = energy efficient)
- Lower cost than most steel chains or ambitions gliding systems
- Open guide trough design, chips can fall through

Typical industries and applications

- Machine tools
- Applications in chip areas
- Wherever a gliding application is not recommended

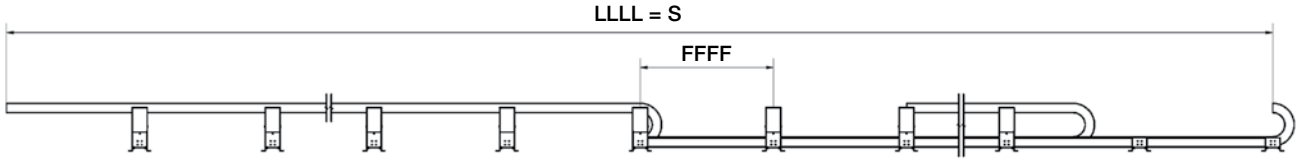
# More solutions for long travel
# Guidelok Horizontal - Upper run guide for long travels
# Dimensions

**Design-principle - horizontal Guidelok guides the E-Chain® on special spring loaded roller supports that are pushed back by the E-Chain® radius, clearing its path**

The E-Chain® is guided in the trough channel, pushing back the spring loaded roller support with its radius...

...which snaps back out after the E-Chain® radius has passed...

...the upper run then lays on the roller support.



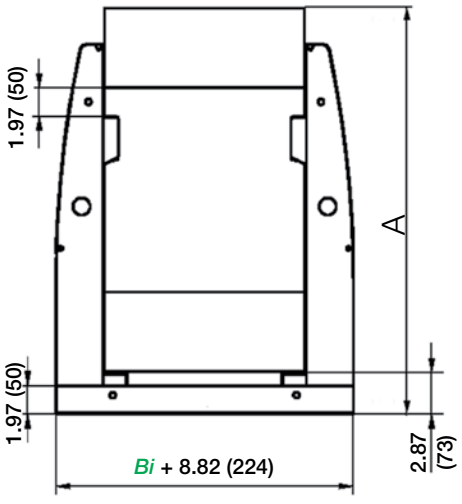

**Design sketch - Guidelok horizontal**

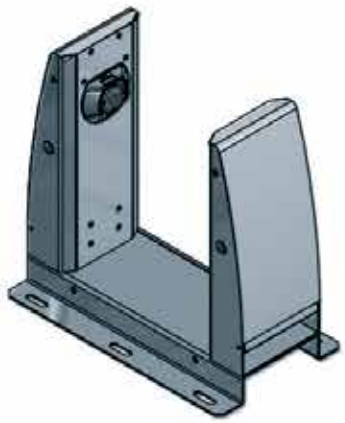
## Selection table

| For Series | Part Number | *Bi* (mm) | *R* (mm) |
|---|---|---|---|
| E4-56/R4-56 | 907-645-*Bi*- *R* - LLLL/FFFF | (150 - 600) | 150, 175, 200, 250, 300 |
| E4-80/R4-80 | 907-645-*Bi*- *R* - LLLL/FFFF | (50 - 600) | 150, 175, 200, 250, 300 |
| E4-112 | 907-645-*Bi*- *R* - LLLL/FFFF | (200 - 600) | 150, 175, 200, 250, 300 |
| | | | |
| E4-56/R4-56 | 907-837-*Bi*- *R* - LLLL/FFFF | (50 - 600) | 350, 400, 450, 500 |
| E4-80/R4-80 | 907-837-*Bi*- *R* - LLLL/FFFF | (50 - 600) | 350, 400, 450, 500 |
| E4-112 | 907-837-*Bi*- *R* - LLLL/FFFF | (200 - 600) | 350, 400, 450, 500 |

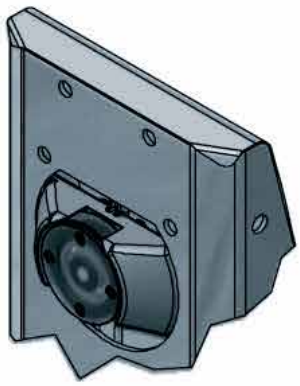
LLLL = Total Length

FFFF = Field Length

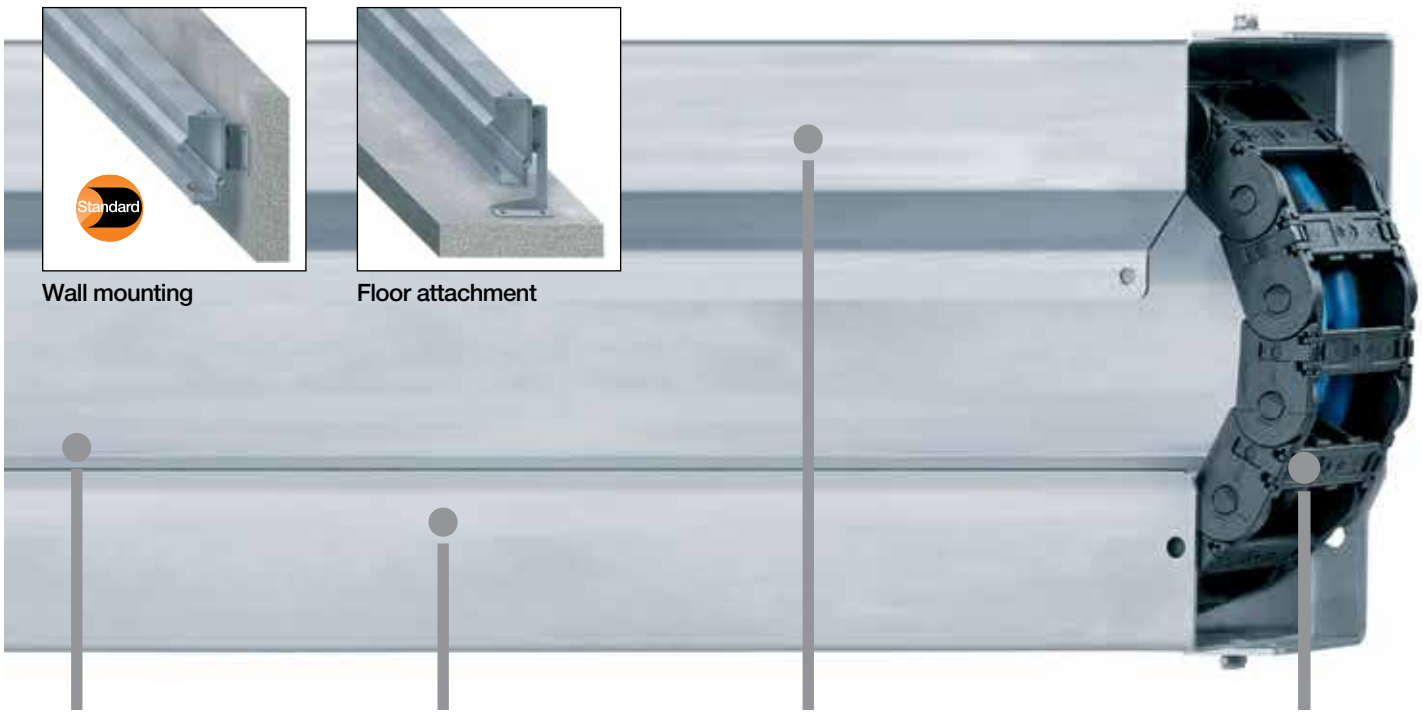


Lateral supports with pivoting rollers for the upper run support of the E-Chain®



# More solutions for long travel
# Basic Flizz® - Enclosed solution for long travels
# Overview




# Cost-effective, enclosed solution for long travels - Basic Flizz®

- Low-maintenance system for travels up to 100 m
- Other sizes and versions available, up to 200 travel with E2 rol E-Chains® and more
- Protection against weather and dirt exposure - Cost-effective and fully enclosed complete solution
- Standardized and modular design
- Easy wall mounting or optionally as floor attachment
- Cable lengths up to 50 % shorter than festooning, low-profile installation and no cable salad
- Cables are always guided with a defined bending radius
  an tension forces will be supported by the E-Chain®
- Cables cannot entangle, hang, or tear
- No slip-ring contact (as is the case on motor drums)
- Cables or hoses can be easily retrofitted on demand
- Reduce power costs - directly driven by scraper.
  No additional drives needed (as is the case on motor drums)
- Optionally available moving end arm (e.g. as mechanical connection for scraper trolley -
  we will document the local situation and will provide a tailored solution

**Typical industries and applications**

- Sludge scrapers
- Longitudinal scrapers
- Sand catchers
- Grease trap
- Waste-water treatment
- Plating facilities
- Cranes
- Plant construction
- Locks

# More solutions for long travel
# Basic Flizz® - Enclosed solution for long travels
# Dimensions

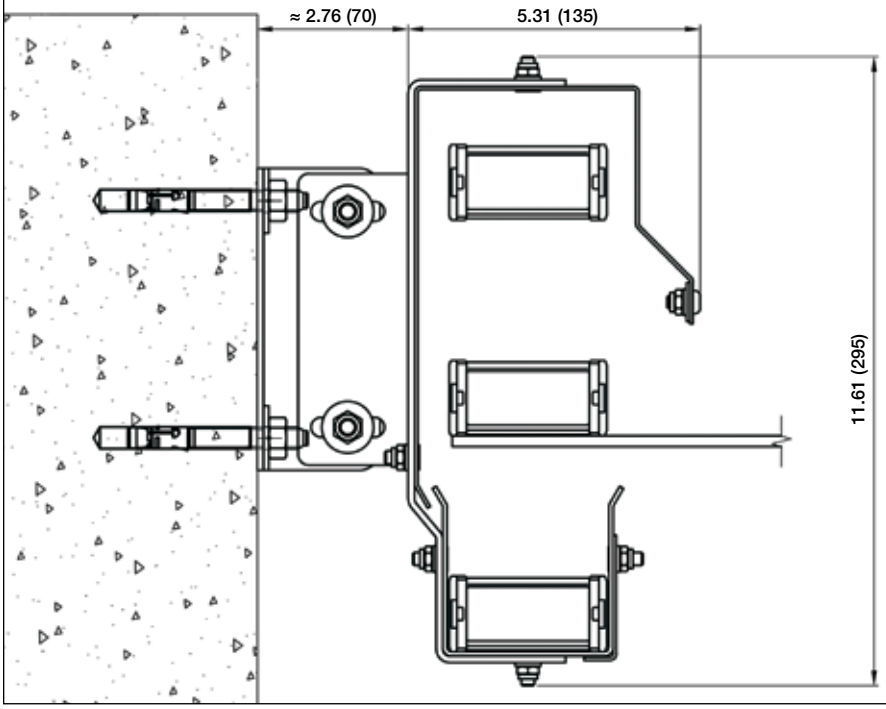
| Part Number<br>Basic Flizz® | Specification | Support gap<br>(mm) |
|---|---|---|
| IE92-31-75-260-3000-01-E | basic flizz® - With glide bar | 3000 |
| IE92-31-75-260-3000-F-01-E | basic flizz® - Fixed-end module | 3000 |
| IE92-30-75-260-3000-01-E | basic flizz® - Without glide bar | 3000 |

Standard material stainless steel V2A: material 1.4301 (AISI 304).

Optional: galvanized steel or stainless steel V4A: material 1.4404 (AISI 316L)

More lengths available upon request, please consult igus® for delivery time.

## Dimensions



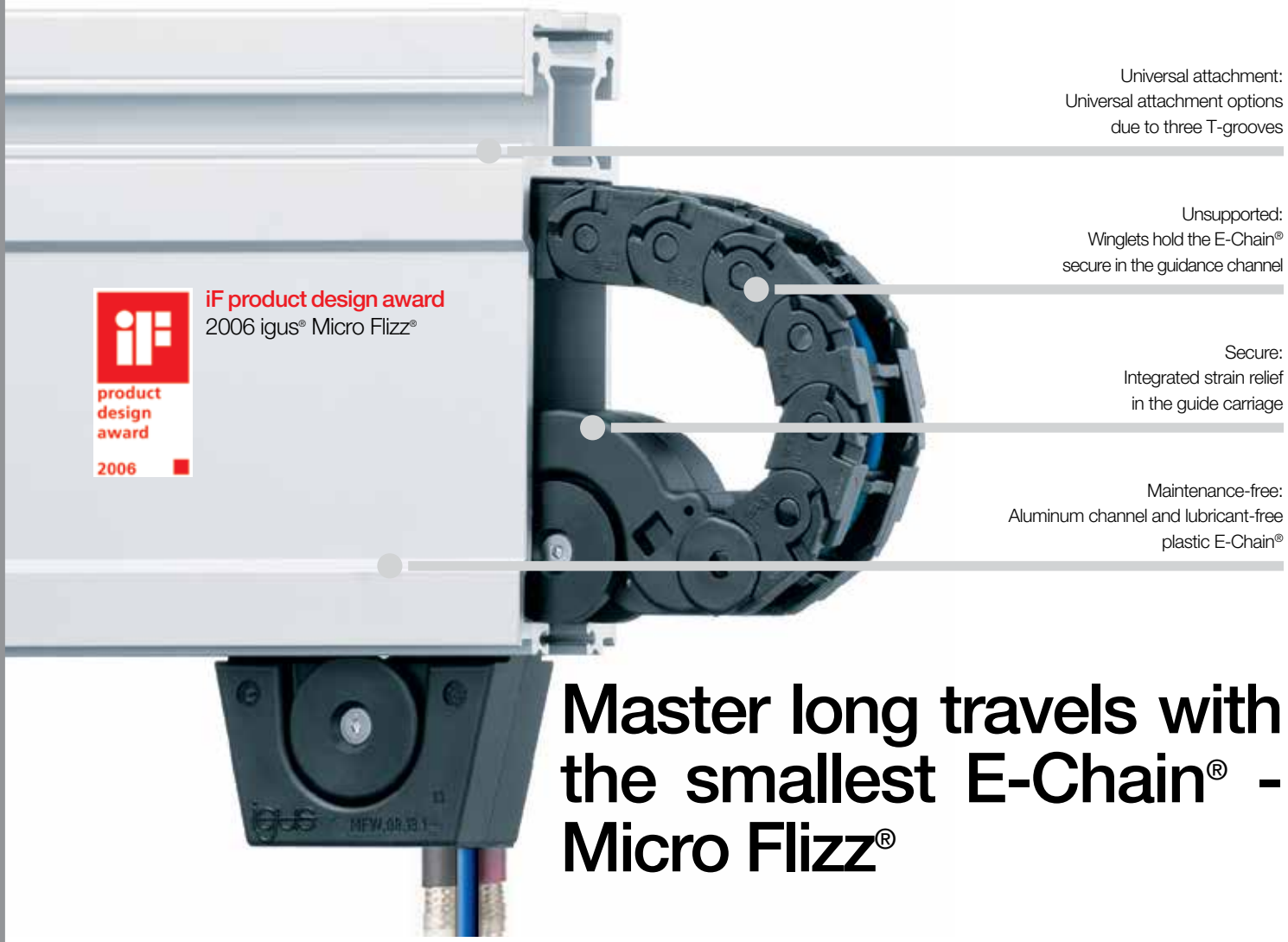
basic flizz® - enclosed
total solution

igus® basic flizz® - ideal for
waste-water treatment plants

Cost-effective,
maintenance-free system

Simple assembly (wall-mounted or floor-mounted assembly), standardized, modular construction

# More solutions for long travel
# Micro Flizz® - Small E-Chains® in Aluminum profile
# Overview




iF product design award
2006 igus® Micro Flizz®

## Master long travels with the smallest E-Chain® - Micro Flizz®

**Compact system for a secure guidance of power, data and air as a maintenance-free alternative for busbar**

- E-Chain® is guided in special slot, no sliding against each other
- Control via stationary switch cabinet possible
- Accelerations up to 164 ft/s² (50 m/s²) and speeds up to 19.69 ft. (6 m/s)
- Fast assembly due to pre-configured, modular system
- Less space required
- Available also as preassembled
- Smooth running due to ball bearings in the guide carriages
- Also with EX tested E-Chain® available (on request)
- 3 sizes available: cable diameters **MF06:** max. Ø 8.0 mm, **MF08:** max. Ø 9.5 mm, **MF10:** max. Ø 16 mm

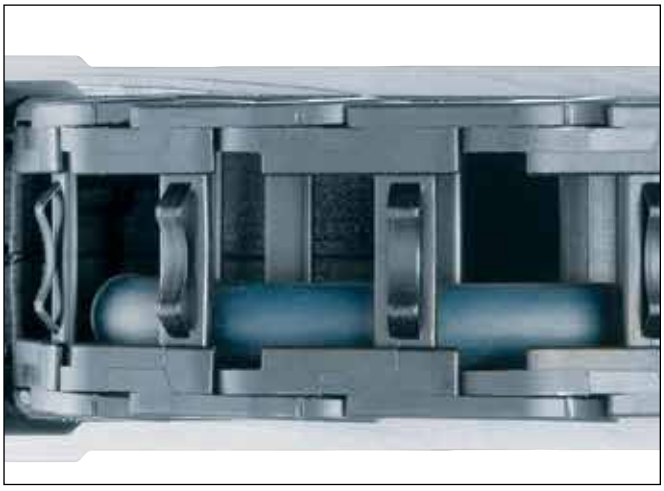
**Typical industries and applications**

- Rack feeder
- Indoor cranes
- Industrial gates
- Working stations
- Sewage treatment plants
- Camera systems
- Sliding doors
- Operator panels
- Measure systems
- Studio equipment
- Conveyor technique

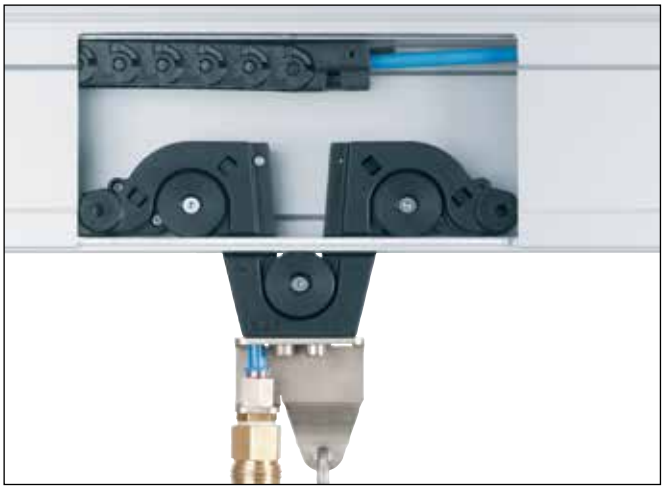
# More solutions for long travel
# Micro Flizz® - Small E-Chains® in Aluminum profile
# Overview

Separated upper and lower run: Running trough the radius, integrated winglets fold in

In the extended position, the winglets fold out and safely hold the upper run in the elevated position

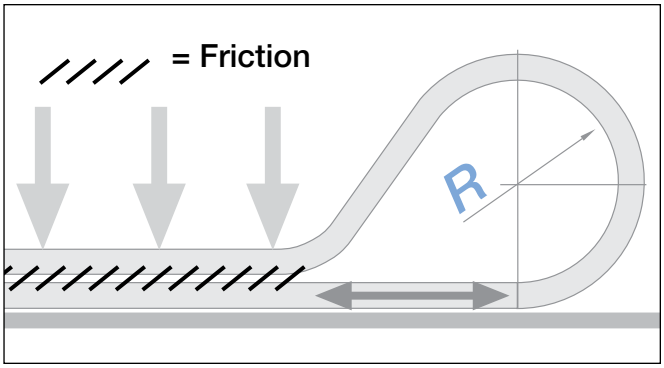


A polymer spring element cushions the motion inside the trough and lower noise

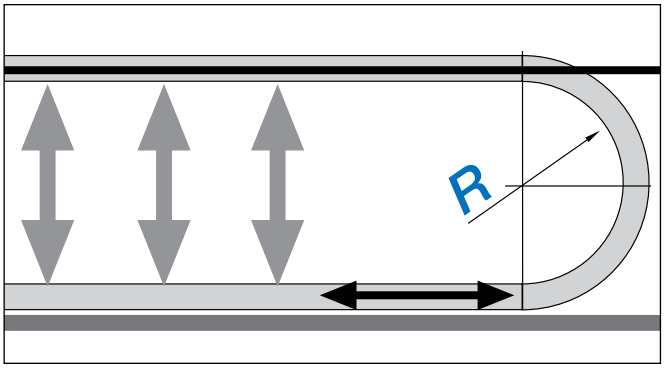


Micro Flizz® accessory: Connection for compressed air coupling

## Special feature: micro flizz® construction




**Yesterday:** Moving lower run, sliding function.
Long travels need stable E-Chains®

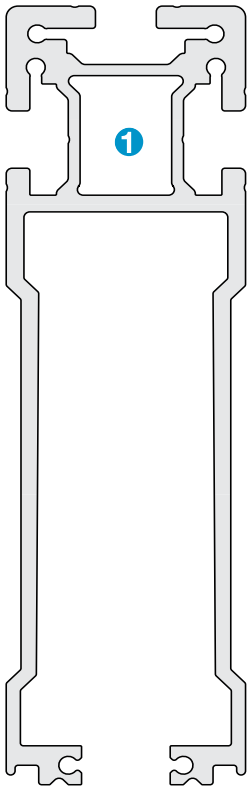



**Today: Micro Flizz® -** Small E-Chains®, self-guiding in guiding channel - Friction is reduced by factor 3 over the conventional system.

# E-Chain Systems®
# Micro Flizz® - Small E-Chains® in aluminum profile

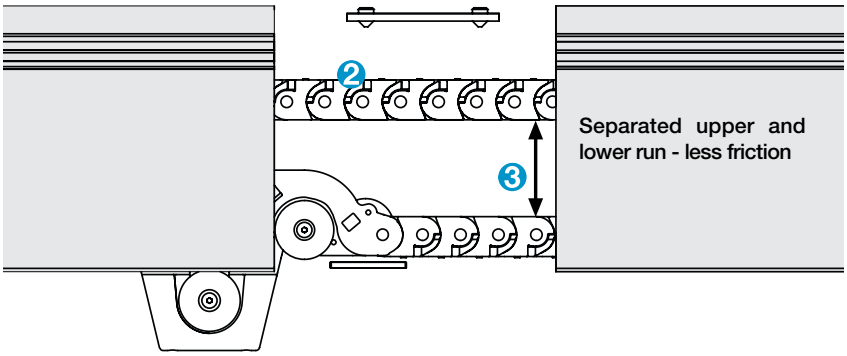
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

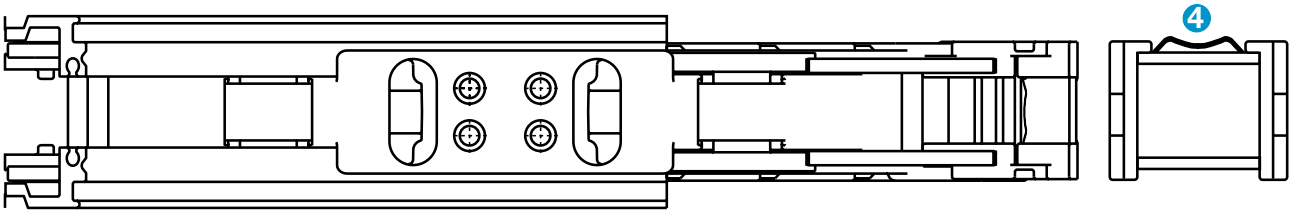




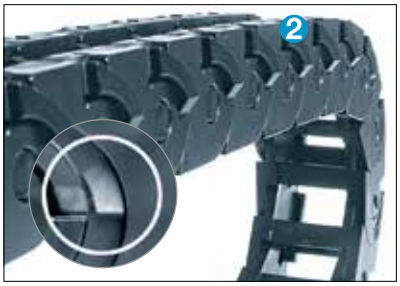

## Technical data Micro Flizz®

1. Universal attachment options due to three T-grooves
2. Winglets hold the E-Chain® secure in the guidance channel
3. Separated upper and lower run of the Flizz® E-Chain®, thus less friction and reduced push/pull forces
4. Polymer springs for a soft unrolling of the E-Chain® in the Flizz® channel effect a substantial noise reduction
5. Opposed E-Chains® can be used, that means a double filling or two independent travels are possible
6. Attachment of the E-Chain® by roller cart on the moving end, gliding or locking possible
7. Integrated strain relief in the guide carriage for the safe fixing of cables

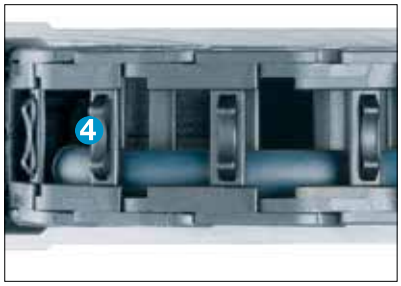


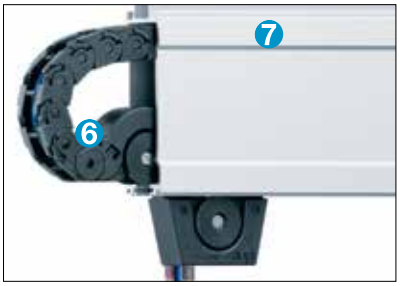
## Details Micro Flizz®




In the extended position, the winglets fold out and safely hold the upper run in the elevated position

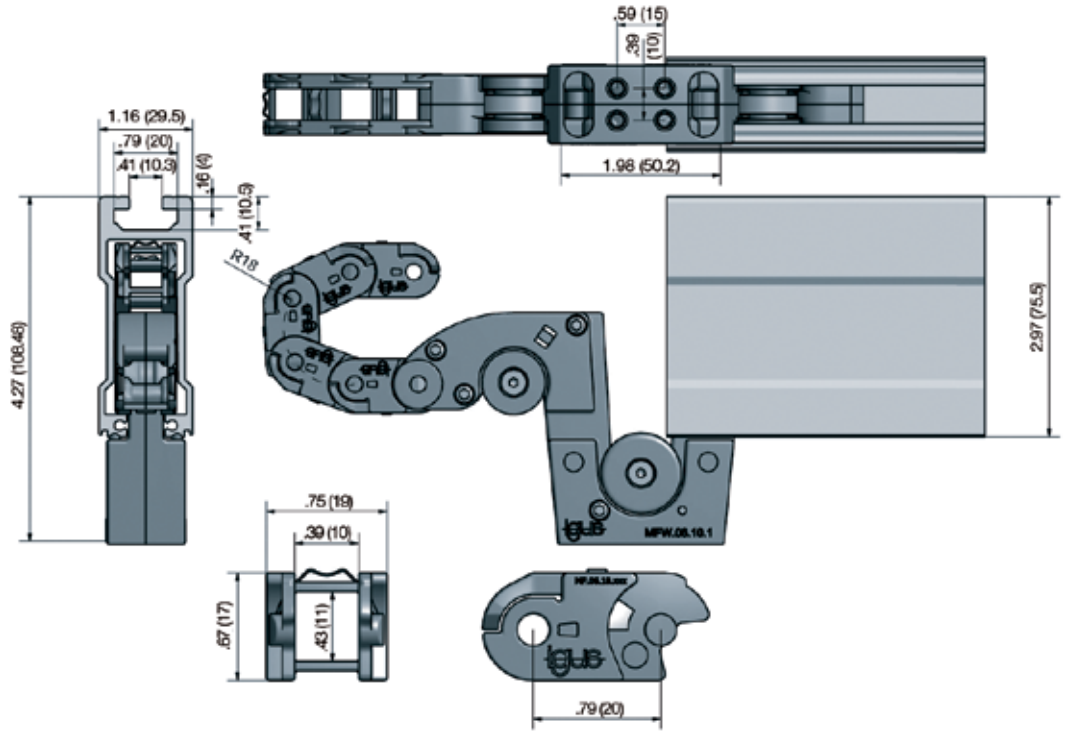



A polymer spring element cushions the motion inside the trough and lower noise




Power, data, pneumatics in confined areas. Chainflex® cables are specifically designed for this challenge

## Micro Flizz® Series MF06 - Part No. MF-06-10-018




## Micro Flizz® Series MF06 - Dimensions

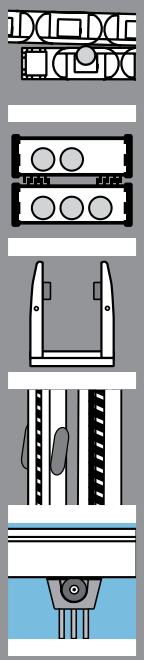
| Part No. | *Bi* | | *Ba* | | *hi* | | *ha* | | *R* Bending radius |
|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | (mm) |
| MF-06-10-018 | .39 | (10) | .75 | (19) | .43 | (11) | .67 | (17) | 018 |

| More dimensions | |
|---|---|
| Installation height complete system: | 108.48 mm |
| Installation width complete system: | 29.5 mm |
| Recommended length channel pieces: | 2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material |
| Cable diameter max.: | 8 mm |

MF06

E-Chain® viewable for illustration

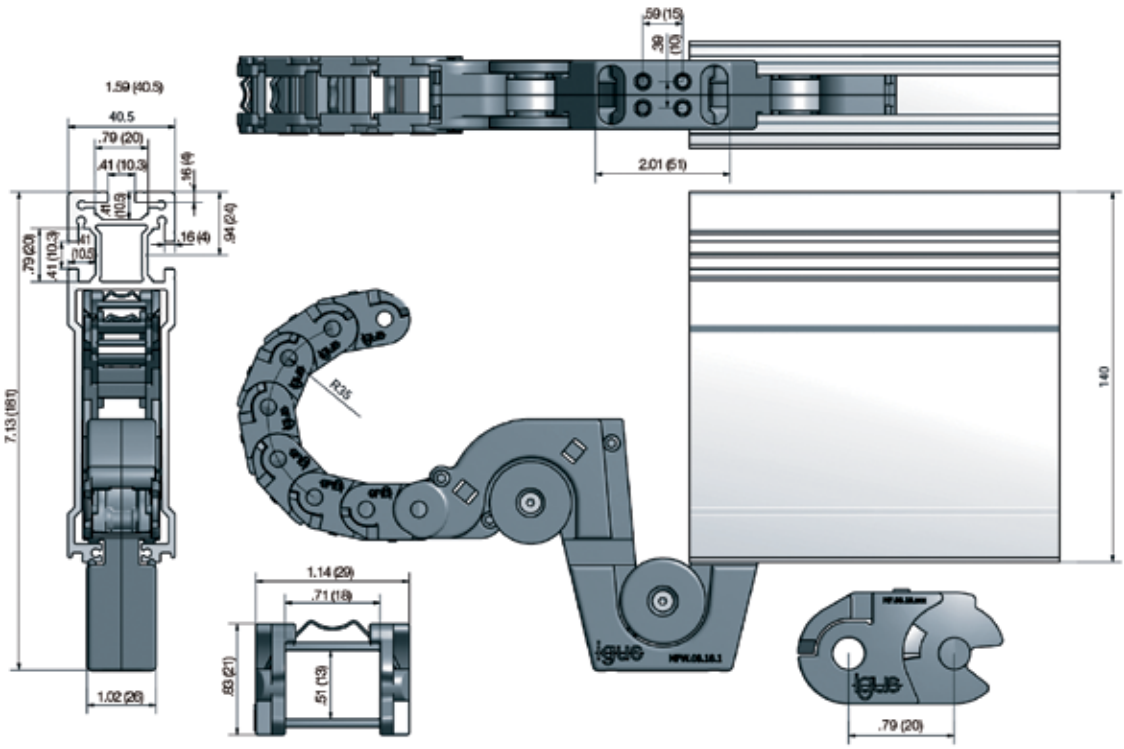
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS



# E-Chain Systems®
# Micro Flizz® - Small E-Chains® in Aluminum profile
# Series MF08

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Micro Flizz® Series MF08 - Part No. MF-08-18-035




## Micro Flizz® Series MF08 - Dimensions

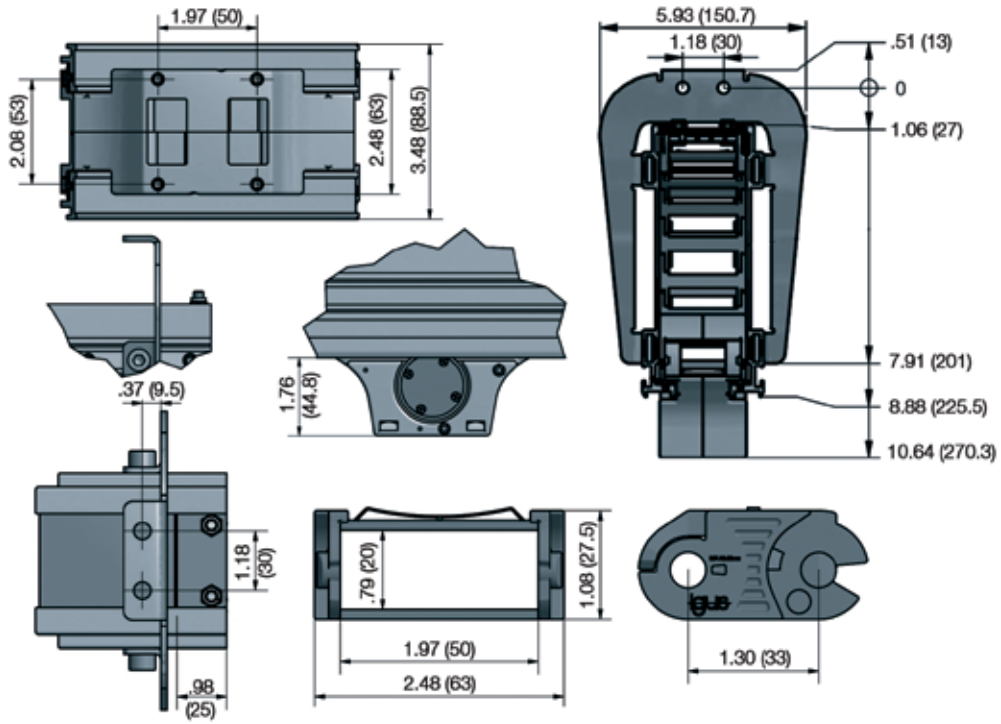
| Part No. | *Bi* | | *Ba* | | *hi* | | *ha* | | *R* Bending radius |
|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | (mm) |
| MF-08-18-035 | .71 | (18) | 1.14 | (29) | .51 | (13) | .83 | (21) | 035 |

Order example ➤ Page 9.179

| More dimensions | |
|---|---|
| Installation height complete system: | 161 mm |
| Installation width complete system: | 40.5 mm |
| Recommended length channel pieces: | 2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material |
| Cable diameter max.: | 9.5 mm |

E-Chain® viewable for illustration

## Micro Flizz® Series MF10 - Part No. MF-10-50-075




## Micro Flizz® Series MF08 - Dimensions

| Part No. | *Bi* | | *Ba* | | *hi* | | *ha* | | *R* Bending radius |
|---|---|---|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | (mm) |
| MF-10-50-075 | 1.97 | (50) | 2.48 | (63) | .79 | (20) | 1.08 | (27.5) | 075 |

Order example ➤ Page 9.179

| More dimensions | |
|---|---|
| Installation height complete system: | 275 mm |
| Installation width complete system: | 107.6 mm |
| Recommended length channel pieces: | 2.0 m, 3.0 m and 6.0 m - Die-cast aluminum material |
| Cable diameter max.: | 16 mm |

E-Chain® viewable for illustration

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# E-Chain Systems®
# Micro Flizz® - Small E-Chains® in Aluminum profile
# Order Examples

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

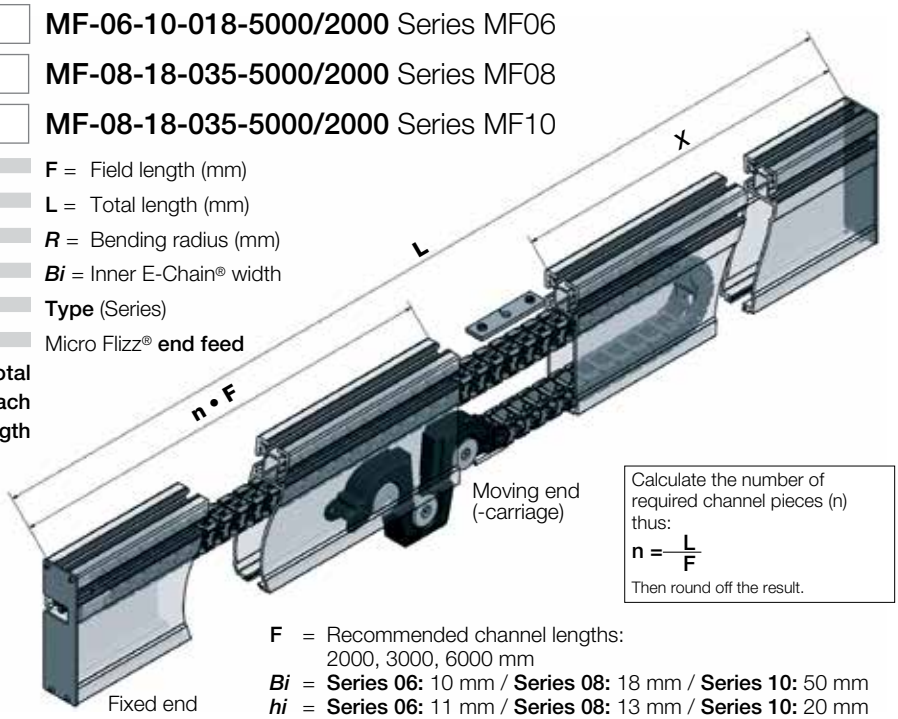
## Order example - End feed

| | | | | | |
|---|---|---|---|---|---|
| MF | 06- | 10- | 018- | L / F | **MF-06-10-018-5000/2000** Series MF06 |
| MF | 08- | 18- | 035- | L / F | **MF-08-18-035-5000/2000** Series MF08 |
| MF | 10- | 50- | 075- | L / F | **MF-08-18-035-5000/2000** Series MF10 |

**F** = Field length (mm)
**L** = Total length (mm)
***R*** = Bending radius (mm)
***Bi*** = Inner E-Chain® width
**Type** (Series)
Micro Flizz® **end feed**

**Micro Flizz® as end feed option with a total length of 5000 mm, split into 2 channels each 2000 mm and 1 channel with a residual length of 1000 mm**

***Bi*** = Inner E-Chain® width (mm)
***R*** = Bending radius (mm)
***n*** = Number of channel pieces
***S*** = travel = L - 300 (mm)
**F** = Field length (mm)
**L** = Total length (mm)
**X** = residual length (mm)




Calculate the number of required channel pieces (n) thus:

$$n = \frac{L}{F}$$

Then round off the result.

**F** = Recommended channel lengths: 2000, 3000, 6000 mm
***Bi*** = **Series 06:** 10 mm / **Series 08:** 18 mm / **Series 10:** 50 mm
***hi*** = **Series 06:** 11 mm / **Series 08:** 13 mm / **Series 10:** 20 mm

## Order example - 2 carriages in opposite directions

| | | | | | |
|---|---|---|---|---|---|
| MFG2 | 06- | 10- | 018- | L / F | **MFG2-06-10-018-10000/3000** Series MF06 |
| MFG2 | 08- | 18- | 035- | L / F | **MFG2-08-18-035-10000/3000** Series MF08 |
| MFG2 | 10- | 50- | 075- | L / F | **MFG2-08-18-035-10000/3000** Series MF10 |

**F** = Field length [mm]
**L** = Total length [mm]
***R*** = Bending radius [mm]
***Bi*** = Inner E-Chain® width
**Type** (Series)
Micro Flizz® **2 carriages in opposite directions**

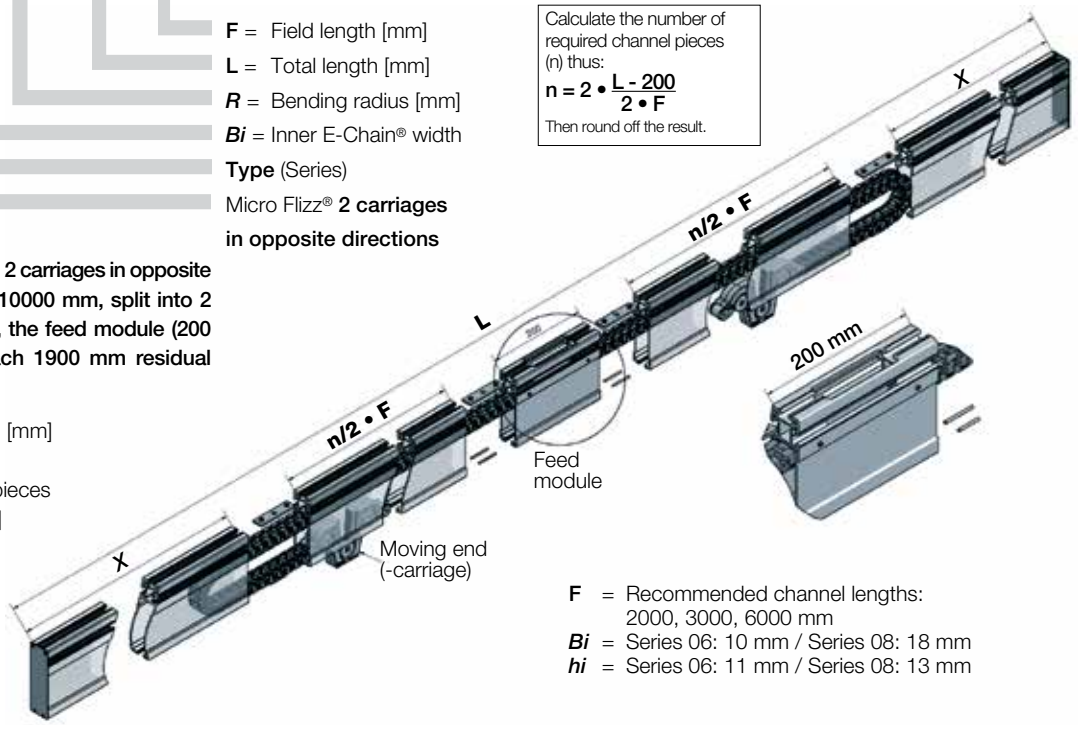
**Micro Flizz® mounted with 2 carriages in opposite directions - Total length 10000 mm, split into 2 channels each 3000 mm, the feed module (200 mm) and 2 channels each 1900 mm residual length.**

***Bi*** = Inner E-Chain® width [mm]
***R*** = Bending radius [mm]
***n*** = Number of channel pieces
***S*** = travel = L - 300 [mm]
**F** = Field length [mm]
**L** = Total length [mm]
**X** = residual length [mm]

Calculate the number of required channel pieces (n) thus:

$$n = 2 \bullet \frac{L - 200}{2 \bullet F}$$

Then round off the result.




**F** = Recommended channel lengths: 2000, 3000, 6000 mm
***Bi*** = Series 06: 10 mm / Series 08: 18 mm
***hi*** = Series 06: 11 mm / Series 08: 13 mm

## Highly flexible Chainflex® special cables for dynamic applications

| Chainflex® | | Temp. | v max. unsupported ft/s | (m/s) | v max. gliding ft/s | (m/s) | a max. ft/s² | (m/s²) | Number of cores | AWG Range |
|---|---|---|---|---|---|---|---|---|---|---|
| | CF9 | -31°F - +212°F | 32.8 | (10) | 19.7 | (6) | 328 | (100) | 2 - 36 | 24-2 |
| | CF10 | -31°F - +212°F | 32.8 | (10) | 16.4 | (5) | 328 | (100) | 2 - 25 | 26-12 |
| | CF98 | -31°F - +194°F | 32.8 | (10) | 19.7 | (6) | 328 | (100) | 2 - 8 | 26-22 |
| | CF99 | -31°F - +194°F | 32.8 | (10) | 19.7 | (6) | 328 | (100) | 2 - 8 | 26-22 |

**Chainflex® cables suitable for Micro Flizz® are available from stock at igus®!**
MF06 - max. cable outer diameter ø 8.0 mm, MF08 - max. cable outer diameter ø 9.5 mm

Micro Flizz® in an outdoor application with 30 m travel

Safe energy supply under strong dust
and dirt accumulation with igus® Micro Flizz®

Micro Flizz® as “energy supplying rail guide”
for a scale to weigh chemicals, etc.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# E-Chain Systems®
# PPDS - Condition Monitoring
# Overview - Advantages

Floating moving end
now also available for
PPDS basic

PPDS basic:
Reliability
from stock

PPDS analysis unit:
Emergency shut-off or alarm in response to a potential system overload

PPF sensor:
Force is measured directly at the mounting bracket of the E-Chain®

Complete package:
Including interface cables

# Condition monitoring:
# Push Pull Force Detection System - PPDS

The PPDS System is an electronic diagnostics tool that performs online monitoring of the displacement forces on the E-Chains® in order to avoid system damage and stoppages. Excessive dirt, ice, and snow and foreign objects that fall into the E-Chain® can block the system, causing the E-Chain® to ascend and break. The PPDS system measures the displacement forces on the E-Chain® several times per second, and compares the information with be calculated specification. If a variance occurs the plant can be automatically stopped with the help of the PPDS system.

- 3 PPDS systems are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the membrane keypad directly at the device
- Compact housing, stable, corrosion resistant, sealed in accordance with IP 65
- The force limit is programmed in tensile and compression direction
- The plant stops when the force is exceeded
- Custom programmable and event logging in the data memory

**Typical industries and applications**

- Malfunction-sensitive plants, such as conveyor systems in power plants
- Waste incineration systems
- Chemical plants
- Crane building
- Generally with long travel distances that have high fail-safe requirements
- For long travel applications, if tensile and compressive force monitoring is needed

# E-Chain Systems®
# PPDS - Condition Monitoring Options
# Product Range - Basic / Advanced / Pro

## PPDS basic - as safety standard

So far the realization of Condition Monitoring Systems was limited to large-scale projects, e.g. ship-to-shore cranes. PPDS basic now makes this technology available for all standard industrial appliances. The simple force measuring function conducted at the mounting bracket of the E-Chain® new also provides an emergency stop function for E-Chains® in gliding applications under 328 ft. (100 m) stroke at a reasonable price

- Low-cost system protection
- Emergency Shutdown or alarming in case of system overload
- Space - saving design
- New floating moving end available for PPDS basic.

## PPDS advanced - for long gliding applications

The system for very long gliding applications with an igus® floating moving arm (used to compensate lateral movements). The force sensor is integrated in the floating moving arm and works in connection with the PPDS evaluation unit. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.

## PPDS pro - for extreme operational reliability requirements

The system for long travels when extreme operational reliability is essential. The PPDS pro analysis unit can analyze force thresholds by position. Here as well, a load cell is installed in the floating moving end. We recommend to realize the engineering of such a plant by our technicians, please consult igus®.

Electronic pull-push force monitor with the igus® PPDS system

PPDS system test facility in the igus® lab

## Floating moving end as separate component

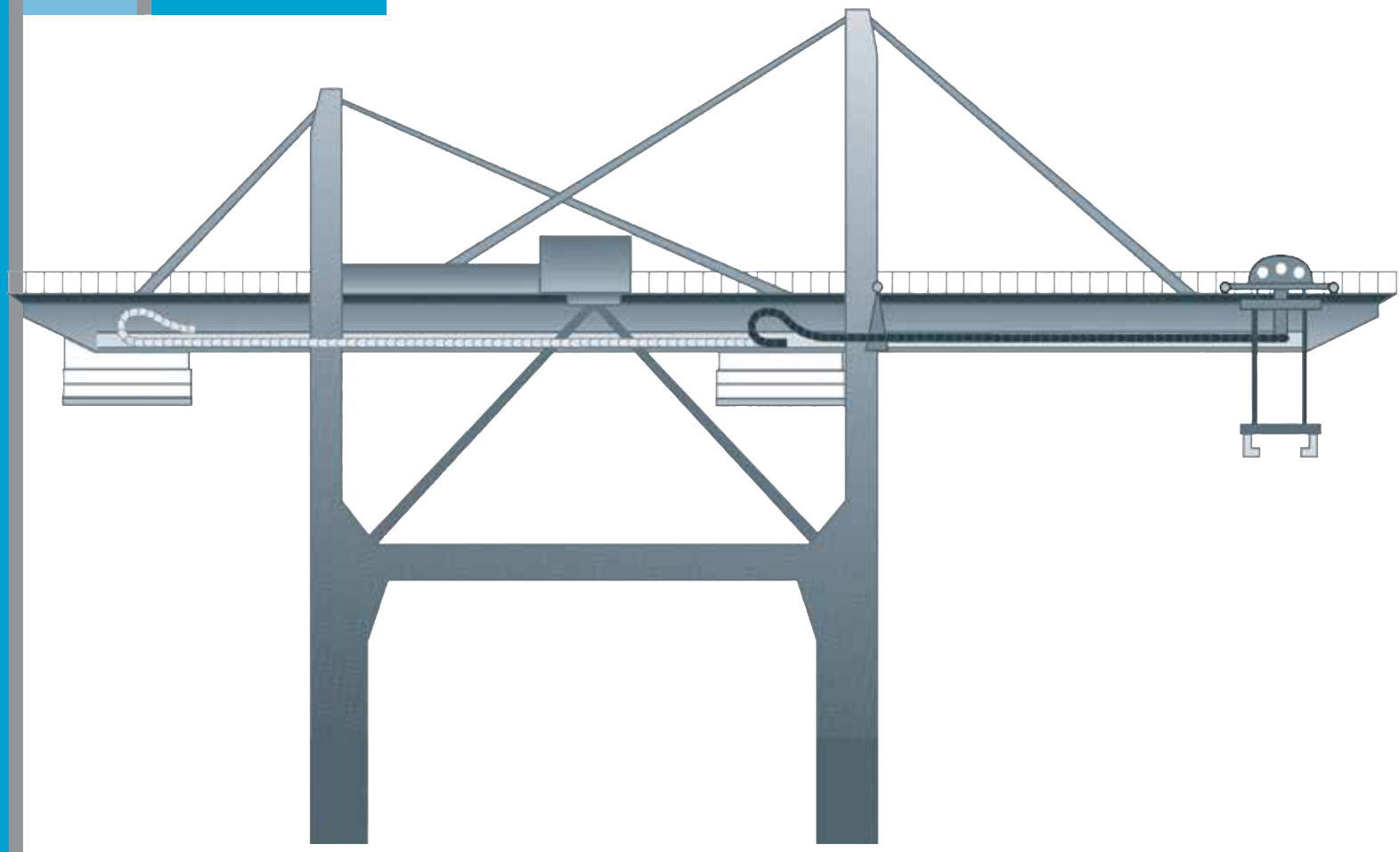
- Compensates parallel errors - compensates lateral offset tolerances between moving end and E-Chain System®
  horizontal ± 82 ft. (25 m)
- Easy assembly, small, light, and affordable
- Compatible with PPDS basic
- Max. acceleration: 2 m/s² (speed depends on E-Chain® type)

## Delivery program

| Part No. floating moving end as separate component | For E-Chain® Series |
|---|---|
| FTA-B-01-2500-XX | 2500, System E2/000 |
| FTA-B-01-2700-XX | 2700, System E2/000 |
| FTA-B-01-3400-XX | 2500, System E2/000 |
| FTA-B-01-E4-28-XX | E4.28, System E4-1 |
| FTA-B-01-E4-32-XX | E4.32, System E4-1 |
| FTA-B-01-E4-42-XX | E4.42, System E4-1 |

More series available upon request, please consult igus® for delivery time. Supplement Part No. with the required E-Chain® width-index.
**Example: FTA-B-01-2500-05**

E-Chain Systems®
Modular System for Projects
Advantages



# For extremely heavy-duty applications and special solutions from stock

**The igus® modular system for projects** ...tested and time-proven in numerous projects, have now become available as a modular standard system.

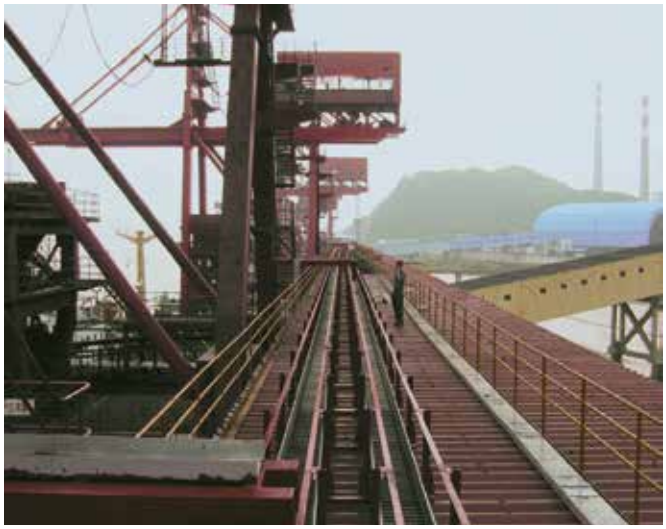
- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Safe function
- System warranty available upon request, for individual applications
- PPDS tow arm with electronic push/pull force monitoring
- Fixed end-modules for easy attachment of the E-Chain® inside the guide trough, with no drilling required
- Extreme gliders gliding elements for even longer cycle life of E-Chains® on long travels
- HD trough systems with different assembly kit designs, matching the respective application and stress levels

**Typical industries and applications**

- Cranes
- Offshore
- Cranes, offshore

Long travels with electronics Push/Pull-force monitoring with the igus® PPDS System

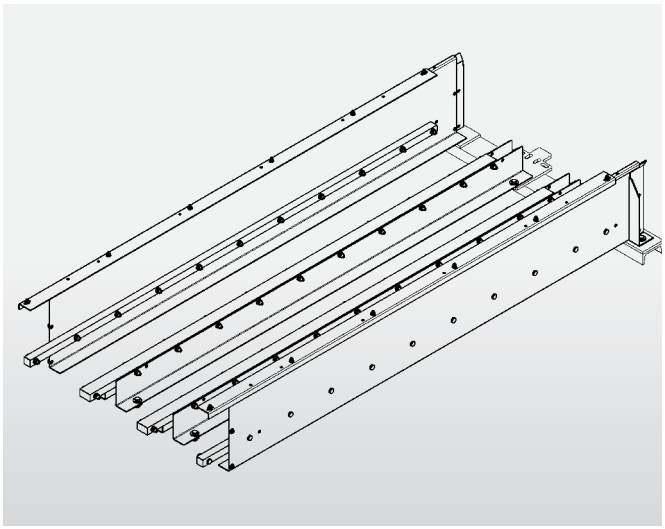
igus® supervisors plan projects worldwide



Series 4040R on a coal unloading system - travel 623.4 ft. (190 m), speed 1.64 ft/ s (0.5 m/s), fill weight 5.41 lbs/ft (8.05 kg/m)

Series 4040HD on (180 m) travel lengths with housing.
-40°F/+104°F (-40°C to +40°C) temperature range and high dirt pollution

Crane system designed by igus®



igus® project planning example, here: guide trough modules

# Special solutions for movements in all directions

## Guidelok slimline F - LiftBand - E-Spool

# Special solutions - Movements in all directions
# Guidelok Slimline F
# Overview - Advantages

Safe guidance:
Also at high travel speeds

No swinging out of the E-Chain®:
Guidelok safety catches to guide the
E-Chain® even at high lateral accelerations

High vertical travels:
Travels up to 164 ft. (50 m) in 4.92 ft. (1.5 m)
or 6.56 ft. (2 m) field length possible

# Safe vertical guidance - Guidelok slimline F

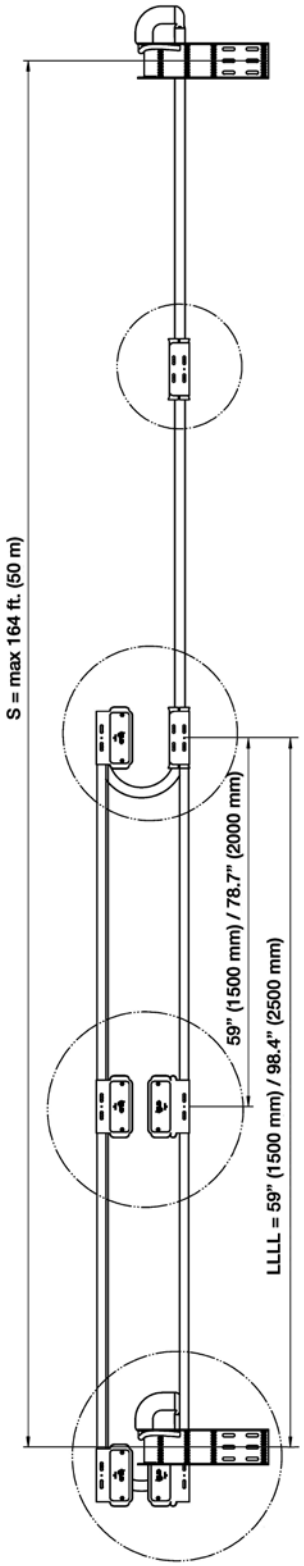
In highly dynamic rack feeder a speed for the horizontal movement exceeding in 23 ft. (7 m/s) is not uncommon. The advanced igus® Guidelok slimline F guides E-Chains® even at the fastest speeds or accelerations.

- Up to 23 ft. (7 m/s) and 32.8 ft. (10 m/s²)
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 164 ft. (50 m)
- No swinging of the E-Chain®, high reliability due to the lever mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy and data and all kinds of media are safely

**Typical industries and applications**

- Storage and retrieval units
- Lifts
- Elevators
- Construction and crane lifts
- Hoists

# Special solutions - Movements in all directions
# Guidelok Slimline F
# Dimensions




**Note: Systems of this type should be designed by our system design engineers. We will be more than willing to submit an offer to you. Please contact us about this.**

| For Series | *Bi* | *R* Bending radii | Part. No. Guidelok F |
|---|---|---|---|
| 255 | (103) | (150) | GLSL-F-255-10-150-LLLL/FFFF |
| 2700 | (100) | (150) | GLSL-F-2700-10-150-LLLL/FFFF |

LLLL = Total length
FFFF = Field length
Special versions with different widths, radii and field lengths possible. Please consult igus® for delivery time.
Supplement Part No. with required value for total length and field length.
Example: **GLSL-F-2700-10-150-9000/1500**

| | |
|---|---|
| Speed max. vertical | max. 13 ft/s (4 m/s) |
| Speed max. horizontal | max. 23 ft/s (7 m/s) |
| Acceleration max. a | max. 32.8 ft/s² (10 m/s²) |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions - Movements in all directions
# LiftBand
# Overview - Advantages

## Extracted system -
## Secure cable supply up to 42.7 ft. (13 m)

# Guide up to a height of 42.65 ft. (13 m) with limited installation space - LiftBand

**Modular, silent, space saving -**
**guide media, energy and data up and down.**
High vertical applications that have plenty of space horizontally but allow only for little system height can be implemented with the LiftBand

- Available in 2 sizes -
  Inner width .98" (25 mm) and 1.26" (32 mm)
- 2 radii available - 6.89" (175 mm) and 9.84" (250 mm)
- Alternative to zig-zag solution
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. expansion length: 42.7 ft. (13 m)
- Simply press cables up to a diameter
  of .35"/.47" (9/12 mm*) into the E-Chain®
- Pull cables up to .43"/.59" (11/15* mm)
  into the E-Chain® (*depends on Series)

**Typical industries and applications**
● Stage technology ● Indoor cranes
● Mobile telescoping antennas

## Retracted system -
## Safe discard in a solid steel basket

## LiftBand Series LB-E332-25 - E-Chain® with "easy" design - inner width .98" (25 mm)

| Part No. LiftBand | Extension Height ft (m) | Inner Width *Bi* in. (mm) | Inner Height *hi* in. (mm) | Bending Radius Max. *R* in. (mm) | Cable Max. Ø in. (mm) |
|---|---|---|---|---|---|
| LB-E332-25-2-175-1-01-0 | 3.28 (1) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-2-01-0 | 6.56 (2) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-3-01-0 | 9.84 (3) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-4-01-0 | 13.12 (4) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-5-01-0 | 16.41 (5) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-6-01-0 | 19.69 (6) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-7-01-0 | 22.97 (7) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-8-01-0 | 26.25 (8) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-9-01-0 | 29.53 (9) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-10-01-0 | 32.81 (10) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-11-01-0 | 36.10 (11) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-12-01-0 | 39.37 (12) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |
| LB-E332-25-2-175-13-01-0 | 42.65 (13) | .98 (25) | .08 x .51 (2 x 13) | 6.89 (175) | Ø .35 (9) |

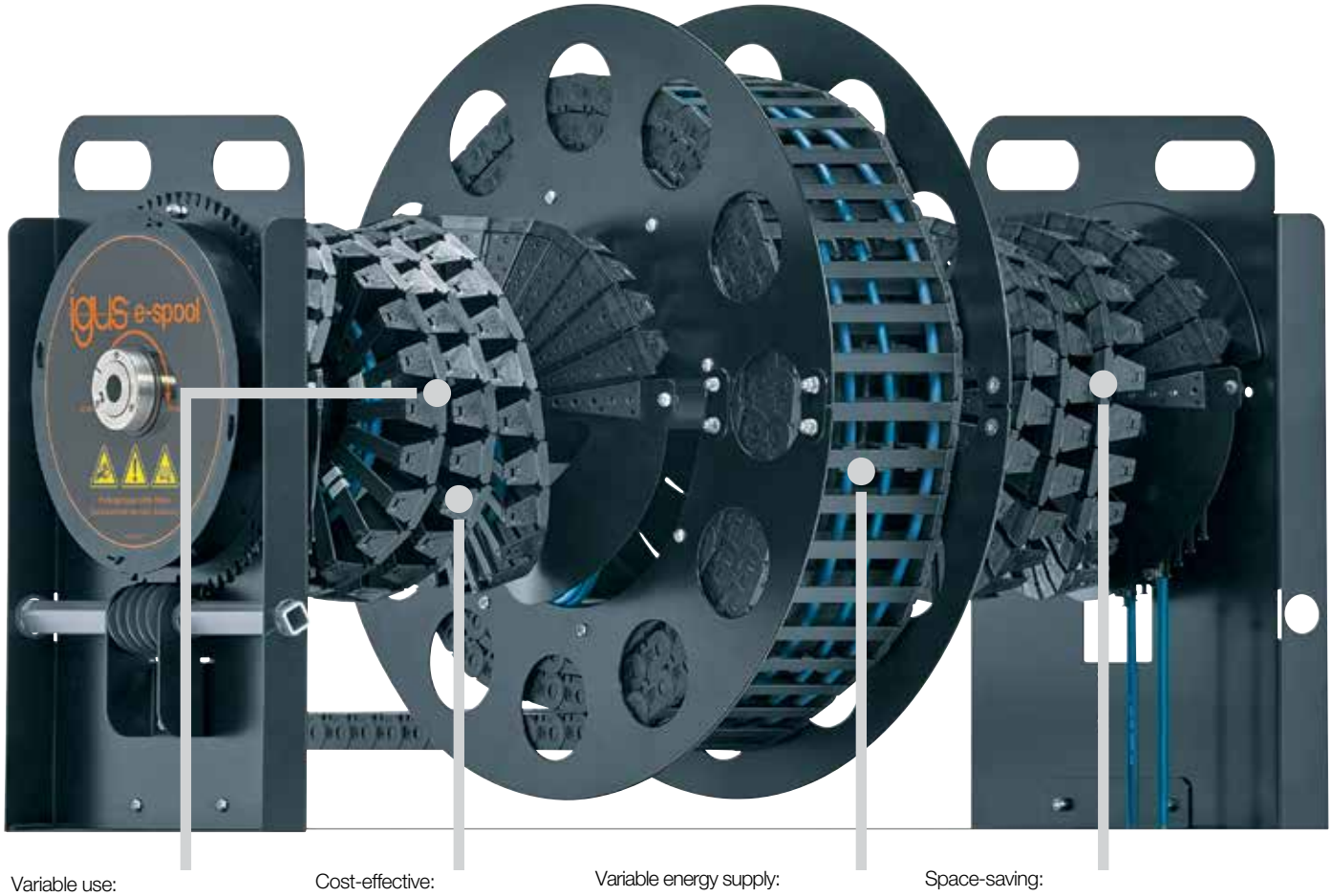
*Simply press cables up to a diameter of .35" (9 mm) into the E-Chain® / pull cables up to .43" (11 mm) into the E-Chain®

## LiftBand Series LB-E332-25 - E-Chain® with "easy" design - inner width .98" (25 mm)

| Part No. LiftBand | Extension Height ft (m) | Inner Width *Bi* in. (mm) | Inner Height *hi* in. (mm) | Bending Radius Max. *R* in. (mm) | Cable Max. Ø in. (mm) |
|---|---|---|---|---|---|
| LB-E332-32-2-250-1-01-0 | 3.28 (1) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-2-01-0 | 6.56 (2) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-3-01-0 | 9.84 (3) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-4-01-0 | 13.12 (4) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-5-01-0 | 16.41 (5) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-6-01-0 | 19.69 (6) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-7-01-0 | 22.97 (7) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-8-01-0 | 26.25 (8) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-9-01-0 | 29.53 (9) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-10-01-0 | 32.81 (10) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-11-01-0 | 36.10 (11) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-12-01-0 | 39.37 (12) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |
| LB-E332-32-2-250-13-01-0 | 42.65 (13) | 1.26 (32) | .08 x .67 (2 x 17) | 9.84 (250) | Ø .47 (12) |

*Simply press cables up to a diameter of .47" (12 mm) into the E-Chain® / pull cables up to .59" (15 mm) into the E-Chain®

# Special solutions - Movements in all directions
# E-Spool
# Overview - Advantages




Variable use:
Energy supply possible in all directions

Cost-effective:
TwisterBand enables rotary movement

Variable energy supply:
guidance of all media in one system

Space-saving:
E-Chain® rolled into the home position, the paths remain free

# The cable drum without a slip ring - igus® E-Spool

Route many different cables in very narrow spaces. e-spool uniquely combines two different energy supply systems: one standard E-Chain® is guided by one roller and always provides the precisely correct length and tension of the energy supply system through an integrated retaining spring. In the starting position, the E-Chain® is entirely rolled up to save space. The TwisterBand connects the roller with the shaft block, which serves as an interface with the permanently laid cables.

- Different media and diameters in one drum possible
- No tensile load of the cables
- Energy supply in all possible directions (horizontal, vertical, diagonal)
- Space-saving, no "E-Chain® junction" - E-Chain® rolled into the home position, the paths remain free
- Cable diameters up to .67" (17 mm)
- Cables can be retroactively added or changed
- Alternative to zig-zag solutions
- Max. deployment and retract speed: 3.28 ft. (1 m/s)

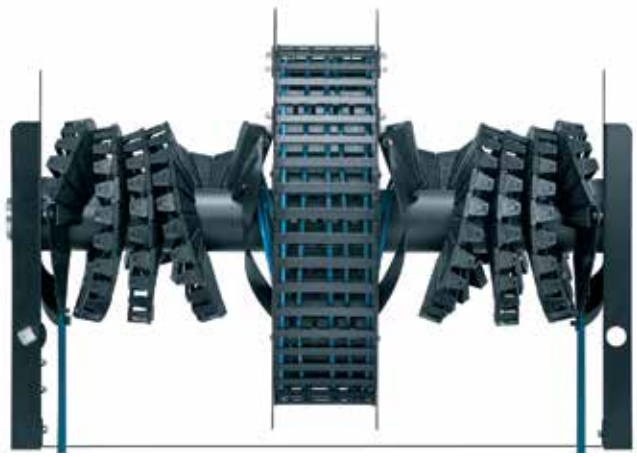
**Typical industries and applications**

- Telescopic applications
- Light / Stage equipment
- Space-saving alternative to zig-zag applications

iF product design award
2013 igus® E-Spool

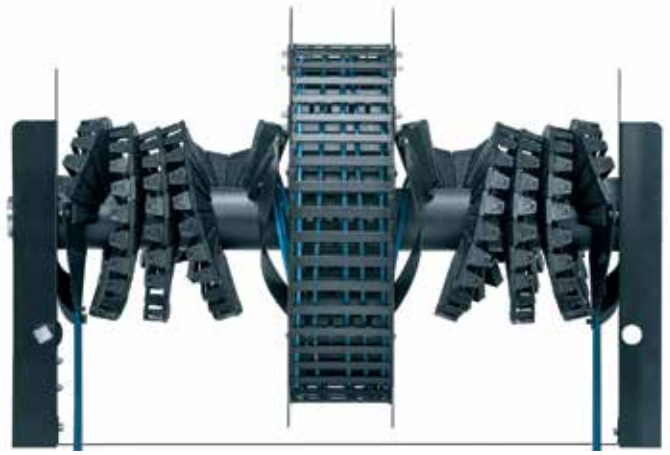
product design award
2013

| Part No. E-Spool with 1 TwisterBand | Part No. E-Spool with 2 TwisterBands | Travel Lengths Max. in. (mm) | Drum Diameter Ø in. (mm) | Cable Length ft. (m) |
|---|---|---|---|---|
| | | | | |
| SP1-600- | SP2-600- | 0 - 157.5 (0 - 4,000) | 23.62 (600) | 25.59 (7.8) |
| SP1-700- | SP2-700- | 0 - 275.6 (0 - 7,000) | 27.56 (700) | 35.43 (10.8) |
| SP1-850- | SP2-850- | 0 - 551.2 (0 - 14,000) | 33.46 (850) | 63.00 (19.2) |



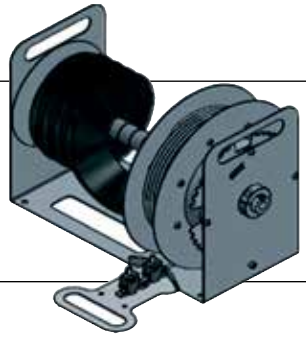
**E-Spool - Standard**
**The alternative to a cable drum. Reduce cable wear and reliably guide various media**
(Illustration shows E-Spool with 2 TwisterBands)

| | | | | |
|---|---|---|---|---|
| SPHD1-600- | SPHD2-600- | 0 - 157.5 (0 - 4,000) | 23.62 (600) | 25.59 (7.8) |
| SPHD1-700- | SPHD2-700- | 0 - 275.6 (0 - 7,000) | 27.56 (700) | 35.43 (10.8) |
| SPHD1-850- | SPHD2-850- | 0 - 551.2 (0 - 14,000) | 33.46 (850) | 63.00 (19.2) |



**E-Spool - Standard**
**The alternative to a cable drum. Reduce cable wear and reliably guide various media**
(Illustration shows E-Spool with 2 TwisterBands)

Small E-Spool and E-Spool for manual operation
For tight installation spaces and low fill rates, the e-spool **SP1-400-4000-01-R-0** is available for up to 13.12 ft. (4 m) extraction. For applications where a cable is pulled out manually there is the **SPC1-300-5000-01-R-0** with locking function for up to 16.41 ft. (5 m) extraction.
**More information ➤ www.igus.com**



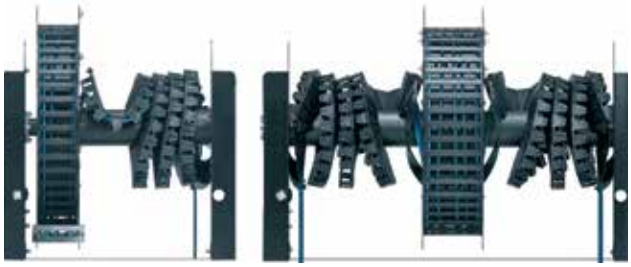
# Special solutions - Movements in all directions
# E-Spool
# Technical Data - Order Example



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## E-Spool - Versions



Modular construction kit in 2 versions: standard and HD.
Two versions of each with different filling capacities and 1 or 2 TwisterBands

### Part number structure

**SP1**-600-4000-02-R-0

- 1 TwisterBand
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

**Standard-System with a single TwisterBand with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right**

### Part number structure

**SP2**-600-4000-02-R-0

- 2 TwisterBands
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

**Standard-System with two TwisterBands with 23.62" (600 mm) drum diameter, and 157.5" (4000 mm) maximum extension length, extension right**

### Part number structure

**SPHD1**-700-7000-02-L-0

- 1 TwisterBand -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

**HD-Version with a single TwisterBand with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left**

### Part number structure

**SPHD2**-700-7000-02-L-0

- 2 TwisterBands -HD
- Drum diameter ø
- Max. extension length
- Extension R / L
- Standard color black

**HD-Version with two TwisterBands with 27.56" (700 mm) drum diameter, and 275.6" (7000 mm) maximum extension length, extension left**

| | |
|---|---|
| Speed, v | max. 3.28 ft/s (1 m/s) |
| Speed, v | max. 6.56 ft/s² (2 m/s²) |
| Lateral speed | max. 3.28 ft/s (1 m/s) |
| Lateral acceleration (radial) | max. 3.28 ft/s² (1 m/s²) |
| Lateral acceleration (axial) | max.0.82 ft/s² (0.25 m/s²) |

**Technical Data**

Details of material properties
➤ **Chapter 1**

# Special solutions - Movements in all directions
# E-Spool
# Filling Guidelines

## Filling guidelines for the E-Spool

In view of the special mechanical stress in an E-Spool, we recommend using igus® Chainflex® cables. We also recommend that you observe the following filling rules:

1. Where possible, cables with a TPE outer jacket should be used for unshielded cables
2. Shielded cables should be from the CFROBOT range.
3. All cables should have an outer diameter of ≤ (17 mm).
4. The max. bending radii of (44 mm) in the inner radius and (77 mm) in the outer radius should be observed
5. Where possible, use separators to protect cables against cross-over and abrasion against other cables. To save space, install the separators alternately in segments positioned one behind the other. Repeat the separators in every 4th segment.
6. Insert cables sorted according to diameter and/or bending radius. Insert thin, small ones in the inside then increasingly larger ones outward
7. Apply strain relief on both ends of the cable. The cable tie wrap node must not be installed in the E-Chain® direction
8. Always install cables in the TwisterBand close to the axis of rotation with space on the outside.
9. Always install cables in the TwisterBand with a slight gap from the axis of rotation

## Installation instructions

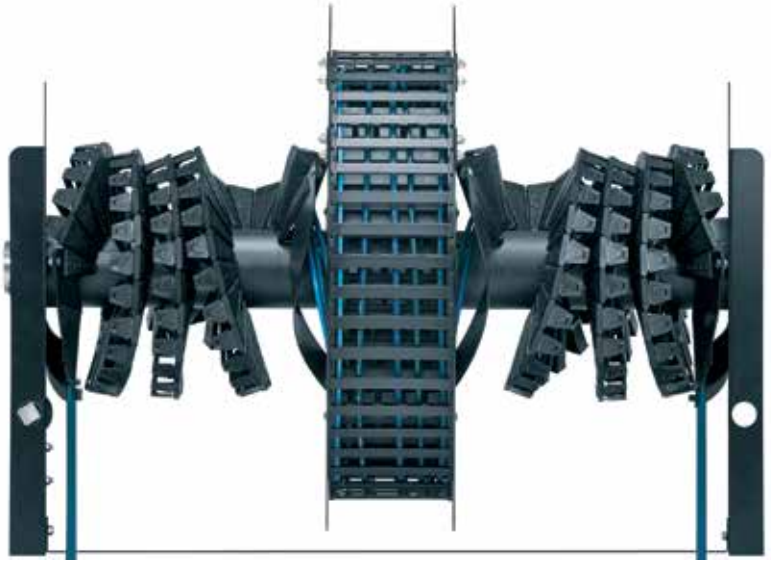
For applications that move horizontally, a smooth surface is needed for the E-Chain® to travel over.

The igus® E-Spool in an extendable winding system.

# Special solutions - Movements in all directions
# E-Spool - Series SP1, SP2
# Product Range

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

E-Spool with 1 TwisterBand

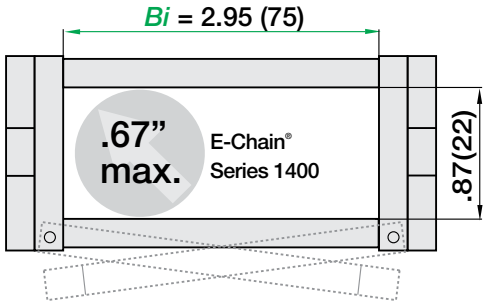


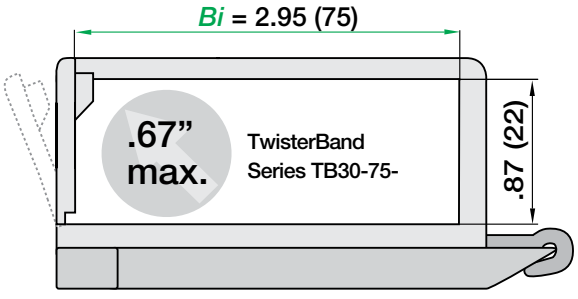
E-Spool with 1 TwisterBand

## E-Spool | with E-Chain® and 1 or 2 TwisterBands - Standard

| Part No. with 1 TwisterBand, extension right | Part No. with 1 TwisterBand, extension left | *Bi* in. (mm) | *hi* in. (mm0 | Travel Length in. (mm) |
|---|---|---|---|---|
| SP1-600-4000-02-**R**-0 | SP1-600-4000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 157.5 (0 - 4000) |
| SP1-700-7000-02-**R**-0 | SP1-700-7000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 275.6 (0 - 7000) |
| SP1-850-14000-002-**R**-0 | SP1-850-14000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 551.2 (0 - 14000) |

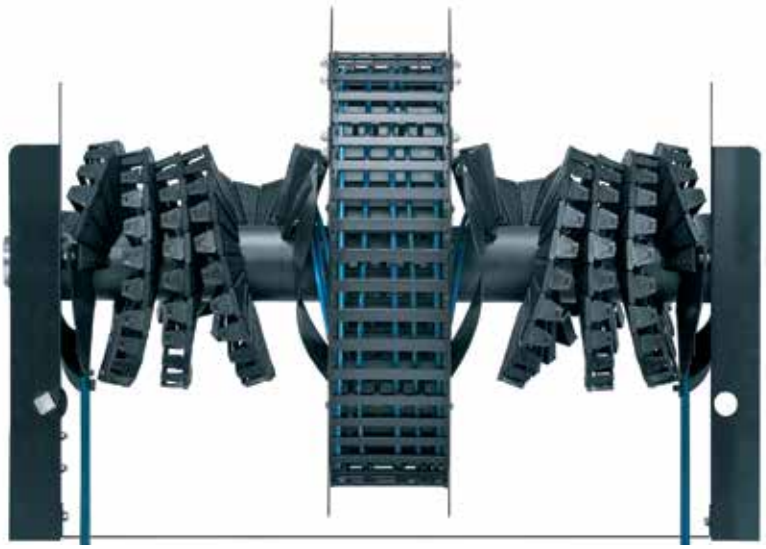
| Part No. with 2 TwisterBand, extension right | Part No. with 2 TwisterBand, extension left | *Bi* in. (mm) | *hi* in. (mm0 | Travel Length in. (mm) |
|---|---|---|---|---|
| SP2-600-4000-02-**R**-0 | SP2-600-4000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 157.5 (0 - 4000) |
| SP2-700-7000-02-**R**-0 | SP2-700-7000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 275.6 (0 - 7000) |
| SP2-850-14000-002-**R**-0 | SP2-850-14000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 551.2 (0 - 14000) |




If the E-Chain® is extracted upwards, igus® recommends the standard E-Spool. If the E-Chain® is extracted downward or horizontally, please consult an igus® engineer about your application. The HD version with a greater retraction force is may be necessary.

E-Spool HD version with 1 TwisterBand

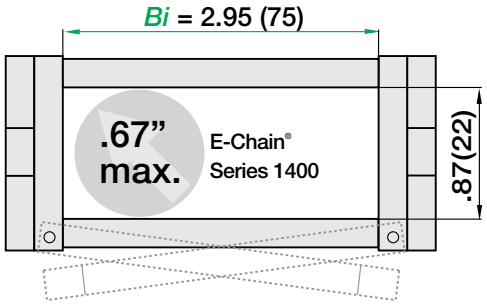


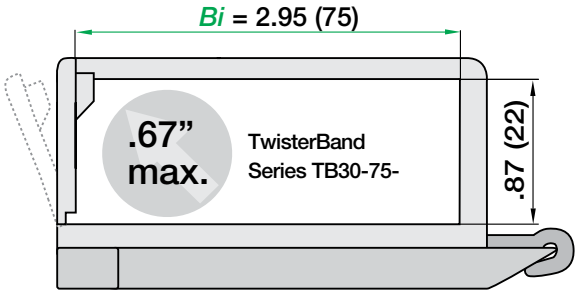
E-Spool HD version with 1 TwisterBand

## E-Spool | with E-Chain® and 1 or 2 TwisterBands - Standard

| Part No. with 1 TwisterBand, extension right | Part No. with 1 TwisterBand, extension left | *Bi* in. (mm) | *hi* in. (mm0 | Travel Length in. (mm) |
|---|---|---|---|---|
| SPHD1-600-4000-02-**R**-0 | SPHD1-600-4000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 157.5 (0 - 4000) |
| SPHD1-700-7000-02-**R**-0 | SPHD1-700-7000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 275.6 (0 - 7000) |
| SPHD1-850-14000-002-**R**-0 | SPHD1-850-14000-02-**L**-0 | 2.95 (75) | .86 (21) | 0 - 551.2 (0 - 14000) |

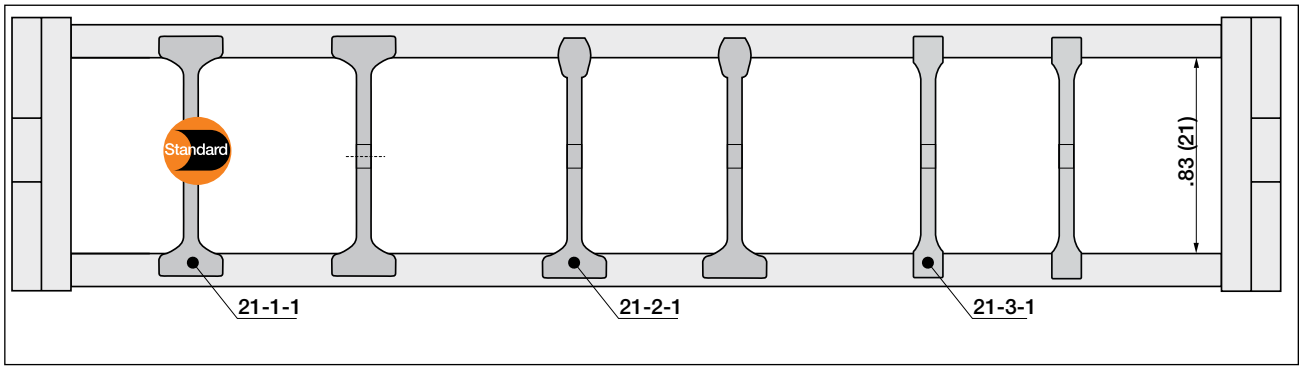
| Part No. with 2 TwisterBand, extension right | Part No. with 2 TwisterBand, extension left | *Bi* in. (mm) | *hi* in. (mm0 | Travel Length in. (mm) |
|---|---|---|---|---|
| SPHD2-600-4000-02-**R**-0 | SPHD2-600-4000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 157.5 (0 - 4000) |
| SPHD2-700-7000-02-**R**-0 | SPHD2-700-7000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 275.6 (0 - 7000) |
| SPHD2-850-14000-002-**R**-0 | SPHD2-850-14000-02-**L**-0 | 4.92 (125) | .86 (21) | 0 - 551.2 (0 - 14000) |



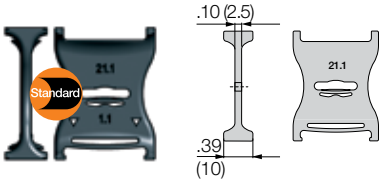




If the E-Chain® is extracted upwards, igus® recommends the standard E-Spool. If the E-Chain® is extracted downward or horizontally, please consult an igus® engineer about your application. The HD version with a greater retraction force is may be necessary.

# Special solutions - Movements in all directions
# E-Spool - Series SP1, SP2
# Interior Separation



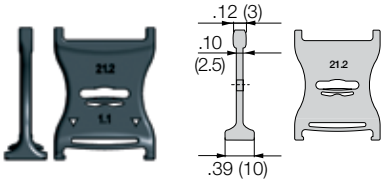

**In the standard configuration separators are assembled every 2nd E-Chain® link**
**Note: No lateral spacing to side link is necessary**




**Separator, wide base**

| | |
|---|---|
| Unassembled | **Part No. 21-1** |
| Assembled | **Part No. 21-1-1** |

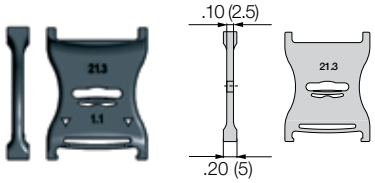
- **Standard separator 21-1 for all applications**
  Separator with wide base for maximum locking strength and safe standing in E-Chains®.




**Separator, narrow head**

| | |
|---|---|
| Unassembled | **Part No. 21-2** |
| Assembled | **Part No. 21-2-1** |

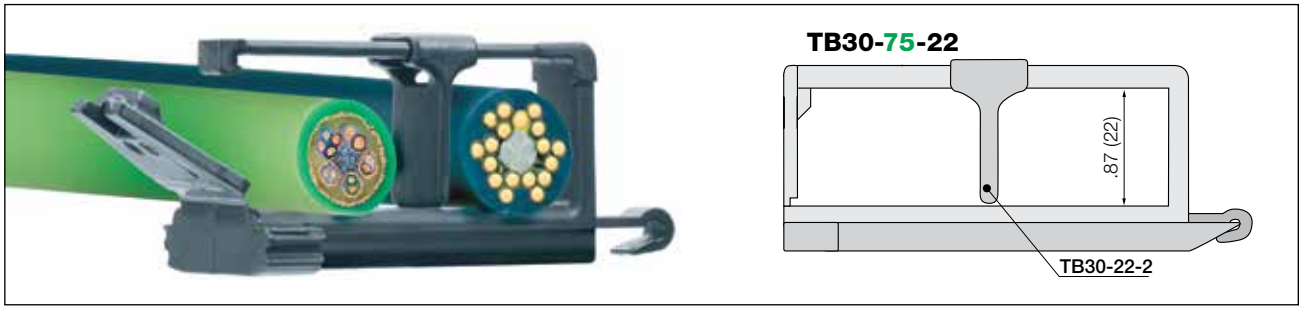
- **Separator 21-2**
  **For even faster installation**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.



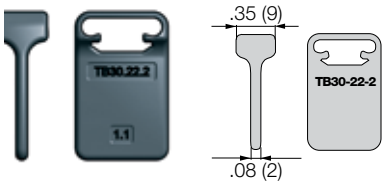

**Separator, narrow base**

| | |
|---|---|
| Unassembled | **Part No. 21-3** |
| Assembled | **Part No. 21-3-1** |

- **Separator 21-3**
  **For many thin cables**
  is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.




**Separators are delivered unassembled. Simply push them onto the crossbar!**




**Separator for TB30-75-22**

| | |
|---|---|
| Unassembled | **Part No. TB30-22-2** |

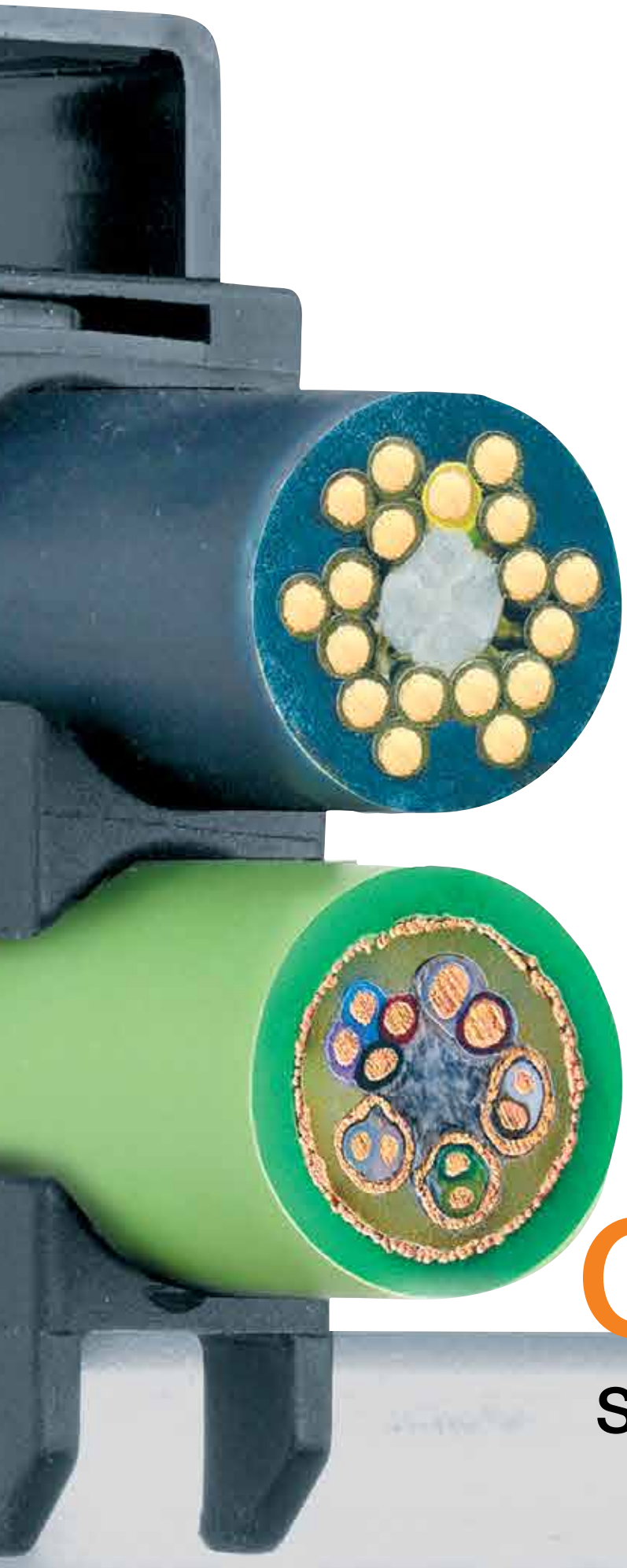
- **Separator TB30-75-22**
  **For TwisterBand**
  Separators - For installation simply open the E-Chain®, insert a cable and push the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

Space-saving solution for a secure vertical movement. E-Spool with 137.8" (3500 mm) extension length in this handling unit. Assembled with igus® Chainflex® CF9 control and CF30 motor cables as well as CFRobot torsion cable and CAPU pneumatic hose

The igus® E-Spool in an extendable winding system of the company Becker Electric Forklift Service in Erftstadt. Vertically extendable up to 32.8 ft. (10 m). The E-Spool supplies the motor of the facility with media and energy cables.

igus



# igus®
# Chainfix
## Strain relief systems

# igus® Chainfix strain relief. Flexible and fast assembled.

Strain relief from igus® is specifically developed for use in E-Chains® and dynamic applications. The combination of Chainflex® cable materials and the plastic strain relief components of igus® Chainfix are designed to achieve long life of the cables and maximum holding power. For a wide variety of applications igus® Chainfix is the best solution in terms of costs and benefits. igus® Chainfix strain relief components are installed in applications around the world.

**Available from stock.** Delivery in 24-48 hours

**3D-CAD files, configurators, PDF ➤ www.igus.com/chainfix**

# Chainfix Strain Relief Overview

## Chainfix clamps and stainless-steel clamps - for maximum pull forces

**CFX**[1)] Single, double, triple clamp standard clamps,
**CFXL**[1)] Single, double, triple clamp housing
Saddle elements - bottom and stacker saddles
Chainfix Multi-Clamps[1)]

[1)] Standard material zinc-coated steel. Stainless-steel (1.4301) version also available.

## Chainfix tiewrap plates - for universal tiewrap, bolted or clip-on

**Option 1A:** Chainfix tiewrap plates as single parts Series 2000 + cable tiewraps
**Option 1B:** Chainfix tiewrap plates as single parts Series 3000 + cable tiewraps

## Chainfix tiewrap plates - for strain relief with cable tiewraps

**Option 2**: Tiewrap plates with clip-on connection for the profile rail
**Option 3:** Integrated strain relief for E2 Tubes - Series R
**Option 4:** Tiewrap plates for fixed crossbars
**Option 5:** Tiewrap plates for opening crossbars

## Chainfix Clips - high pull forces, plug-in

Option1: For all igus® E-Chains® with profile rails, also suitable for assembly in the KMA mounting brackets
Option 2: Clip-on strain relief for crossbars

## Chainfix strain relief separators - with integrated teeth

Separator with integrated strain relief - easy strain relief with tiewrap

## Chainfix strain relief element - outside of the E-Chain® cross section

Easy strain relief for cables, even in enclosed tubes.
With stepped, integrated teeth

## Strain relief Nuggets - for profile rail

Simple and universal cable attachment, for cable diameters of .79" (20 mm) and 1.18" (30 mm)
Clips onto standard profile rail

## Strain relief connector system - modular and customizable

**CFB** plastic strain relief connector system, many cables in a very confined space

# Chainfix Strain Relief Selection Guide

| E-Chain® Series | Clamps | | Clip Profile rail | Clip crossbars | Nugget | Strain relief separator | Strain relief element, stepped |
|---|---|---|---|---|---|---|---|
| | CFX | CFXL | | | | | |
| **E-Z chain®** | | | | | | | |
| E/Z200 | X [1] | – | – | – | – | – | – |
| E/Z26 | X [1] | – | – | – | – | – | – |
| E/Z300 | X [1] | – | – | – | – | – | – |
| **E2/000** | | | | | | | |
| 1400/1500 | X [1] | X [1] | – | – | – | 21-1-Z | – |
| 1450/1480 | X [1] | X [1] | – | – | – | – | – |
| 2400/2500 | X [1] | X [1] | – | – | – | 2020-Z | – |
| 2450/2480 | X [1] | X [1] | – | – | – | 2020-ZR | – |
| 2600/2700 | X | X [1] | X | – | X | 262-Z | CFV-42-C* |
| 2650/2680 | X | X [1] | X | – | X | – | CFV-42-C* |
| 3400/3500 | X | X [1] | X | – | X | 301-Z | CFV-42-C* |
| 3450/3480 | X | X [1] | X | – | X | 34501-Z | CFV-42-C* |
| 255 | – | – | – | – | – | – | – |
| **E2** | | | | | | | |
| R117/118 | X [1] | X [1] | – | – | – | – | – |
| R157/158 | X [1] | X [1] | – | – | – | 1585-01-Z | – |
| R167/168 | X [1] | X [1] | – | – | – | 1685-01-Z | – |
| R48 | X [1] | X [1] | – | – | – | 481-ZR | – |
| R58 | X [1] | X [1] | – | – | – | – | – |
| R68 | X [1] | X [1] | – | – | – | – | – |
| **E4-1** | | | | | | | |
| E4-21 | X [1] | X [1] | – | – | – | T2103-Z | – |
| E4-28/R4-28 | X [1] | X [1] | – | – | – | 28-Z* / 28-ZT* | – |
| E4-32/H4-32/R4-32 | X | X [1] | X | – | X | – | CFV-42-C* |
| E4-42/H4-42/R4-42 | X | X [1] | X | – | X | – | CFV-42-C* |
| E4-56/H4-56/R4-56 | X | X [1] | X | X | X | – | CFV-80-C* |
| E4-80/H4-80/R4-80 | X | X [1] | X | X | X | – | CFV-80-C* |
| E4-112 | X [1] | X [1] | – | X | – | – | – |
| 800 | X [1] | X [1] | – | – | – | – | – |
| 840 | X [1] | – | – | – | – | – | – |
| **E4-1 light** | | | | | | | |
| E4-38L/R4-38L | X | X [1] | X | – | X | – | CFV-42-C* |
| E4-48L/R4-48L | X | X [1] | X | – | X | – | CFV-42-C* |
| **E4/light** | | | | | | | |
| 14040/14140/18840 | X | X [1] | X | X | X | – | – |
| 14240/14340 | X | X [1] | X | – | X | – | – |
| 14550/14650/19050 | X | X [1] | X | X | X | – | – |
| 15050/15150/19850 | X | X [1] | X | X | – | – | – |
| 15250/15350 | X | X [1] | X | – | – | – | – |
| 1640/R1608 | X | X [1] | – | X | – | – | – |
| **E6** | | | | | | | |
| E6-29 | X [1] | X [1] | – | – | – | E6-29-02-Z | – |
| R6-29 | X [1] | X [1] | – | – | – | – | – |
| E6-35 | X [1] | X [1] | – | – | – | E6-35-02-Z | – |
| E6-40 | X | X [1] | X | – | X | E6-40-02-Z | – |
| E6-52 | X | X [1] | X | – | X | – | – |
| R6-52 | X | X [1] | X | – | X | – | – |
| E6-62 | X | X [1] | X | – | X | – | – |
| E6-80L | X | X [1] | X | X | X | – | – |
| E6-80 | X | X [1] | X | X | X | – | – |
| **E6-1** | | | | | | | |
| E61-29 | X [1] | X [1] | – | – | – | E6-29-02-Z | 20XX-ZB |
| **Triflex®** | | | | | | | |
| E-Z Triflex® | X [1] | – | – | – | – | – | – |
| Triflex® | X [1] | – | – | – | – | – | – |

| | Single part 2000 | Single part 3000 | Clip-on for Profile rail | Fixed crossbar | Crossbar | For Triflex® [2] | For E2 E-Tube |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| | 20XX-ZB | – | – | 2050-Z | – | – | – |
| | – | 30XX-ZB | – | – | – | – | – |
| | – | 30XX-ZB | – | – | – | – | – |
| | | | | | | | |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | 2050-Z | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | – | 30XX-ZB | 30XX-ZC | 2050-Z | 2050-Z | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 2050-Z [3] | – | – |
| | – | 30XX-ZB | 30XX-ZC | 30XX-Z | 30XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 30XX-ZS [3] | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | | | | | | | |
| | 20XX-ZB | – | – | – | – | – | – |
| | – | – | – | – | – | – | – |
| | – | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | – | – | – | – | – | – | 5850-Z |
| | – | – | – | – | – | – | 30XX-Z |
| | | | | | | | |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | 2050-Z | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | – | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | – | – | – | – | – |
| | – | – | – | – | – | – | – |
| | | | | | | | |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | | | | | | | |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | – | – | 45XX-ZS | – | – |
| | | | | | | | |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | 20XX-ZB | – | – | – | – | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 2050-Z | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | – | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 3850-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | – | 30XX-ZB | 30XX-ZC | – | 45XX-ZS | – | – |
| | | | | | | | |
| | – | – | – | – | – | – | – |
| | | | | | | | |
| | – | – | – | – | – | E33X-XX-2 | – |
| | – | – | – | – | – | 33X-XX | – |

Recommended strain relief for selected E-Chain®

[1] CFXL clamps must be assembled in front of the E-Chain - They cannot be integrated into the KMA bracket

[2] Located in the Triflex® Section of the catalog

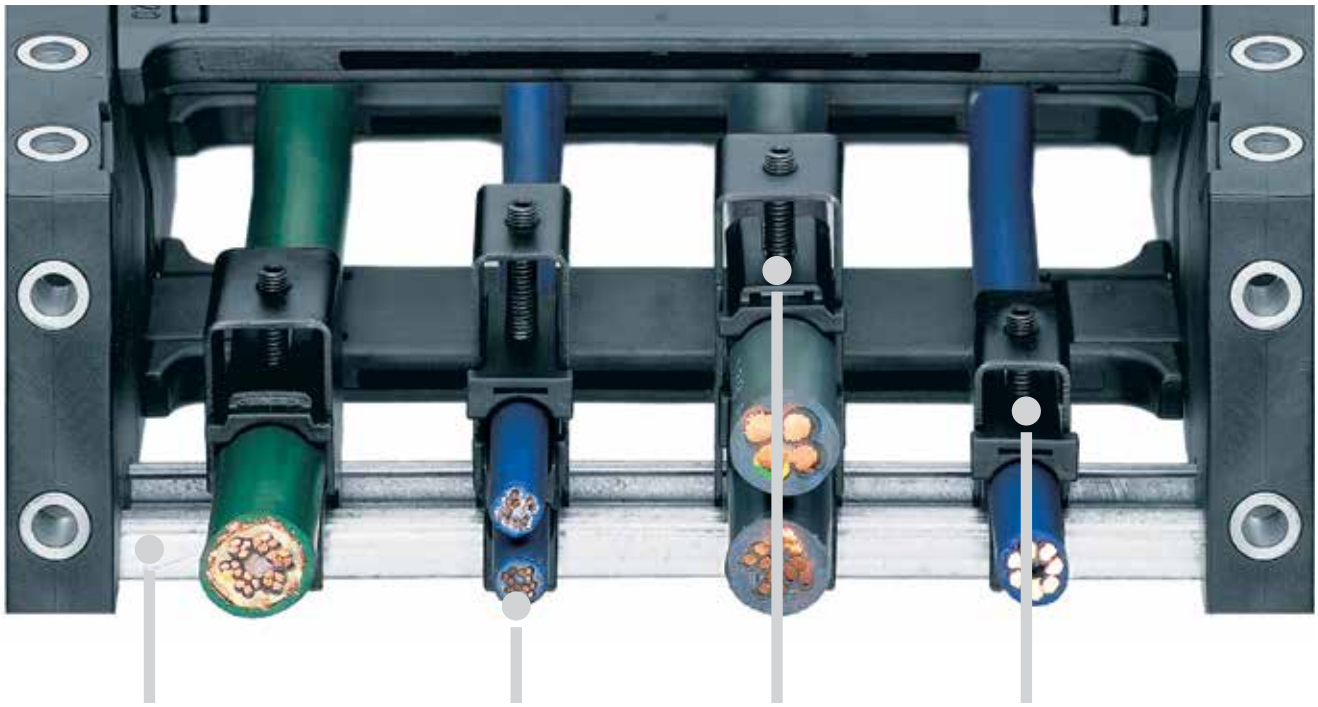
[3] Half E-Tube only

# Chainfix Strain Relief



Telephone 1-800-521-2747
Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec



To be integrated into KMA mounting bracket

For up to three cables over one another

Reduced installation height, space saving

Excellent durability for dynamic applications

**Chainfix clamps - more secure, faster assembled**

- Integration with KMA mounting brackets and profile rail host-option
- Easy to read the part number and lateral marking of the correct installation direction
- Reduced installation height due to optimal housing height (compared to conventional clamps up to 15 mm)
- Space- and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easy fit on the profile rail
- Setscrews, tightened with Allen wrench, for easy installation
- Durability for dynamic applications through improved stacker elements: optimized stacker saddles, held by retaining lugs
- The long contact surface of the stacker elements improves the clamp's stability
- The high rigidity of the stacker elements significantly increases the reliability
- Built-in ribs to the stacker elements - no disconnection of cables from the strain relief
- Optional: CFXL clamps with increased holding power for Heavy-Duty applications
  **NOTE:** (CFXL are always assembled **in front** of the E-Chain® -
  **CAN NOT** be integrated into KMA mounting brackets with profile rail host option!)

## Strain Relief Elements for E-Chains® and E-Tubes with igus® Chainfix Clamps and Saddle Clamp Elements

The Chainfix clamp system design has proven itself as effective, life-prolonging strain relief for igus® E-Chain Systems®.

### Product range and materials

- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw: blank (material 1.4301)
- Stacker elements: bottom saddle and stacker saddle (material igumid G)
- Profile rail: steel (material galvanized steel) or stainless steel (material 1.4301) available

### Features of the igus® Chainfix Clamps

- Improved housing foot clamp for easy fit into profile rail
- Newly developed housing with reduced overall height
- Black housing and setscrews for attractive appearance
- Setscrews, tightened with Allen wrench, for easy installation

### Features of the igus® Saddle Clamps

- Long support surface for improved stability
- Inherently high material rigidity for increased reliability
- Integrated ribbing to keep cables/hoses firmly strain relieved

### Installation Height

If the E-Chain® glides on itself over long travel distances, the screw heads of the strain relief on the fixed end must be at least .39 (10 mm) below the E-Chain® link height. Our clamp housing with setscrews reduces the overall height by up to .59 (15 mm) compared to conventional clamp housings. In the case of unsupported E-Chains®, the strain relief elements may be used with no problems.

**For Series:**

**System E2/000**
- 2400/2500/2450/2480
- 2600/2700/2650/2680
- 3400/3500/3450/3480

**System E4-1**
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112

**System E4-1/light**
- E4-38L/R4-38L
- E4-48L/R4-48L

**System E4/light**
- 14040/14140/R18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

**System E6**
- E6-40
- E6-52 / R6-52
- E6-62
- E6-80L
- E6-80

### Please note:

- Ideally, the cables/hoses should be strain relieved at both ends of the E-Chain®. At the very least, they must be strain relieved at the moving end of the E-Chain®.

- When using Chainfix clamps on profile rail in the mounting bracket for the Series:
  E4-32/H4-32/R4-32,
  280/290/ R770,
  2828/2928/R7728,
  28/29/R77,
  a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index "**K**" = Example: **Part No. CFX12-1K**

*Add and "M" to the end of the part number for this series

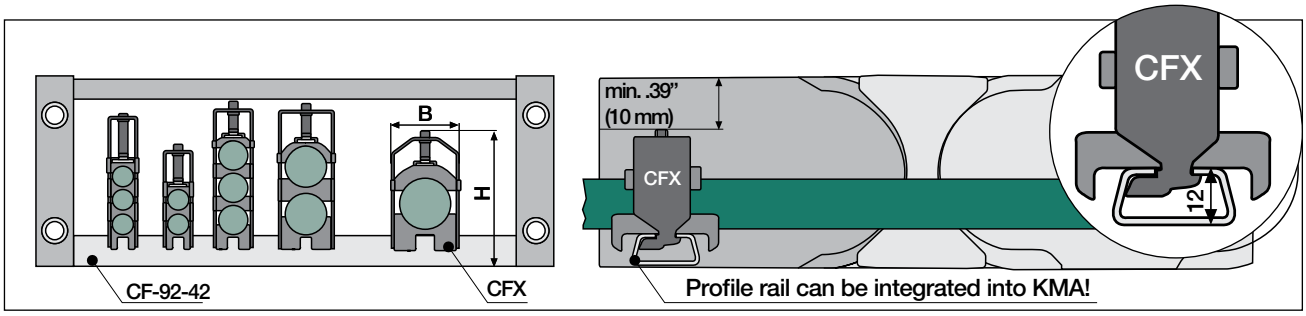
**CFX - Chainfix housing with reduced height**

**KMA mounting bracket with integrated profile rail and Chainfix clamps**

**Improved housing foot clamp for easy fit into profile rail**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief
# CFX Clamps
# For use inside the KMA Bracket




The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights.

Single clamp housing,
including top/bottom saddle clamps

| Part No. Steel | Part No. Stainless Steel | For cable diameters in. | (ø mm) | B+2 | H |
|---|---|---|---|---|---|
| CFX12-1 | CFX12-1E | .24-.47 | (6 – 12) | .63 (16) | 1.57 (40) |
| CFX14-1 | CFX14-1E | .47-.55 | (12 – 14) | .71 (18) | 1.97 (50) |
| CFX16-1 | CFX16-1E | .55-.63 | (14 – 16) | .79 (20) | 2.05 (52) |
| CFX18-1 | CFX18-1E | .63-.71 | (16 – 18) | .87 (22) | 2.13 (54) |
| CFX20-1 | CFX20-1E | .71-.79 | (18 – 20) | .94 (24) | 2.20 (56) |
| CFX22-1 | CFX22-1E | .79-.87 | (20 – 22) | 1.02 (26) | 2.28 (58) |
| CFX26-1 | CFX26-1E | .87-1.02 | (22 – 26) | 1.18 (30) | 2.64 (67) |
| CFX30-1 | CFX30-1E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 2.80 (71) |
| CFX34-1 | CFX34-1E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 2.95 (75) |
| CFX38-1 | CFX38-1E | 1.34-1.50 | (34 – 38) | 1.65 (42) | 3.11 (79) |
| CFX42-1 | CFX42-1E | 1.50-1.65 | (38 – 42) | 1.81 (46) | 3.27 (83) |

Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability

Double clamp housing,
including top/bottom saddle clamps
and one stacker saddle clamp

| Part No. Steel | Part No. Stainless Steel | For cable diameters in. | (mm) | B+2 | H |
|---|---|---|---|---|---|
| CFX12-2 | CFX12-2E | .24-.47 | (6 – 12) | .63 (16) | 2.83 (72) |
| CFX14-2 | CFX14-2E | .47-.55 | (12 – 14) | .71 (18) | 2.91 (74) |
| CFX16-2 | CFX16-2E | .55-.63 | (14 – 16) | .79 (20) | 3.07 (78) |
| CFX18-2 | CFX18-2E | .63-.71 | (16 – 18) | .87 (22) | 3.23 (82) |
| CFX20-2 | CFX20-2E | .71-.79 | (18 – 20) | .94 (24) | 3.38 (86) |
| CFX22-2 | CFX22-2E | .79-.87 | (20 – 22) | 1.02 (26) | 3.54 (90) |
| CFX26-2 | CFX26-2E | .87-1.02 | (22 – 26) | 1.18 (30) | 4.29 (109) |
| CFX30-2 | CFX30-2E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 4.61 (117) |
| CFX34-2 | CFX34-2E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 4.92 (125) |

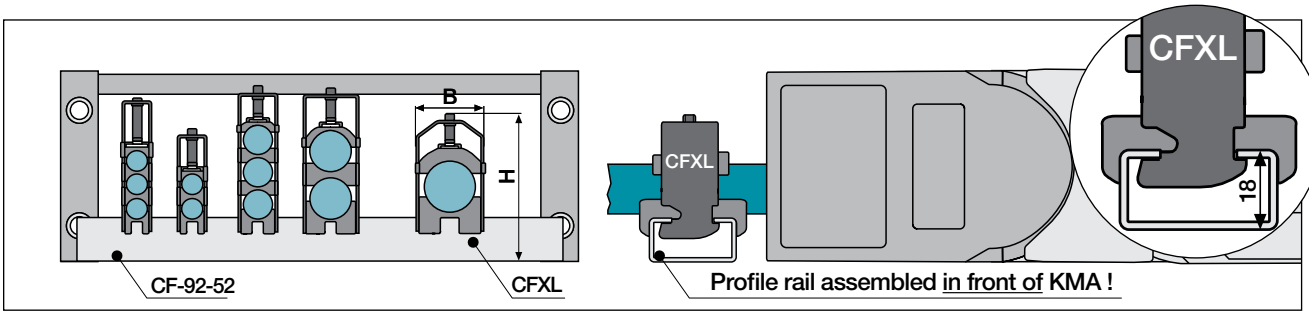
Triple clamp housing,
including top/bottom
saddle clamps and two
stacker saddle clamps

| Part No. Steel | For cable diameters in. | (ø mm) | B+2 | H |
|---|---|---|---|---|
| CFX12-3 | .24-.47 | (6 – 12) | .63 (16) | 3.94 (100) |
| CFX14-3 | .47-.55 | (12 – 14) | .71 (18) | 3.78 (96) |
| CFX16-3 | .55-.63 | (14 – 16) | .79 (20) | 4.02 (102) |
| CFX18-3 | .63-.71 | (16 – 18) | .87 (22) | 4.25 (108) |
| CFX20-3 | .71-.79 | (18 – 20) | .94 (24) | 4.49 (114) |
| CFX22-3 | .79-.87 | (20 – 22) | 1.02 (26) | 4.72 (120) |

Suitable profile rails for CFX clamps **Part No. CF-92-42KMA ➤ page 10.13**

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

# Chainfix Strain Relief
# CFXL Clamps
# For use outside the KMA Bracket




The dimensions given for H in the tables are based on the maximum cable diameter. Cables with smaller diameters may result in lower overall clamp housing heights. Tightening torque 1.5 Nm for CFXL clamps

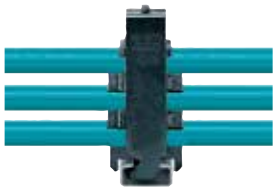
Single clamp housing, including top/bottom saddle clamps

**CFXL** - clamps with wide base for increased holding power
Suitable for profile rails CF-92-52-XX - profile rail assembled in front of KMA !
CAN NOT be integrated into the KMA mounting bracket!

| Part No. Steel | Part No. Stainless Steel | For cable diameters in. | For cable diameters (ø mm) | B+2 | H |
|---|---|---|---|---|---|
| CFXL12-1 | CFXL12-1E | .24-.47 | (6 – 12) | .63 (16) | 2.36 (60) |
| CFXL14-1 | CFXL14-1E | .47-.55 | (12 – 14) | .71 (18) | 2.20 (56) |
| CFXL16-1 | CFXL16-1E | .55-.63 | (14 – 16) | .79 (20) | 2.28 (58) |
| CFXL18-1 | CFXL18-1E | .63-.71 | (16 – 18) | .87 (22) | 2.36 (60) |
| CFXL20-1 | CFXL20-1E | .71-.79 | (18 – 20) | .94 (24) | 2.44 (62) |
| CFXL22-1 | CFXL22-1E | .79-.87 | (20 – 22) | 1.02 (26) | 2.52 (64) |
| CFXL26-1 | CFXL26-1E | .87-1.02 | (22 – 26) | 1.18 (30) | 2.87 (73) |
| CFXL30-1 | CFXL30-1E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 3.03 (77) |
| CFXL34-1 | CFXL34-1E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 3.19 (81) |
| CFXL38-1 | CFXL38-1E | 1.34-1.50 | (34 – 38) | 1.65 (42) | 3.35 (85) |
| CFXL42-1 | CFXL42-1E | 1.50-1.65 | (38 – 42) | 1.81 (46) | 3.50 (89) |

Ribbed strain relief saddle clamps withstands increased pull forces for long-term durability

Double clamp housing, including top/bottom saddle clamps and one stacker saddle clamp



Triple clamp housing, including top/bottom saddle clamps and two stacker saddle clamps

| Part No. Steel | Part No. Stainless Steel | For cable diameters in. | For cable diameters (ø mm) | B+2 | H |
|---|---|---|---|---|---|
| CFXL12-2 | CFXL12-2E | .24-.47 | (6 – 12) | .63 (16) | 3.07 (78) |
| CFXL14-2 | CFXL14-2E | .47-.55 | (12 – 14) | .71 (18) | 3.15 (80) |
| CFXL16-2 | CFXL16-2E | .55-.63 | (14 – 16) | .79 (20) | 3.31 (84) |
| CFXL18-2 | CFXL18-2E | .63-.71 | (16 – 18) | .87 (22) | 3.39 (86) |
| CFXL20-2 | CFXL20-2E | .71-.79 | (18 – 20) | .94 (24) | 3.62 (92) |
| CFXL22-2 | CFXL22-2E | .79-.87 | (20 – 22) | 1.02 (26) | 3.39 (86) |
| CFXL26-2 | CFXL26-2E | .87-1.02 | (22 – 26) | 1.18 (30) | 4.53 (115) |
| CFXL30-2 | CFXL30-2E | 1.02-1.18 | (26 – 30) | 1.34 (34) | 4.84 (123) |
| CFXL34-2 | CFXL34-2E | 1.18-1.34 | (30 – 34) | 1.50 (38) | 5.16 (131) |

| Part No. Steel | For cable diameters in. | For cable diameters (ø mm) | B+2 | H |
|---|---|---|---|---|
| CFXL12-3 | .24-.47 | (6 – 12) | .63 (16) | 4.17 (106) |
| CFXL14-3 | .47-.55 | (12 – 14) | .71 (18) | 4.02 (102) |
| CFXL16-3 | .55-.63 | (14 – 16) | .79 (20) | 4.25 (108) |
| CFXL18-3 | .63-.71 | (16 – 18) | .87 (22) | 4.49 (114) |
| CFXL20-3 | .71-.79 | (18 – 20) | .94 (24) | 4.72 (120) |
| CFXL22-3 | .79-.87 | (20 – 22) | 1.02 (26) | 4.96 (126) |

Suitable profile rails for CFXL clamps **Part No. CF-92-52G ➤ page 10.13**

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

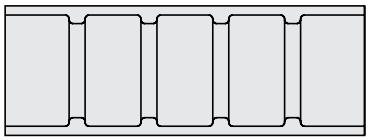
# Chainfix Strain Relief Clamps - Single Parts

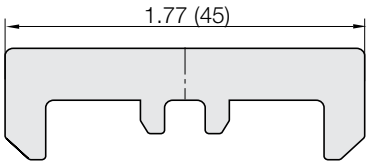
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Characteristics of igus® Chainfix clamps - stacker elements

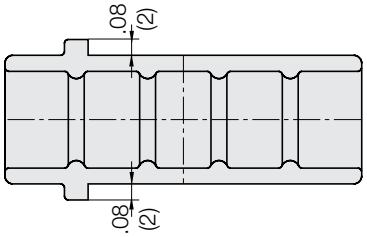
- Built-in ribs for security of cables in the strain relief
- Optimized stacker saddles, retained by ① locking spring and with ② spring grooves for a simplified and precise installation
- Conventional stacker saddles
- Long contact surface improves the clamp's stability
- More secure due to high stiffness
- Suitable for CFX and CFXL clamps

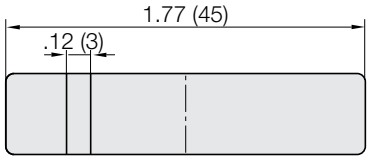
**CGXX** | Bottom saddles to slide into the clamp housing as single part



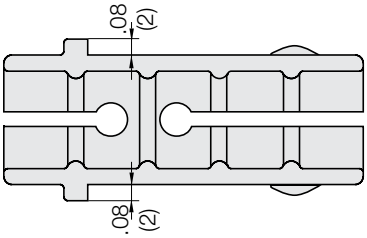


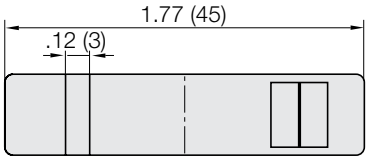
**CDXX** | Conventional stacker saddles for all for all double and triple clamps as single part

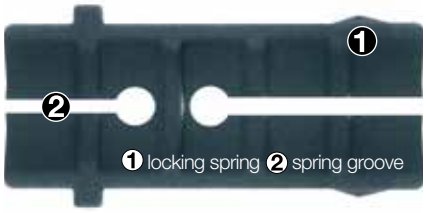


**CD-XX-C** | Optimized stacker saddles for all double and triple clamps as single part




| Part No. Clamp | CGXX bottom saddle for singles | CDXX stacker saddle for doubles & triples | CD-XX-C optimized stacker saddle for doubles & triples | Diameter | |
|---|---|---|---|---|---|
| | | | | in. | (mm) |
| CFX / CFXL12-1 | CG12 | CD12 | – | .24-.47 | (6 – 12) |
| CFX / CFXL14-1 | CG14 | CD14 | CD-14-C | .47-.55 | (12 – 14) |
| CFX / CFXL16-1 | CG16 | CD16 | CD-16-C | .55-.63 | (14 – 16) |
| CFX / CFXL18-1 | CG18 | CD18 | CD-18-C | .63-.71 | (16 – 18) |
| CFX / CFXL20-1 | CG20 | CD20 | CD-20-C | .71-.79 | (18 – 20) |
| CFX / CFXL22-1 | CG22 | CD22 | CD-22-C | .79-.87 | (20 – 22) |
| CFX / CFXL26-1 | CG26 | CD26 | CD-26-C | .87-1.02 | (22 – 26) |
| CFX / CFXL30-1 | CG30 | CD30 | CD-30-C | 1.02 -1.18 | (26 – 30) |
| CFX / CFXL34-1 | CG34 | CD34 | CD-34-C | 1.18 -1.34 | (30 – 34) |
| CFX / CFXL38-1 | CG38 | – | – | 1.34-1.50 | (34 – 38) |
| CFX / CFXL42-1 | CG42 | – | – | 1.50-1.65 | (38 – 42) |

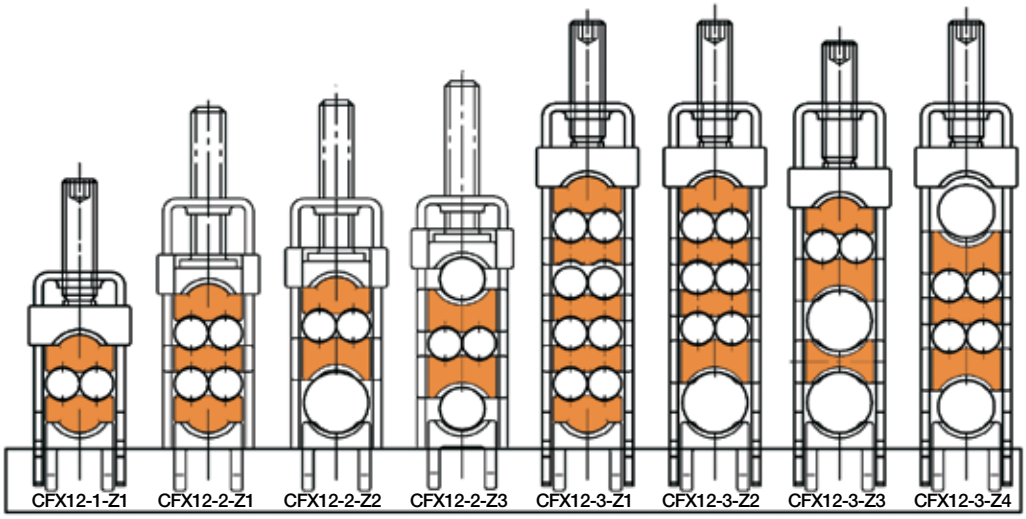
**Please note:** When using chainfix clamps on profile rail in the mounting bracket for Series E4-32/H4-32/R4-32, 280/290/ R770, 2828/2928/R7728, 28/29/R77 a shortened bottom saddle has to be used.
The Part No. for this is "**K**", Example: **Part No. CFX12-1K**

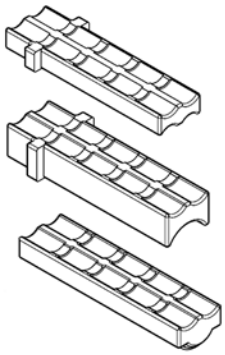
# Chainfix Strain Relief Multi-Clamps

## Characteristics of igus® Chainfix Multi-Clamps

The proven Chainfix clamps now even more versatile. New parts offer numberless solutions to assemble.

- New universal strain relief
- Save assembly time and space
- Compact and modular
- For small outer diameters
- Cost-effective



New universal saddle clamps

| Part No. | Part No. trays as single parts | | | | For cables Max. Diameter | |
|---|---|---|---|---|---|---|
| | CDA-4/4/8 | CD-4/4 | CD-4/4-8 | CD-12 | in. | (mm) |
| CFX12-1-Z1 | **X** (2-piece) | – | – | – | .24 | (6) |
| CFX12-2-Z1 | **X** (2-piece) | **X** (1-piece) | – | – | .24 | (6) |
| CFX12-2-Z2 | **X** (1-piece) | – | **X** (1-piece) | – | .24 + .47 | (6 + 12) |
| CFX12-2-Z3 | – | – | **X** (2-piece) | – | .24 + .31 | (6 + 8) |
| CFX12-3-Z1 | **X** (2-piece) | **X** (3-piece) | – | – | .24 | (6) |
| CFX12-3-Z2 | **X** (1-piece) | **X** (2-piece) | **X** (1-piece) | – | .24 + .47 | (6 + 12) |
| CFX12-3-Z3 | **X** (1-piece) | – | **X** (1-piece) | **X** (1-piece) | .24 + .47 | (6 + 12) |
| CFX12-3-Z4 | – | **X** (1-piece) | **X** (2-piece) | – | .24 + .39 | (6 + 10) |

For stainless-steel version please insert index SS Example: **Part No. CFX-12-3-Z1SS**

Standard material steel zinc-coated

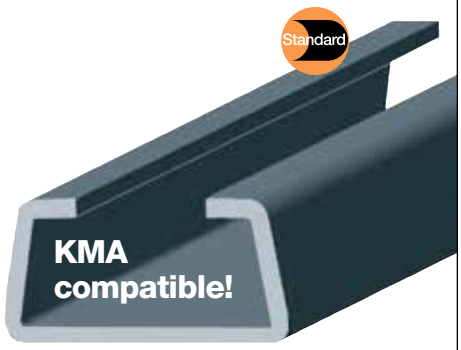
PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief Profile Rails

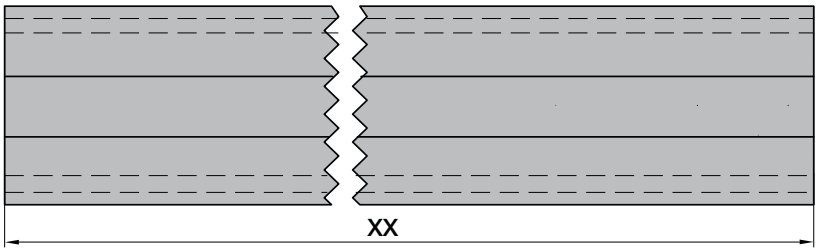
igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

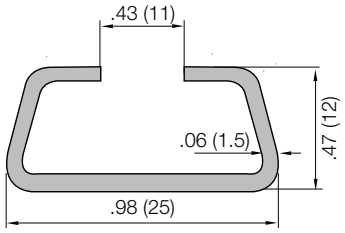
## Standard Profile rails Part No. CF-92-42KMA

- For all igus® **CFX** clamps and KMA- mounting brackets with profile rail host-option
- Standard material: galvanized steel **Part No. CF-92-42KMA**
- Also available as stainless steel version (Material stainless steel: 1.4301)
  please add Index SS , example: **Part No. CF-92-42KMASS**




**Standard profile rail Part No. CF-92-42KMA** For conventional applications
Can be integrated into KMA with profile rail host-option!



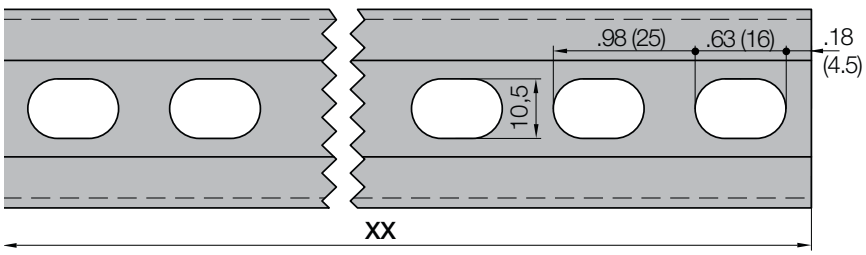



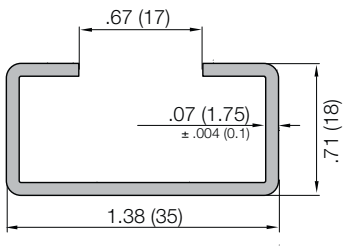

## Optional - **For Heavy-Duty applications**

### Profile rail Part No. CF-92-52G

- For all igus® **CFXL** clamps
- With increased holding power - even for harsh applications
- Standard material: galvanized steel **Part No. CF-92-52G**
- Also available as stainless steel version (Material stainless steel: 1.4301)
  please add Index SS , example: **Part No. CF-92-52GSS**

**Profile rail Part No. CF-92-52G** With increased holding power for harsh conditions
Assembly in front of the E-Chain® - CAN NOT be integrated into KMA mounting bracket!



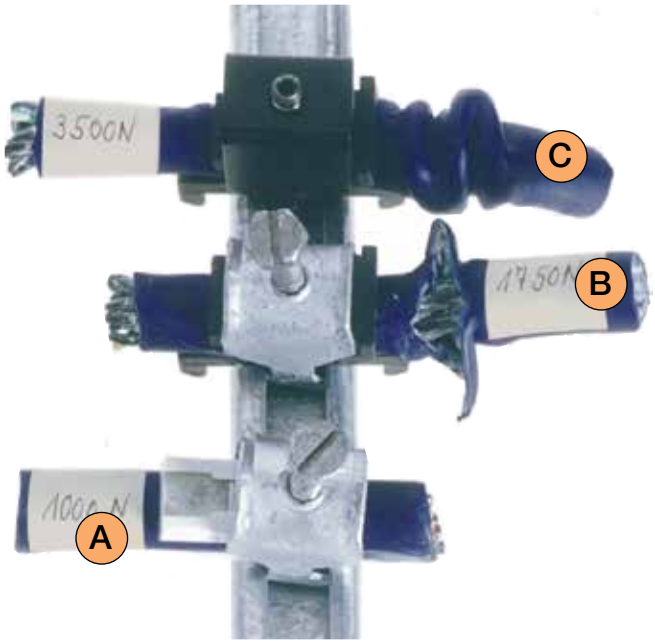



# Chainfix Strain Relief Testing Methods

## Three times higher tensile strength than other industry-standard clamps

### We have tested three different strain relief types:

**A.** Standard, hot-dipped galvanized steel strain relief clamp with single and double impact-resistant polymer saddle clamp elements (Part No. CF14-1-Z, standard elements)
**B.** Standard strain relief housings (as used in A) with igumid G clamp saddles (Part No. CFY14-1)
**C.** igus® Chainfix strain relief elements (Part No. CFX14-1)




### Results:

Strain relief element **"A"** saddle clamps loosen at 225 lbs (1,000 N) of pull force. The resulting diagonal position of the saddle clamp distorts the screw.

Strain relief element **"B"** saddle clamps loosen at 393 lbs (1,750 N) of pull force. The improved igumid G saddle clamps attempt to hold the cable, causing the outer jacket to "peel."

Strain relief element **"C"**,igus® new Chainfix system, saddle clamps loosen and slant 5° at 393 lbs (1,750 N). At 562 lbs (2,500 N) of pull force, the cable jacket bunches up behind the clamp and, at 787 lbs (3,500 N) of pull force, the clamps loosen completely and the cable becomes inoperative.

### Conclusion:

**The tensile strength of the "Chainfix" line of strain relief elements developed by igus® is more than three times higher than the tensile strength of standard strain relief elements.**

## Test example with cable diameter .41" (10.5 mm)

**Tiewrap Plate 2070-ZB** with one cable tie
**Result:** tensile force 65 lbs (290 N)

**Chainfix Clip** CFC-12-M
**Result:** tensile force 79 lbs (350 N)

## Pull Force Test for igus Tiewrap Plates with Cable Tiewraps

**Results:**
Two tiewraps are more stable than one tiewrap. If one cable tiewrap is used, **the breaking force is approximately 79 lbs (350 N)**. If the cable is secured with **two** cable tiewraps, **the breaking force increases to 187 lbs (830 N)**, **i.e. pull force resistance more than doubles when using two cable tiewraps.**

**Technical data:**

| | |
|---|---|
| Tiewrap plates: | 2100-ZB/3100-ZB |
| Cable: | CF130-07-12 |
| Cable tiewrap: | CFB-001 |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief Tiewrap Plates

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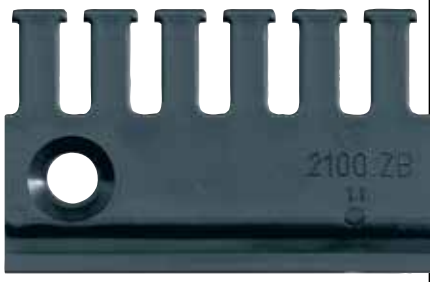
QuickSpec: http://www.igus.com/quickspec

## Characteristics of igus® chainfix tiewrap plate Series 2000

**Option 1A:** Tiewrap plate as single part

- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®




**For Series:**

**E-Z Chain®**
- E200/Z200

**System E2/000**
- 1400/1500/1450/1480
- 2400/2500/2450/2480
- 255

**System E2 Tubes**
- R117/R118
- R48

**System E4-1**
- E4-21
- E4-28

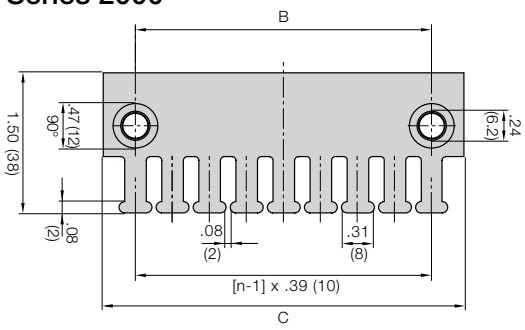
**System E6**
- E6-29/R6-29
- E6-35
- E6-40

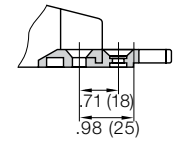
**System E6-1**
- E61-29

## Tiewrap plates as an individual part

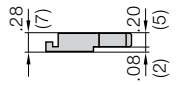
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

### Series 2000




Shown assembled




Single tiewrap plate

| Tiewrap Plates | n Number of Teeth | Dimension C | Dimension B | |
|---|---|---|---|---|
| **2020-ZB** | 3 | 1.18 (30) | .59 (15) | |
| **2030-ZB** | 4 | 1.57 (40) | .79 (20) | |
| **2040-ZB** | 5 | 1.97 (50) | 1.18 (30) | |
| **2050-ZB** | 6 | 2.36 (60) | 1.57 (40) | |
| **2070-ZB** | 8 | 3.15 (80) | 2.36 (60) | |
| **2090-ZB** | 9 | 3.54 (90) | 2.76 (70) | = 2030-ZB + 2040-ZB combined |
| **2100-ZB** | 10 | 3.94 (100) | 3.15 (80) | |
| **2125-ZB** | 12 | 4.72 (120) | 3.94 (100) | = 2050-ZB x 2 pieces combined |

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 2020-ZBKMA**

## Cable tiewraps as individual parts

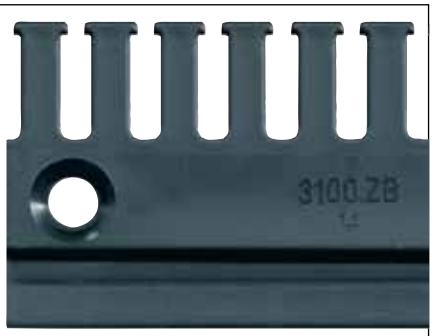
| Cable tiewraps 100 pieces/bag | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

# Chainfix Strain Relief Tiewrap Plates

## Characteristics of igus® chainfix tiewrap plate Series 3000

**Option 1B:** Tiewrap plate as single part

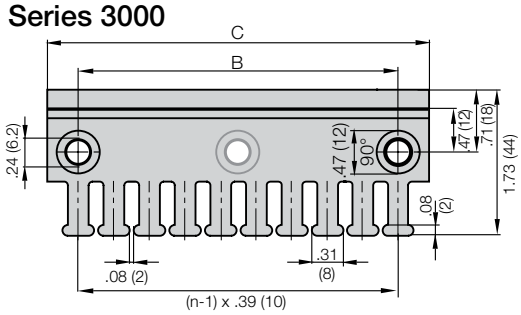
- Available as individual component
- Screwed on KMA* with profile rail (*polymer metal mounting bracket)
- Can be stacked onto the mounting bracket
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®

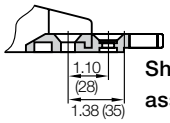



## Tiewrap plates as an individual part

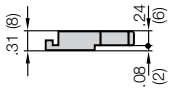
Available as an individual component or can be fixed onto a mounting bracket with the use of a profile rail.

### Series 3000




Shown assembled




Single tiewrap plate

| Tiewrap Plate | n Number of Teeth | C Overall Width in. (mm) | B Bore Width in. (mm) | Center Bore |
|---|---|---|---|---|
| **3050-ZB** | 5 | 1.97 (50) | 1.18 (30) | no |
| **3075-ZB** | 7 | 2.95 (75) | 2.16 (55) | no |
| **3100-ZB** | 10 | 3.94 (100) | 3.15 (80) | no |
| **3115-ZB** | 11 | 4.53 (115) | 3.74 (95) | no |
| **3125-ZB** | 12 | 4.92 (125) | 4.13 (105) | no |
| **3150-ZB** | 15 | 5.91 (150) | 5.12 (130) | no |
| **3175-ZB** | 17 | 6.89 (175) | 6.10 (155) | no |
| **3200-ZB** | 20 | 7.87 (200) | 7.09 (180) | yes |
| **3225-ZB** | 22 | 8.86 (225) | 8.07 (205) | yes |
| **3250-ZB** | 25 | 9.84 (250) | 9.06 (230) | yes |

If used with KMA brackets with profile rail please add “KMA” to the end of the part number.
**Example: 3050-ZBKMA**

**For Series:**

**E-Z Chain®**
- E26/Z26
- E300/Z300

**System E2/000**
- 2600/2700/2650/2680
- 3400/3500/3450/3480

**System E4-1**
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112
- 800
- 840

**System E4-1 Light**
- E4-38L/R4-38L
- E4-48L/R4-48L

**System E4/light**
- 14040/14140/R18840
- 15050/15150/R19850
- 14240/14340
- 1640

**System E6**
- E6-52/R6-52
- E6-62
- E6-80L / E6-80

## Cable tiewraps as individual parts

| Cable tiewraps 100 pieces/bag | Width x Length | | Maximum Ø | | Tensile Strength | |
|---|---|---|---|---|---|---|
| | in. | (mm) | in. | (mm) | lbs | (N) |
| **CFB-001** | .19 x 5.91 | (4.8 x 150) | 1.42 | (36) | 50 | (222) |

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief Tiewrap Plates

igus® E-Chain System®
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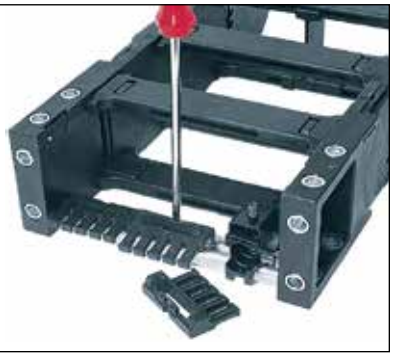
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Characteristics of igus® Chainfix tiewrap plate
**Option 2:** With clip-on connection for the profile rail

- Can be clipped onto KMA profile rail
- Easy to assemble without any screws
- Easy to remove with screwdriver
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®



## Option 2 - Tiewrap plate for fixed crossbars

| Part No. | Number of Teeth | Width of Strain Relief | |
|---|---|---|---|
| | | in. | (mm) |
| 3050-ZC | 5 | 1.97 | (50) |
| 3075-ZC | 7 | 2.95 | (75) |

**For Series:**

| Tiewrap plates for profile rail |
|---|
| For all mounting brackets |
| with profile rail option |

## Characteristics of igus® Chainfix tiewrap plate
**Option 3:** integrated strain relief for E2 E-Tubes - Series R

- Strain relief is hidden within the E-Tube
- Easy to assemble without any screws
- Can be used at the end of the E-Chain® or within electrical cabinets
- Accessory for igus® E-Chain Systems®

## Option 3 - Tiewrap plate for E2 E-Tubes Series R

| Part No. fixed crossbar | Width | | Number of teeth | For Series |
|---|---|---|---|---|
| | in. | (mm) | | |
| 3050-Z | 1.97 | (50) | 5 | R68 |
| 3075-Z | 2.95 | (75) | 7 | R68 |
| 5850-Z | 1.81 | (46) | 4 | R58 |

**For Series:**

| E-Tubes Series R |
|---|
| ● R58 |
| ● R68 |

# Chainfix Strain Relief Tiewrap Plates

Characteristics of igus® Chainfix tiewrap plates
**Option 4:** for fixed crossbars
**Option 5:** for opening crossbars

- Can be fitted to fixed and opening crossbars
- For use with many harnessed cables
- Strain relief on two levels
- Easy to assemble without any screws
- Accessory for igus® E-Chain Systems®

## Option 4 - Tiewrap plate for fixed crossbars

| Part No. fixed crossbar | Width in. | Width (mm) | Number of teeth | For Series |
|---|---|---|---|---|
| 2050-Z | 2.36 | (60) | 6 | 240/250, 26/27, E/Z200, 2400/2500, 2600/2700 |
| 3050-Z | 1.97 | (50) | 5 | 340/350, 3400/3500 |
| 3075-Z | 2.91 | (74) | 7 | 340/350, 3400/3500 |

For Series:

**E-Z Chain®**
- E200/Z200

**System E2 medium**
- 240/250
- 26/27
- 340/350

**System E2/000**
- 2600/2700/2650/2680
- 3400/3500/3450/3480

## Option 5 - Tiewrap plate for opening crossbars

| Part No. opening crossbar | Width in. | Width (mm) | Number of teeth | For Series |
|---|---|---|---|---|
| 2050-Z | 2.36 | (60) | 6 | 220, 2650, E4-28, E6-52 |
| 3035-ZS | 1.38 | (35) | 3 | 340/350, 3400/3500 |
| 3050-ZS | 1.97 | (50) | 5 | 340/350, 3400/3500 |
| 3075-ZS | 2.91 | (74) | 7 | 340/350, 3400/3500 |
| 3850-ZS | 1.89 | (48) | 5 | 280/290/R770, 380/390/R780, 2828/2929/R7728, 3838/3938/R7838 E4/H4/R4.32, E4/H4/R4.42, 14240/14340, 15250/15350, E6-62 |
| 4550-ZS | 1.89 | (48) | 5 | 400/410/R880, 4040/4140/R8840, 5050/5150/R9850 E4/H4/R4.56, E4/H4/R4.80, E4/H4/R4.112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E6-80L, E6-80, 1640/1608 |
| 4575-ZS | 2.91 | (74) | 7 | 400/410/R880, 4040/4140/R8840, 5050/5150/R9850 E4/H4/R4.56, E4/H4/R4.80, E4/H4/R4.112, 14040/14140/R18840, 14550/14650/19050 15050/15150/R19850, E6-80L, E6-80, 1640/1608 |

For Series:

**System E4-1**
- E4-28
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112

**System E4/light**
- 14040/14140/R18840
- 15050/15150/R19850
- 14240/14340
- 1640

**System E4/4**
- 2828/2928/R7728
- 3838/3938/R7838
- 4040/4140/R8840
- 5050/5150/R9850

**System E4/00**
- 220
- 280/290/R770
- 380/390/R780
- 400/410/R880

**System E6**
- E6-52/R6-52
- E6-62
- E6-80L / E6-80

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief
# Chainfix Clip

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email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Characteristics of igus® Chainfix clips

**Option 1: Modular clip-on strain relief for the profile rail**

- Available for all igus® E-Chain Systems® with profile rails
- Also suitable for assembly in the KMA mounting brackets
- Series of clamps and bottom parts made of plastic for cable diameters ranging from .16" - .94" (4 to 24 mm)
- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces with single-layer installation, decreases with each layer

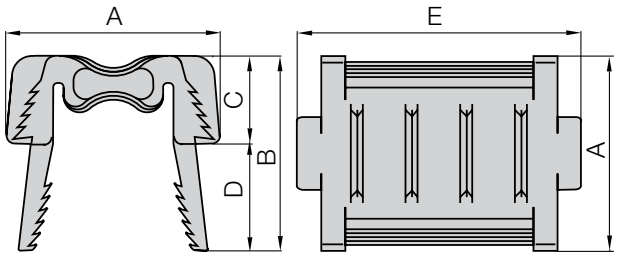
**For Series:**

**Tiewrap plates for profile rail**
For all mounting brackets
with profile rail option

## Option 1 - Clip-on strain relief for the profile rail

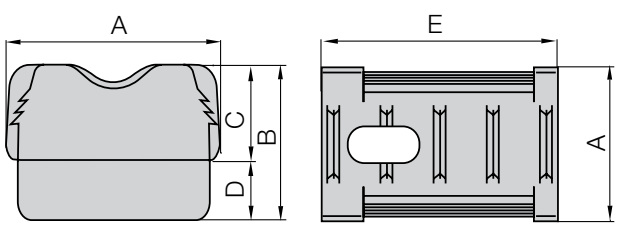
### Clamp top part No CFC-XX-M

| Cable ø | | Part No. | Dimension A | | Dimension B | | Dimension C | | Dimension D | | Dimension E | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | (mm) | Clamp top | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| .16-.31 | (4-8) | **CFC-08-M** | .57 | (14.5) | .51 | (13.0) | .22 | (5.5) | .29 | (7.5) | 1.18 | (30) |
| .31-.47 | (8-12) | **CFC-12-M** | .93 | (23.7) | .94 | (24.0) | .39 | (10.0) | .55 | (14.0) | 1.42 | (36) |
| .47-.63 | (12-16) | **CFC-16-M** | 1.28 | (32.4) | 1.28 | (32.5) | .54 | (13.6) | .74 | (18.9) | 1.65 | (42) |
| .63-.79 | (16-20) | **CFC-20-M** | 1.70 | (43.2) | 1.54 | (39.1) | .69 | (17.6) | .45 | (11.5) | 1.77 | (45) |
| .79-.94 | (20-24) | **CFC-24-M** | 2.13 | (54.0) | 1.93 | (49.0) | .87 | (22.0) | 1.06 | (27.0) | 1.97 | (50) |




### Clamp bottom part No CFC-XX-C

| Cable ø | | Part No. | Dimension A | | Dimension B | | Dimension C | | Dimension D | | Dimension E | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | (mm) | Clamp top | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| .16-.31 | (4-8) | **CFC-08-C** | .51 | (14.5) | .57 | (12.5) | 1.18 | (5.5) | .28 | (7) | .94 | (24) |
| .31-.47 | (8-12) | **CFC-12-C** | .94 | (23.8) | .93 | (18.0) | 1.42 | (11.0) | .28 | (7) | 1.10 | (28) |
| .47-.63 | (12-16) | **CFC-16-C** | 1.26 | (32.4) | 1.28 | (23.6) | 1.65 | (13.6) | .39 | (10) | 1.26 | (32) |
| .63-.79 | (16-20) | **CFC-20-C** | 1.54 | (43.2) | 1.70 | (24.6) | 1.77 | (17.6) | .28 | (7) | 1.42 | (36) |
| .79-.94 | (20-24) | **CFC-24-C** | 1.97 | (54.0) | 2.13 | (29.0) | 1.97 | (22.0) | .28 | (7) | 1.54 | (39) |



# Chainfix Strain Relief
# Chainfix Clip

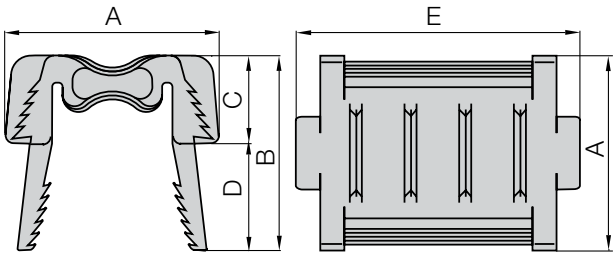
### Characteristics of igus® Chainfix clips
**Option 2:** Clip-on strain relief for opening crossbars

- Available for all igus® E-Chain Systems® with crossbar series **Part. No. 450-XX**.
- Series of clamps and bottom parts made of plastic for cable diameters ranging from .31" to .47" (8 to 12 mm)
- Quick assembly without any tools
- 2 and 3 layers on top of one another possible
- Each layer can be detached and changed later on
- High tensile forces with single-layer installation, decreases with each layer

## **Option 2** - Clip-on strain relief for opening crossbars

### Clamp top part No CFC-XX-M

| Cable ø | | Part No. | Dimension A | | Dimension B | | Dimension C | | Dimension D | | Dimension E | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | (mm) | Clamp top | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| .31-.47 | (8-12) | **CFC-12-M** | .93 | (23.7) | .94 | (24) | .39 | (10) | .55 | (14) | 1.42 | (36) |




**For Series:**

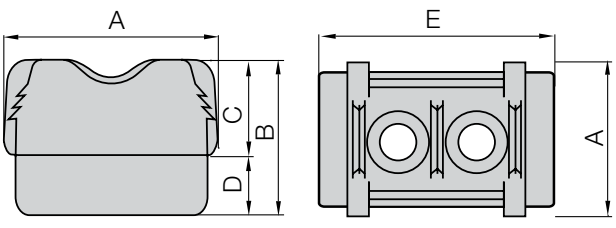
System **E4-1**
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80
- E4-112/H4-112/R4-112
- 840

System **E4/light**
- 14040/14140
- 14550/14650
- 15050/15150
- 1640

**System E6**
- E6-80L
- E6-80

### Clamp bottom part No CFC-XX-B

| Cable ø | | Part No. | Dimension A | | Dimension B | | Dimension C | | Dimension D | | Dimension E | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| in. | (mm) | Clamp top | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| .31-.47 | (8-12) | **CFC-12-B** | .94 | (23.8) | .83 | (21) | .51 | (13) | .31 | (8) | 1.50 | (38) |




PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

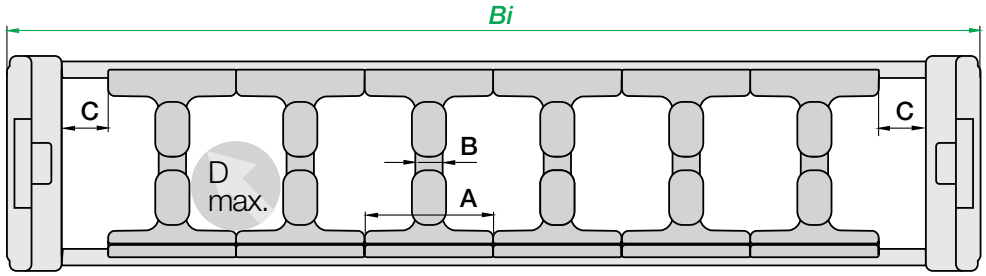
# Chainfix Strain Relief
# Strain Relief Separators

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Characteristics of igus® strain relief separators - Separator with integrated strain relief teeth

- For the use in the first or last chain link
- Accessory for igus® E-Chain Systems®
- Easy to assemble without any screws
- For restricted space conditions
- The number **of teeth** is dependent upon the selection of cable (diameter, type) and available space

## Strain relief separator with integrated teeth




| For Series | Part No. Strain Relief Separator | Number Of Teeth | Dimension A | | Dimension B | | Dimension C Min. distance L/R | | Dimension D max. cable Ø | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | in. | (mm) | in. | (mm) | in. | (mm) | in. | (mm) |
| 1400/1500 | 21-1-Z | 2 | .39 | (10) | .16 | (4) | – | – | .24 | (6) |
| 2400/2500 | 2020-Z | 2 | .39 | (10) | .16 | (4) | – | – | .24 | (6) |
| 2450/2480 | 2020-ZR | 2 | .39 | (10) | .16 | (4) | – | – | .24 | (6) |
| 2600/2700 | 262-Z | 3 | .39 | (10) | .16 | (4) | – | – | .24 | (6) |
| 3400/3500 | 301-Z | 3 | .71 | (18) | .16 | (4) | – | – | .55 | (14) |
| 3450/3480 | 34501-Z | 3 | .55 | (14) | .16 | (4) | – | – | .39 | (10) |
| R157/R158 | 1585-01-Z | 3 | .87 | (22) | .16 | (4) | – | – | .71 | (18) |
| R167/R168 | 1685-01-Z | 4 | .87 | (22) | .16 | (4) | – | – | .71 | (18) |
| R48 | 481-ZR | 2 | .39 | (10) | .14 | (3.5) | .39 | (10) | .26 | (6.5) |
| E4-21 | T2103-Z | 2 | .31 | (8) | .16 | (4) | .51 | (13) | .16 | (4) |
| E4-28 | 28-Z | 2 | .39 | (10) | .16 | (4) | – | – | .24 | (6) |
| R4-28 | 28-ZT | 2 | .39 | (10) | .16 | (4) | .59 | (15) | .24 | (6) |
| T3-29 | E6-29-02-Z | 2 | .31 | (8) | .16 | (4) | .47 | (12) | .16 | (4) |
| E6-29 | E6-29-02-Z | 2 | .31 | (8) | .16 | (4) | .47 | (12) | .16 | (4) |
| E61-29 | E6-29-02-Z | 2 | .31 | (8) | .16 | (4) | .47 | (12) | .16 | (4) |
| E6-35 | E6-35-02-Z | 3 | .31 | (8) | .16 | (4) | .47 | (12) | .16 | (4) |
| E6-40 | E6-40-02-Z | 3 | .51 | (13) | .16 | (4) | – | – | .31 | (8) |

Strain relief separators are assembled either at the first or last E-Chain® link. For an intermediate strain relief they can alternatively be assembled in the E-Chain®.

**For Series:**

**System E2/000**
- 1400/1500
- 2400/2500/2450/2480
- 2600/2700
- 3400/3500/3450/3480

**System E2 Tubes**
- R157/R158
- R167/R168
- R48

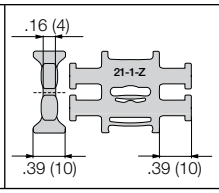
**System E4-1**
- E4-21
- E4-28/R4-28

**System T3**
- T3-29

**System E6**
- E6-29
- E6-35
- E6-40

**System E6-1**
- E61-29

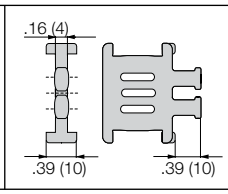
## Strain relief separators overview




### 1400/1500

**E2/000 E-Chains®**

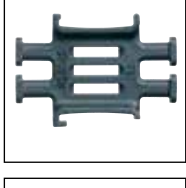
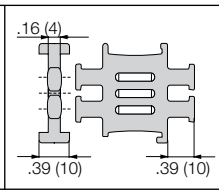
| | |
|---|---|
| unassembled | 21-1-Z |
| assembled | 21-1-Z-1 |




### 2400/2500

**E2/000 E-Chains®**

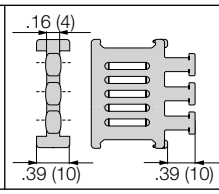
| | |
|---|---|
| unassembled | 2020-Z |
| assembled | 2120-1 |


### 2450/2480

**E2/000 E-Tubes**

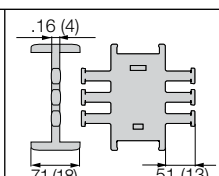
| | |
|---|---|
| unassembled | 2020-ZR |
| assembled | 2120-ZR |




### 2600/2700

**E4-1 E-Chains®**

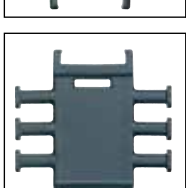
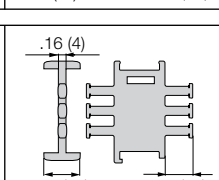
| | |
|---|---|
| unassembled | 262-Z |
| assembled | 263-Z |




### 3400/3500

**E6 E-Chains®**

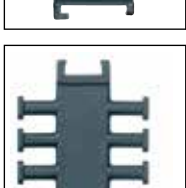
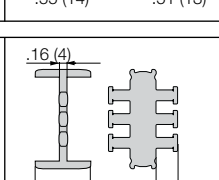
| | |
|---|---|
| unassembled | 301-Z |
| assembled | E6-29-12-Z |


### 3450/3480

**E2/000 E-Tubes**

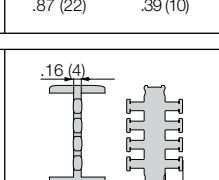
| | |
|---|---|
| unassembled | 34501-Z |
| assembled | 34511-Z |


### R157/R158

**E2 E-Tubes**

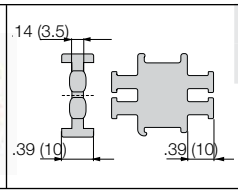
| | |
|---|---|
| unassembled | 1585-01-Z |
| assembled | 1586-01-Z |




### R167/R168

**E2 E-Tubes**

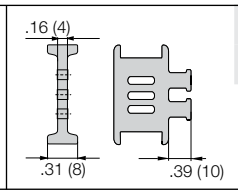
| | |
|---|---|
| unassembled | 1685-01-Z |
| assembled | 1686-01-Z |




### R48

**E2 E-Tubes**

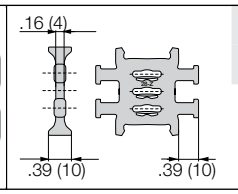
| | |
|---|---|
| unassembled | 481-ZR |
| assembled | 482-ZR |




### E4-21

**E4-1 E-Chains®**

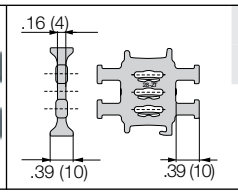
| | |
|---|---|
| unassembled | T2103-Z |
| assembled | T2113-Z |




### E4-28

**E6 E-Chains®**

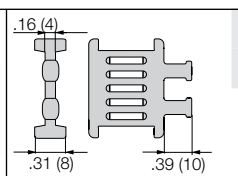
| | |
|---|---|
| unassembled | 28-Z |
| assembled | 28-Z-1 |




### R4-28

**E6 E-Chains®**

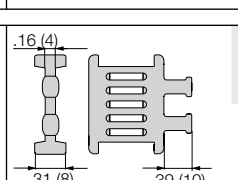
| | |
|---|---|
| unassembled | 28-ZT |
| assembled | 28-ZT-1 |




### T3-29

**T3 E-Chains®**

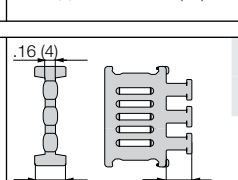
| | |
|---|---|
| unassembled | E6-29-02-Z |
| assembled | E6-29-12-Z |




### E6-29/E61-29

**E6 E-Chains®**

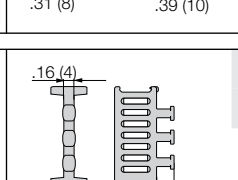
| | |
|---|---|
| unassembled | E6-29-02-Z |
| assembled | E6-29-12-Z |




### E6-35

**E6 E-Chains®**

| | |
|---|---|
| unassembled | E6-35-02-Z |
| assembled | E6-35-12-Z |




### E6-40

**E6 E-Chains®**

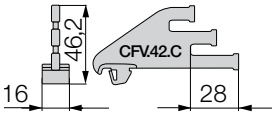
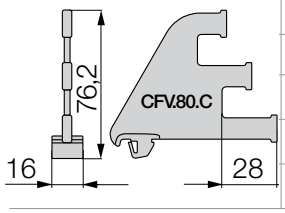
| | |
|---|---|
| unassembled | E6-40-02-Z |
| assembled | E6-40-12-Z |

# Chainfix Strain Relief Clip-on Solutions

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## Strain relief element outside of the E-Chain® cross section

- East strain relief for cables, even in enclosed tubes
- Stepped strain relief - good access when retrofitting several cables with strain reliefs
- Matching for E-Chains® and E-Tubes
- Easy retrofit assembly possible
- Simple installation into profile rails on KMA mounting brackets

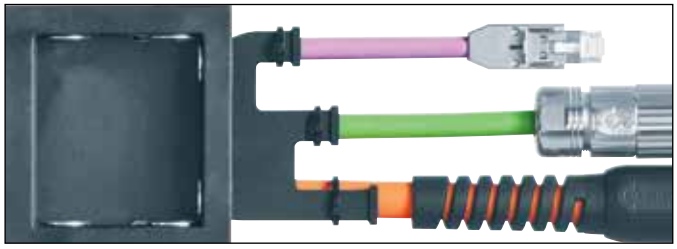
| Part No<br>Strain relief element | For E-Chain®<br>Series | For inner height *hi*<br>in. | <br>(mm) | For use on |
|---|---|---|---|---|
| **CFV-42-C** | | | | |
|  | 2600/2700/2650/2680 | 1.38 | (35) | KMA* with profile rail |
| | 3400/3500/3450/3480 | 1.77 | (45) | KMA* with profile rail |
| | E4-32/H4-32/R4-32 | 1.26 | (32) | KMA* with profile rail |
| | E4-42/H4-42/R4-42 | 1.65 | (42) | KMA* with profile rail |
| | E4-38L/R4-38L | 1.50 | (38) | KMA* with profile rail |
| | E4-48L/R4-48L | 1.89 | (48) | KMA* with profile rail |
| **CFV-80-C** | | | | |
|  | E4-56/H4-56/R4-56 | 2.20 | (56) | KMA* with profile rail |
| | E4-80/H4-80/R4-80 | 3.15 | (80) | KMA* with profile rail |

**For Series:**

**System E2/000**
- 2600/2700/2650/2680
- 3400/3500/3450/3480

**System E4-1**
- E4-32/H4-32/R4-32
- E4-42/H4-42/R4-42
- E4-56/H4-56/R4-56
- E4-80/H4-80/R4-80

**System E4-1 Light**
- E4-38L/R4-38L
- E4-48L/R4-48L



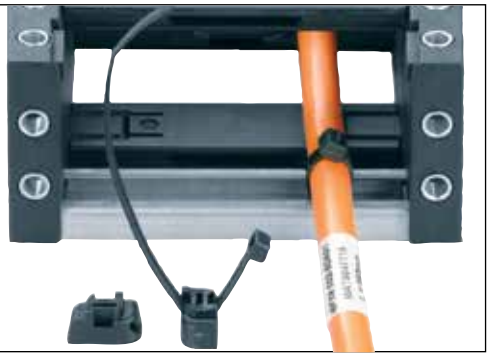
Fits into E-Chains® and E-Tubes. Strain relief element outside of the E-Chain® cross-section. Stepwise strain relief without space issues - even with different connectors

Easily clipped into the Profile rail or top-hat rail from above - also useful for static applications in control panels, etc.

# Chainfix Strain Relief
# Clip-on Solutions

### Characteristics of igus® Chainfix nuggets for profile rails

- Universal cable attachment in profile rail
- Simple strain relief - harnessed cable tiewraps
- Minimum space required
- Easy to assemble without any screws and tools
- Adjustable to every E-Chain® filling



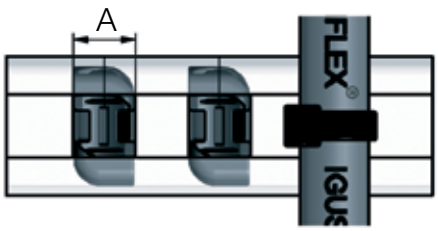
## Chainfix nuggets for profile rail

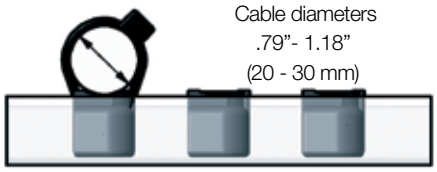
| For profile rails | Part No. Nugget | Cable Diameter Max. in. | Cable Diameter Max. (mm) | Dimension A in. | Dimension A (mm) |
|---|---|---|---|---|---|
| **92-42.../92-42...E** | CFN-20 | .79 | (20) | .43 | (10.8) |
| **92-42.../92-42...E** | CFN-30-52 | 1.18 | (30) | .65 | (16.4) |

**For Series:**

For cable attachment in profile rail

For all mounting brackets with profile rail option



Cable diameters
.79"- 1.18"
(20 - 30 mm)

PDF: www.igus.com/e-chain-pdfs
Specs/CAD/RFQ: www.igus.com/e-chains
RoHS info: www.igus.com/RoHS

# Chainfix Strain Relief
# Strain Relief Connector System

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

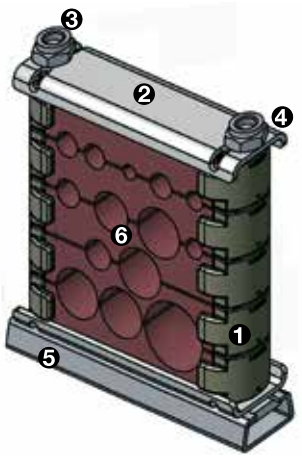
**Characteristics of the modular igus® CFB: Polymer strain relief connector system to be mounted onto the profile rail**

- Customized strain relief solutions can be offered
- 2 variations available
- Fast assembly by standard screw connection
- Can be mounted in the mounting bracket or in front of the E-Chain®
- Customized production from 1 piece
- Low priced and effective

## CFB 907-881- Polymer strain relief connector system

| Parts List<br>Description | Part No. | Quantity |
|---|---|---|
| ① Outer fixing block | **CFB20-1** | N x 2 |
| ② Clamping bar | **907-881-1-XXX** | 2 |
| ③ Threaded bolt with plate | **907-825-2-LLL** | 2 |
| ④ Hexagon nut M8 | **MAT 0040012** | 2 |
| ⑤ Profile rail (part of KMA) | **92-42-KMA** | 1 |
| ⑥ Strain relief block | Customer specific | 1 |

**Please contact igus® for individual design**



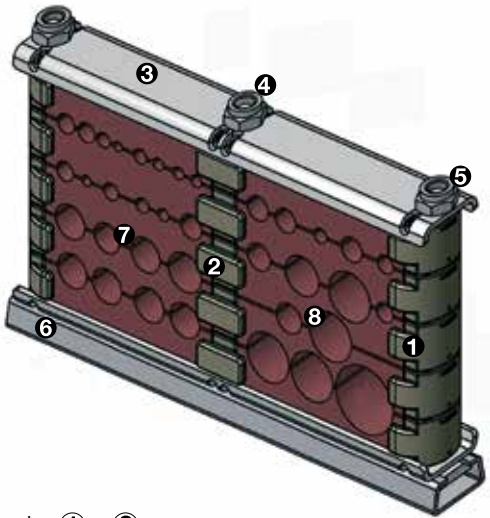

### Order key
### 907-881-XXX-N

N = Number of layers fixing blocks ①
XXX= Bi - 3 mm (mounting bracket)
Part No. with version 881

## CFB 907-825- Polymer strain relief connector system

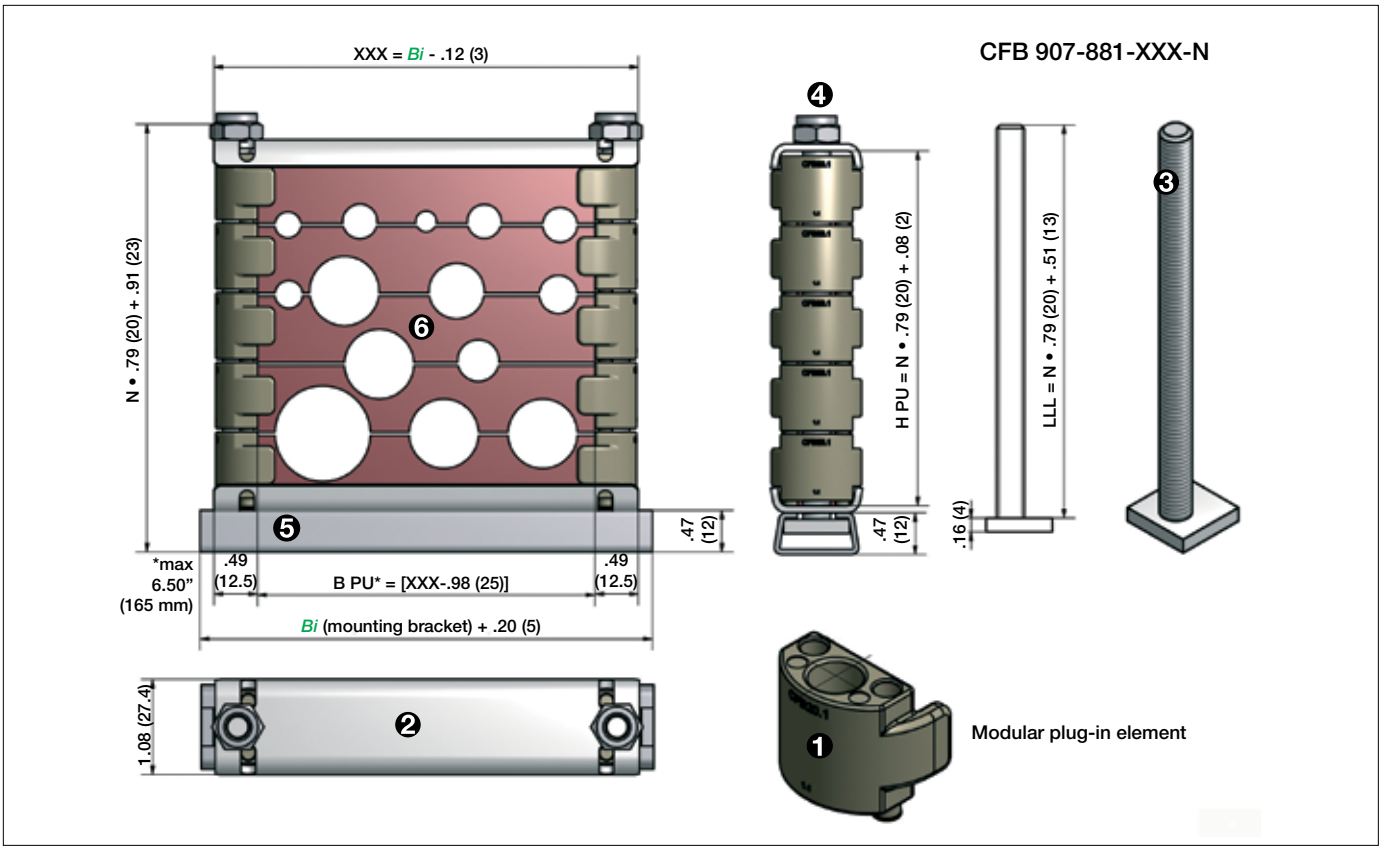
| Parts List<br>Description | Part No. | Quantity |
|---|---|---|
| ① Outer fixing block | **CFB20-1** | N x 2 |
| ② Inner fixing block | **CFB20-2** | N |
| ③ Clamping bar | **907-825-1-XXX** | 2 |
| ④ Threaded bolt with plate | **907-825-2-LLL** | 3 |
| ⑤ Hexagon nut M8 | **MAT 0040012** | 3 |
| ⑥ Profile rail (part of KMA) | **92-42-KMA** | 1 |
| ⑦ Strain relief block | Customer specific | 1 |
| ⑧ Strain relief block | Customer specific | 1 |

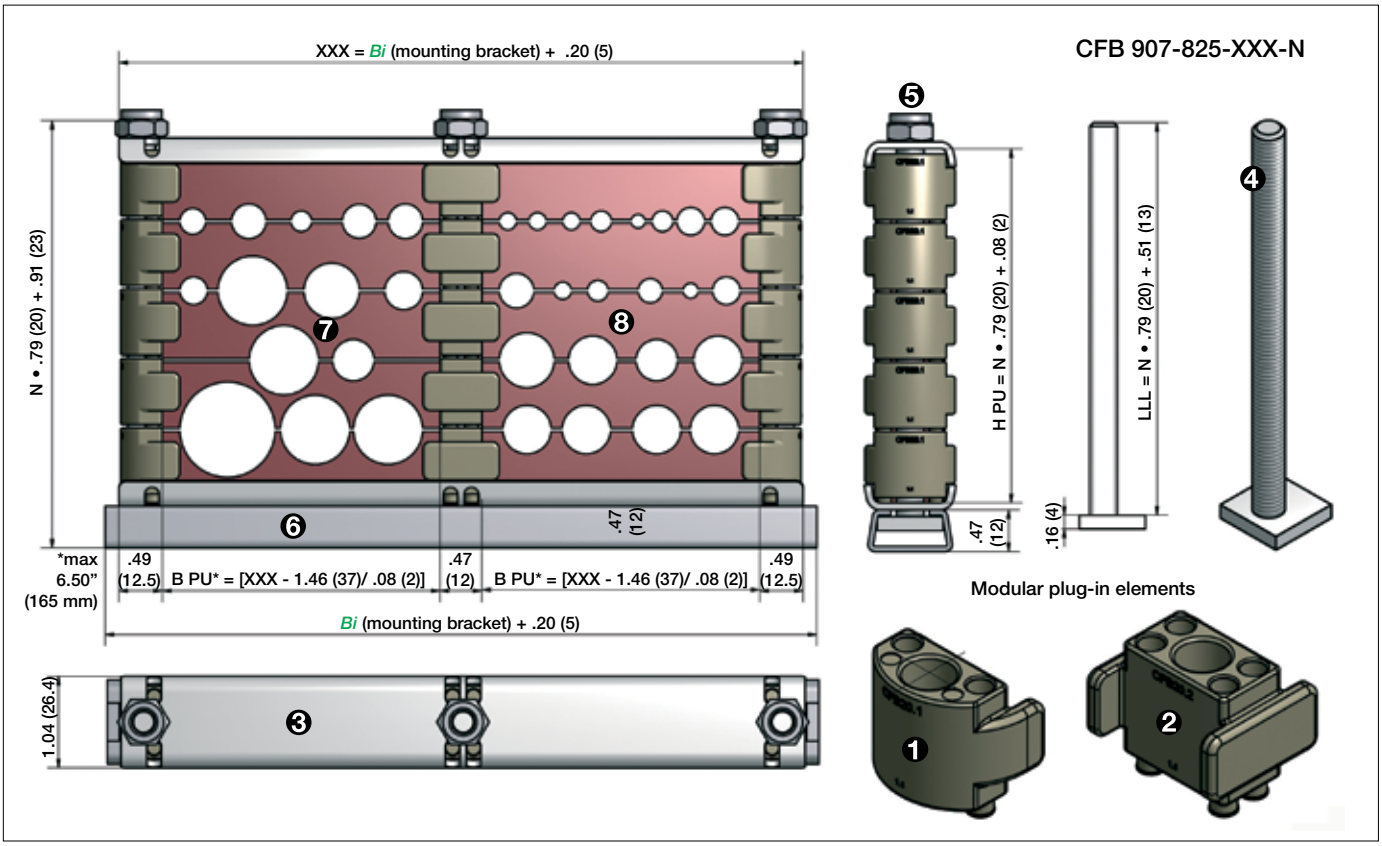
**Please contact igus® for individual design**




### Order key
### 907-825-XXX-N

N = number of layers fixing blocks ① + ②
XXX= Bi - mm (mounting bracket)
Part No. with version 825

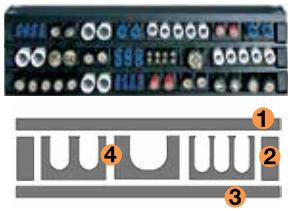



Delivery time upon request

# Chainfix Strain Relief
# Strain Relief Block

## igus® strain relief block for small hoses and cables




1 Cover plate
2 Spacers
3 Base plate

4 Grid-dimensioned modules
W = 1.08 (27.5 mm)
H = .63 (16 mm)

- Modular system for great adaptability
- No hose damage
- Space-saving design
- Hoses and cables can be installed together in the same E-Chain®
- Accommodation of hose diameters from .17 to .55 (4.3 to 14 mm)
- Easy installation - pressing the hose into the locating notch provides reliable fastening without hardware

The modules accommodate hoses from .17 to .55 (4.3 to 14 mm), 3 x .17 (3 x 4.3 mm) hoses can be fitted on top of each in module CFS-4.3 and 2 hoses can be fitted directly on top of each other in one notch using module CFS-6. The modules have a width of 1.08 (27.5), are inserted into the base plate and then fastened in position with M4 countersunk-head screws. The exception is module CFS-55.9 which offers the capacity for 5 x .35 (5 x 9 mm) hoses with twice the width. The base plate and cover plate are available in widths ranging from 2.95 to 9.45 (75 to 240 mm). The height of the spacers and modules is .63 (16 mm). Several layers can be installed directly above one another.

| Part No. Block | Hose Ø mm | Number of Hoses | Width | |
|---|---|---|---|---|
| | | | in. | (mm) |
| **CFS-4.3** | .17 (4.3) | 4 – 12 | 1.08 | (27.5) |
| **CFS-6** | .24 (6) | 3 – 6 | 1.08 | (27.5) |
| **CFS-9** | .35 (9) | 2 | 1.08 | (27.5) |
| **CFS-55.9** | .35 (9) | 5 | 2.16 | (55.0) |
| **CFS-10** | .39 (10) | 2 | 1.08 | (27.5) |
| **CFS-14** | .55 (14) | 1 | 1.08 | (27.5) |

| Part No. Base Plate | Part No. Cover Plate | Width | |
|---|---|---|---|
| | | in. | (mm) |
| **CFSU-75** | CFS-P-75 | 2.95 | (75) |
| **CFSU-102.5** | CFS-P-102.5 | 4.04 | (102.5) |
| **CFSU-130** | CFS-P-130 | 5.12 | (130) |
| **CFSU-185** | CFS-P-185 | 7.28 | (185) |
| **CFSU-212** | CFS-P-212 | 8.34 | (212) |
| **CFSU-240** | CFS-P-240 | 9.45 | (240) |

| Part No. Spacer | Height | |
|---|---|---|
| | in. | (mm) |
| **CFSD-16** | .63 | (16) |
| **CFSD-12** | .47 | (12) |

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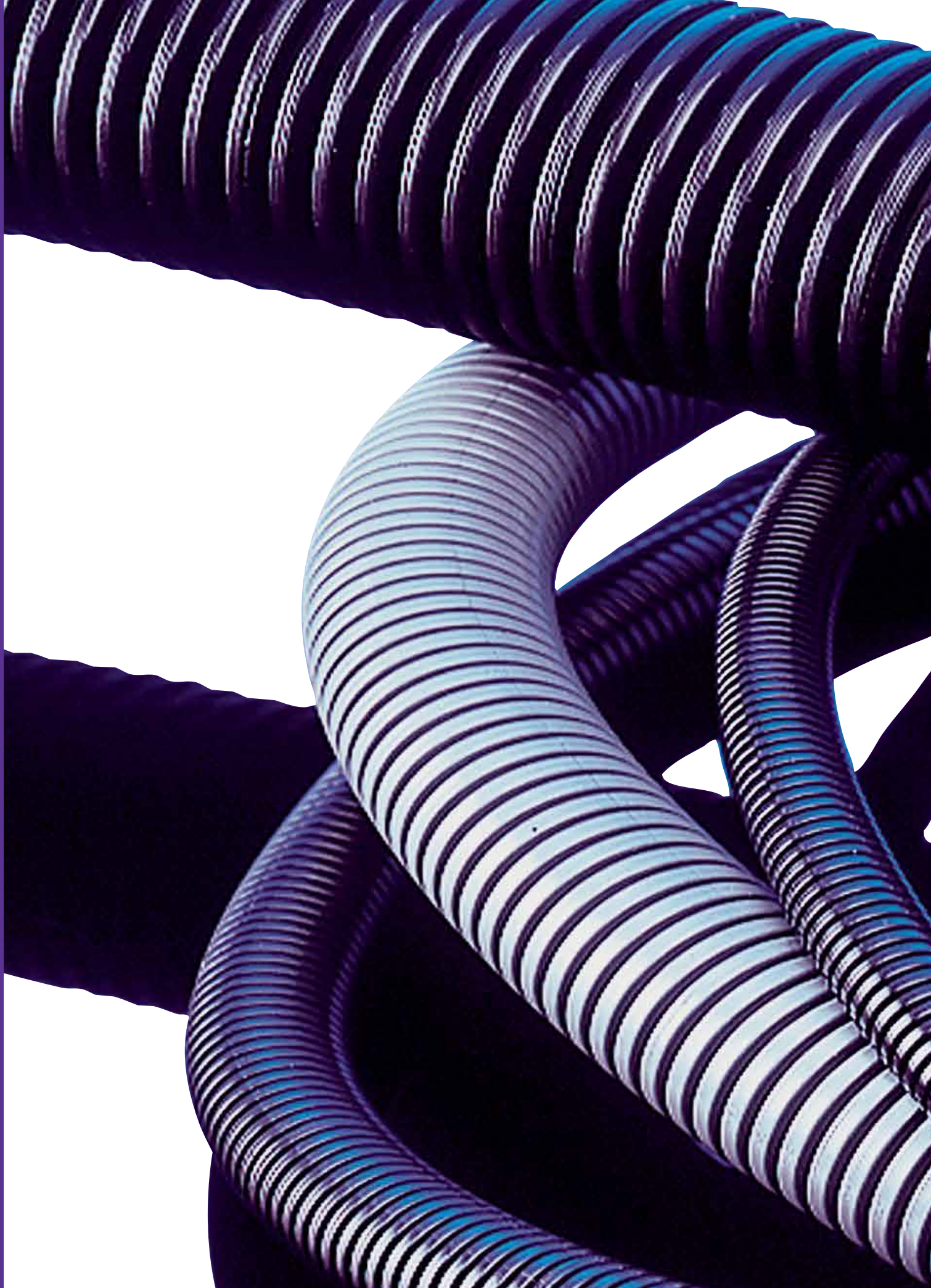


PMA

# PMA Overview

## **PMAFLEX** | Conduits | Cable protection

| Product | Description |
|---|---|
| **PMA conduits** | |
| **PACOF** | Flexible, medium, split |
| **PPCOF** | Very flexible, medium, split |
| **LN** | Two-part lock nuts |
| **LNO** | One-piece split connectors |
| **VCS** | Flexible, heavy |
| **PIS/PIH** | Highly flexible, medium |
| **CYL** | Very flexible, medium |

## **PMAFIX** | Connectors | Safety and sealing systems

| Product | Description |
|---|---|
| **PMA connectors** | |
| **IP66 - stat., IP54 dyn.** | Universal safety clip |
| **IP68 - stat., IP67 dyn.** | Oval clip |
| **PMAFIX / PMAFLEX** | Connectors |
| **PMAFIX connectors VW** | 90° elbow, PG |
| **PMAFIX connectors VA** | 45° elbow, metric & PG |
| **PMAFIX connectors VN** | Straight, metric |
| **PMAFIX connectors VN** | Straight, PG |
| **PMAFIX connectors VB** | 90° curved elbow, metric & PG |
| **PMAFIX connectors VO** | Flange 90° |

## **PMA** | Accessories

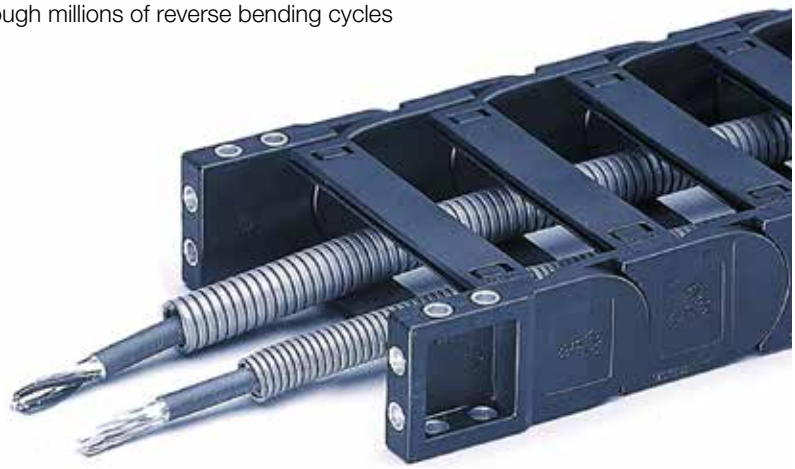
| Product | Description |
|---|---|
| **PMA accessories** | |
| **PMAFIX FH-O** | One-piece system support |
| **PMA VH** | System supports |
| **PMA GPS** | One-piece system supports |
| **PMA MN** | Hexagonal lock nuts, metric & PG |
| **PMA SGB** | Tube clamps |
| **PMA 514** | Plug screws, metric & PG |

# PMA Protective Corrugated Tubing

## Tubes, connectors, system supports, and accessories

## PMA - corrugated conduits, connectors, system support, and accessories

- Wide range of tubes
- Long service life of the tubes especially through millions of reverse bending cycles
- UL-recognized products available
- PMAFIX safety locking system



**igus® E-Chain® System E4 combined with PMAFLEX protective tubing and igus Chainflex® CF9**

### PMA-Program - Wide selection of tubes and systems

The PMA cable protection system is applied wherever the mechanical protection of electrical wires and cables is required. Very flexible types of conduits are especially suitable for the additional protection of leads in E-Chain systems® if required. By combining technical excellence with rigorous international safety standards, PMA meets the demands of industry worldwide - specializing in applications from the machine building industries to high tech manufacturing; heavy plant and vehicle construction; fiber optics, solar energy and robotic applications with high speed and millions of reversed bending cycles.

### PMAFLEX - Conduits

**PMAFLEX** covers different conduit types for a variety of applications in cable protection. The **PMAFLEX** range offers conduits for technically demanding applications and special requirements. Conduit sizes range from 4.5 mm to 125 mm diameters, from lightweight to heavyweight, and pliable to highly flexible. Standard colors are black and grey. Many conduits are specially approved, e.g. CSA, UL Recognition, NF, SNCF, DB, etc.

### PMAFIX- Connectors

The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a pre-installed universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.<?>

# PMA Protective Corrugated Tubing

igus® E-Chain System®
Telephone 1-800-521-2747
Fax 1-401-438-7270
Internet: http://www.igus.com
email: sales@igus.com
QuickSpec: http://www.igus.com/quickspec

## PMA COFLEX Conduit PACOF - medium, flexible, split

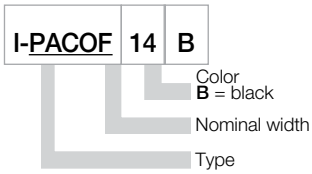
The PMA COFLEX conduit type PACOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

**Temperature range:**
-40°F to +221°F (-40°C to +105°C), or a short time up to +320°F (+160°C)

**Features:**
- specially modified PA6 (polyamide 6)
- good closure up to IP50
- self-extinguishing
- halogen-free and cadmium-free

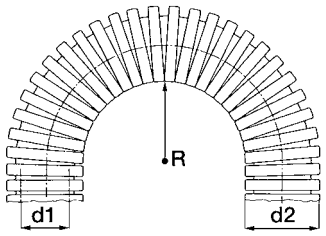
**Chemical resistance:**
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

**Part No. structure**




| Part No. (Black) | Conduit size Nominal | Conduit size Metric | Inside diameter d1 (mm) | Outside diameter d2 (mm) | Radius (stat.) (mm) | PU (m) |
|---|---|---|---|---|---|---|
| I-PACOF-07B | 7 | 10 | 5.6 | 10.0 | 30 | 50 |
| I-PACOF-10B | 10 | 12 | 8.5 | 12.8 | 33 | 50 |
| I-PACOF-12B | 12 | 16 | 11.0 | 15.6 | 35 | 50 |
| I-PACOF-17B | 17 | 20 | 15.5 | 21.1 | 45 | 50 |
| I-PACOF-23B | 23 | 25 | 22.1 | 28.4 | 70 | 50 |
| I-PACOF-29B | 29 | 32 | 27.2 | 34.5 | 120 | 50 |
| I-PACOF-36B | 36 | 40 | 32.0 | 42.4 | 145 | 30 |
| I-PACOF-48B | 48 | 50 | 43.9 | 54.1 | 150 | 30 |
| I-PACOF-70B | 70 | 80 | 66.0 | 80.0 | 220 | 10 |

**I-PACOF - is suitable for static use only!**




** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

## PMA COFLEX Conduit PPCOF - medium, very flexible, split

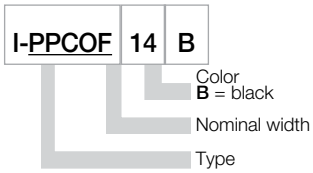
The PMA COFLEX conduit type PPCOF has been created for retrofit and pre-loomed applications. New cables can be added to existing arrangements without the need for re-wiring or re-threading within the building of machines and installations. This product is suitable for vehicle manufacturing and building construction. Split connectors and locknuts are available for this product group.

**Temperature range:**
-4°F to +221°F (-20 °C to +105 °C), or a short time up to +275°F (+135°C)

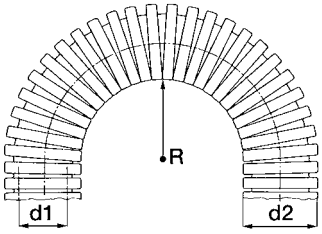
**Features:**
- specially modified polypropylene
- good closure up to IP50
- self-extinguishing,

**Chemical resistance:**
- fuels
- mineral oils
- fats
- alkalis
- acids, etc.

**Part No. structure**




| Part No. (Black) | Conduit size Nominal | Metric | Inside diameter d1 (mm) | Outside diameter d2 (mm) | Radius (stat.) (mm) | PU (m) |
|---|---|---|---|---|---|---|
| I-PPCOF-07B | 7 | 10 | 5.9 | 10 | 25 | 50 |
| I-PPCOF-10B | 10 | 12 | 8.5 | 12.8 | 28 | 50 |
| I-PPCOF-12B | 12 | 16 | 11.0 | 15.6 | 35 | 50 |
| I-PPCOF-17B | 17 | 20 | 15.1 | 21.1 | 45 | 50 |
| I-PPCOF-23B | 23 | 25 | 21.1 | 28.4 | 60 | 50 |
| I-PPCOF-29B | 29 | 32 | 26.6 | 34.5 | 100 | 50 |
| I-PPCOF-36B | 36 | 40 | 31.8 | 42.4 | 120 | 30 |
| I-PPCOF-48B | 45 | 50 | 43.9 | 54.1 | 140 | 30 |




** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

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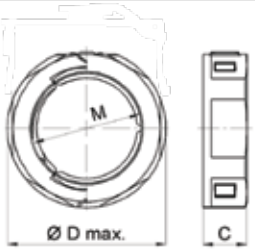
## LN - Two-part Lock Nut - metric

These split counter nuts are ideal in conjunction with TN fittings for the smooth re-installation and repair in machinery and plant construction. In addition, this product is becoming increasingly important in automotive construction and in building installation technology.

**Temperature range:**
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

**Features:**

- specially formulated polyamide
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength




### PMA-COFIX LN: Two-part lock nut, metric

| Part No. Black | Thread M metric | Fits PMA COFLEX LNO | | Outer diameter (mm) | Width C (mm) |
|---|---|---|---|---|---|
| **I-BLN-M16** | M16 x 1.5 | I-BLNO-M160 | I-BLNO-M162 | 21.5 | 8.0 |
| **I-BLN-M20** | M20 x 1.5 | I-BLNO-M202 | I-BLNO-M207 | 29.5 | 8.0 |
| **I-BLN-M25** | M25 x 1.5 | I-BLNO-M257 | I-BLNO-M253 | 35.5 | 9.0 |
| **I-BLN-M32** | M32 x 1.5 | I-BLNO-M323 | I-BLNO-M329 | 44.5 | 12.0 |
| **I-BLN-M40** | M40 x 1.5 | I-BLNO-M409 | I-BLNO-M406 | 53.5 | 15.0 |
| **I-BLN-M50** | M50 x 1.5 | I-BLNO-M508 | | 69.5 | 15.0 |

## LNO - One-piece split connector, straight

These split lock nuts are used in conjunction with the connectors TN for repairs or where cable protection systems are installed after wiring has taken place in the machine building and installation industry. Further, these products will be used increasingly in the vehicle building and building construction.

**Temperature range:**
-22°F to +212°F (-30 °C to +100 °C), or a short time up to +266°F (+130°C)

**Features:**

- specially formulated polyamide
- IP50
- self-extinguishing
- free of halogen, cadmium and phosphor
- very good impact strength

### PMA-COFIX LNO: one-piece split connector

| Part No. Black | Thread metric | Fits conduit size NW | Fits conduit size metric | Thread length g (mm) | Overall length L (mm) |
|---|---|---|---|---|---|
| **I-BLNO-M160** | M16 x 1.5 | 12 | 16 | 13.0 | 36.5 |
| **I-BLNO-M162** | M16 x 1.5 | 12 | 16 | 13.0 | 39.5 |
| **I-BLNO-M202** | M20 x 1.5 | 12 | 16 | 13.0 | 39.5 |
| **I-BLNO-M207** | M20 x 1.5 | 17 | 20 | 13.0 | 43.5 |
| **I-BLNO-M257** | M25 x 1.5 | 17 | 20 | 14.0 | 44.5 |
| **I-BLNO-M253** | M25 x 1.5 | 23 | 25 | 14.0 | 52.5 |
| **I-BLNO-M323** | M32 x 1.5 | 23 | 25 | 17.0 | 56.0 |
| **I-BLNO-M329** | M32 x 1.5 | 29 | 32 | 17.0 | 61.0 |
| **I-BLNO-M409** | M40 x 1.5 | 29 | 32 | 21.0 | 65.0 |
| **I-BLNO-M406** | M40 x 1.5 | 34 | 40 | 22.0 | 74.5 |
| **I-BLNO-M508** | M50 x 1.5 | 48 | 50 | 22.0 | 80.5 |

## PMAFLEX Conduits VCS - flexible, heavy

PMAFLEX VCS heavy conduit is characterized by high impact resistance at low temperatures and good weather resistance. These conduits find their application primarily in railway vehicle undercarriages, but are also well-suited to static applications in general construction of machinery or installations.

**Temperature range:**
-58°F to +221°F (-50 °C to +105 °C), or a short time up to +302°F (+150°C)

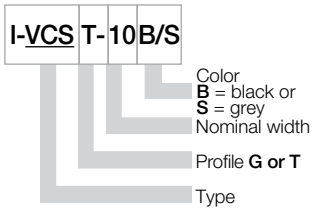
**Features:**

- specially modified PA6 (polyamide 6) for cold impact
- excellent mechanical properties also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

**Chemical resistance:**

- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

**Part No. structure**

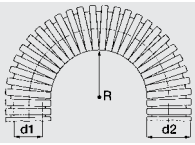



| Part No. black | Part No. grey* | Conduit size NW | Conduit size metric | Inside diameter (mm) | Outside diameter (mm) | Radius (stat.)** (mm) | PU (m) |
|---|---|---|---|---|---|---|---|
| I-VCST-07B | I-VCST-07S | 7 | 10 | 6.0 | 10.0 | 20 | 100 |
| I-VCST-10B | I-VCST-10S | 10 | 12 | 9.2 | 13.0 | 25 | 50 |
| I-VCST-12B | I-VCST-12S | 12 | 16 | 11.8 | 15.8 | 30 | 50 |
| I-VCST-17B | I-VCST-17S | 17 | 20 | 16.0 | 21.2 | 40 | 50 |
| I-VCSG-17B | I-VCSG-17S | 17 | 20 | 15.2 | 21.2 | 40 | 50 |
| I-VCSG-23B | I-VCSG-23S | 23 | 25 | 22.0 | 28.5 | 50 | 50 |
| I-VCSG-29B | I-VCSG-29S | 29 | 32 | 27.7 | 34.4 | 60 | 50 |
| I-VCSG-36B | I-VCSG-36S | 36 | 40 | 35.8 | 42.4 | 70 | 30 |
| I-VCSG-48B | I-VCSG-48S | 48 | 50 | 46.8 | 54.4 | 80 | 30 |
| I-VCSG-56B | I-VCSG-56S | 56 | 68 | 56.1 | 67.2 | 150 | 30 |
| I-VCSG-70B | I-VCSG-70S | 70 | 80 | 66.5 | 80.0 | 200 | 10 |
| I-VCSG-95B | I-VCSG-95S | 95 | 106 | 91.0 | 106.0 | 300 | 10 |

*Grey part is a special order, call igus® for availability

**Fine profile T -**
tight bending radius

**Coarse profile G -**
high pull-out strength




** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

**I-VCST/VCSG - is suitable for static use only!**

igus® E-Chain System®

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# PMA Protective Corrugated Tubing



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## PMAFLEX Conduits PIS/PIH - highly flexible, medium

These highly flexible products are used orimarily in automation applications and for connections subject to intense movements in general machinery construction. Their outstanding material properties make these conduits especially suitable for outdoor applications where they are exposed to intensive sunlight (UV).

**Temperature range:**
-58°F to +203°F (-50 °C to +95 °C), or a short time up to +302°F (+150°C)

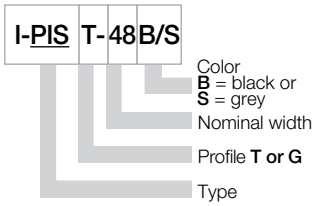
**Features:**

- specially modified polyamide 12
- **PIS: medium-wall (nominal width 07 to 48**
  **PIH: heavy-wall (nominal width 56 to 125)**
- self-extinguishing
- halogen-free and cadmium-free
- good mechanical properties also at low temperatures

**Chemical resistance:**

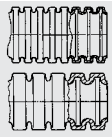
- fuels
- mineral oils
- fats
- alkalis
- acids etc.

**Part No. structure**

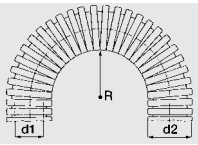



| Part No. black | Part No. grey* | Conduit size NW | Conduit size metric | Inside diameter (mm) | Outside diameter (mm) | Radius stat.**/dyn.*** (mm) | PU (m) |
|---|---|---|---|---|---|---|---|
| I-PIST-07B | I-PIST-07S | 7 | 10 | 6.2 | 10.0 | 15 / 40 | 50 |
| I-PIST-10B | I-PIST-10S | 10 | 12 | 9.6 | 13.0 | 20 / 50 | 50 |
| I-PIST-12B | I-PIST-12S | 12 | 16 | 11.9 | 15.8 | 25 / 65 | 50 |
| I-PIST-17B | I-PIST-17S | 17 | 20 | 16.4 | 21.1 | 30 / 65 | 50 |
| I-PIST-23B | I-PIST-23S | 23 | 25 | 22.6 | 28.4 | 35 / 90 | 50 |
| I-PIST-29B | I-PIST-29S | 29 | 32 | 29.0 | 34.3 | 45 / 110 | 50 |
| I-PIST-36B | I-PIST-36S | 36 | 40 | 36.5 | 42.5 | 60 / 165 | 30 |
| I-PIST-48B | I-PIST-48S | 48 | 50 | 47.5 | 54.5 | 70 / 180 | 30 |
| I-PISG-17B | – | 17 | 20 | 15.2 | 21.1 | 30 / 80 | 50 |
| I-PISG-23B | I-PISG-23S | 23 | 25 | 21.7 | 28.4 | 40 / 100 | 50 |
| I-PISG-29B | I-PISG-29S | 29 | 32 | 27.4 | 34.3 | 50 / 120 | 50 |
| I-PISG-36B | I-PISG-36S | 36 | 40 | 35.8 | 42.3 | 60 / 180 | 30 |
| I-PISG-48B | I-PISG-48S | 48 | 50 | 46.7 | 54.2 | 70 / 200 | 30 |
| I-PIHG-56B | I-PIHG-56S | 56 | 68 | 56.3 | 67.2 | 110 / 270 | 30 |
| I-PIHG-70B | I-PIHG-70S | 70 | 80 | 67.2 | 79.6 | 150 / 350 | 30 |
| I-PIHG-95B | I-PIHG-95S | 95 | 106 | 91.3 | 106.0 | 170 / 450 | 30 |
| I-PIHG-125B | I-PIHG-125S | 125 | 146 | 126.5 | 146.5 | 350 / 580 | 20 |

*Grey part is a special order, call igus® for availability



**Fine profile T -**
tight bending radius
**Coarse profile G -**
high pull-out strength




** ***stat. R*** = lowest recommended bending radius for static (fixed) installation
***dyn. R*** = lowest recommended bending radius for dynamic (flexible) installation

**I-PIS/PIH is recommended for highly flexible application**

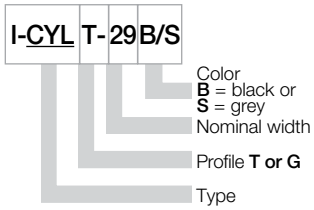
# PMA Protective Corrugated Tubing

## PMAFLEX Conduits CYL - very flexible, medium, economy

**PMA CYL ECONOMY** conduit exhibits very good flexibility and is also suitable for low temperature applications. These conduits are used primarily in construction of machinery and equipment.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

**Part No. structure**

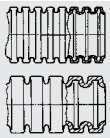



**Features:**
- specially modified polyamide 6/6.6 for cold impact
- good impact strength also at low temperatures
- self-extinguishing
- halogen-free and cadmium-free

**Chemical resistance:**
- fuels
- mineral oils
- fats
- alkalis
- weak acids and bases, etc.

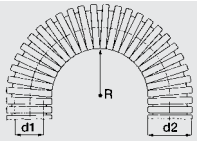
| Part No. black | Part No. grey* | Conduit size NW | Conduit size metric | Inside diameter (mm) | Outside diameter (mm) | Radius (stat.)** (mm) | PU (m) |
|---|---|---|---|---|---|---|---|
| I-CYLT-07B | I-CYLT-07S | 7 | 10 | 6.2 | 10.0 | 15 | 50 |
| I-CYLT-10B | I-CYLT-10S | 10 | 12 | 9.6 | 13.0 | 20 | 50 |
| I-CYLT-12B | I-CYLT-12S | 12 | 16 | 12.0 | 15.8 | 30 | 50 |
| I-CYLT-17B | I-CYLT-17S | 17 | 20 | 16.2 | 21.2 | 40 | 50 |
| I-CYLT-23B | I-CYLT-23S | 23 | 25 | 22.6 | 28.5 | 40 | 50 |
| I-CYLT-29B | I-CYLT-29S | 29 | 32 | 29.0 | 34.5 | 50 | 50 |
| I-CYLT-36B | I-CYLT-36S | 36 | 40 | 36.5 | 42.5 | 60 | 30 |
| I-CYLT-48B | I-CYLT-48S | 48 | 50 | 47.5 | 54.5 | 70 | 30 |
| I-CYLG-23B | I-CYLG-23S | 23 | 25 | 21.9 | 28.5 | 45 | 50 |
| I-CYLG-29B | I-CYLG-29S | 29 | 32 | 27.6 | 34.5 | 55 | 50 |
| I-CYLG-36B | I-CYLG-36S | 36 | 40 | 36.0 | 42.5 | 60 | 30 |
| I-CYLG-48B | I-CYLG-48S | 48 | 50 | 47.0 | 54.5 | 70 | 30 |
| I-CYLG-56B | – | 56 | 68 | 56.3 | 67.2 | 120 | 30 |
| I-CYLG-70B | – | 70 | 80 | 68.0 | 80.0 | 160 | 30 |
| I-CYLG-95B | – | 95 | 106 | 91.9 | 106.0 | 210 | 10 |
| I-CYLG-125B | – | 125 | 146 | 126.5 | 146.5 | 450 | 6 |

*Grey part is a special order, call igus® for availability



**Fine profile T -**
tight bending radius

**Coarse profile G -**
high pull-out strength




** ***stat. R*** = lowest recommended bending radius for static (fixed) installation

***dyn. R*** = lowest recommended bending radius for dynamic (flexible) installation

**I-CYLT/CYLG - is recommended for static use!**
(moderate dynamic application possible)

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# PMAFIX Connectors - Safety and Sealing Systems

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## IP66 - static, IP54 dynamic - universal safety clip

- One piece Fitting, sealing by cone
- Easy “push-in” installation
- Pre-installed safety clip AFN2
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver
- Clip pre-installed in all IP66 connectors

### Installation

1 Push in conduit with a slight twist (open using screw-driver on conduit side)

2 Pull back slightly to ensure the locking mechanism is fully engaged

3 To re-open use a screwdriver

## IP68 - static - oval clip

- High sealing through additional seal cap
- For highest dynamic applications
- Fits any type of conduit profile (T and G)
- Excellent pull-out strength
- Re-opening for safety reasons only possible with a screwdriver

### Installation

1 **A** Conduit, **B** Seal cap, **C** Connector, **D** Oval clip, **E** flat gasket (or O-ring seal)

2 Push seal cap onto end of conduit to achieve IP68

For ease of installation moisten seal cap with water or grease

4 Push conduit with seal cap fully into connector. This guarantees PMA’s unique IP68/67 rating*

5 Install retaining oval clip

6 To re-open use a screwdriver

* For safety reasons, oval clip will not fit if seal cap is not fully installed.

Ensure to follow O-ring manufacturers guidelines when using O-rings for sealing purposes.

## PMAFIX - Connectors

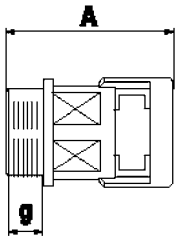
The designation **PMAFIX** describes a very large range of connectors for PMA conduits with the patented PMA safety clip system. Connectors are available for ingress protection IP66 and IP68. IP66 connectors are fitted with a preinstalled universal safety clip which ensures a quick “push-in” installation. IP68 connectors for increased requirements will be delivered with a special conduit seal cap.

### Table 1 - **PMAFIX / PMAFLEX** conduit code

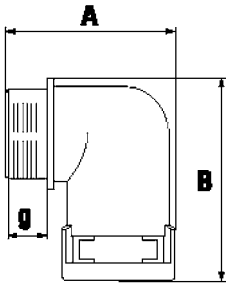
| Nominal width | PMA code |
|---|---|
| 7 | **M** |
| 10 | **0** |
| 12 | **2** |
| 17 | **7** |
| 23 | **3** |
| 29 | **9** |
| 36 | **6** |
| 48 | **8** |

### Table 2 - Thread codes

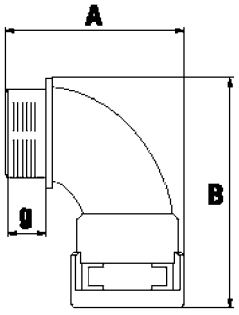
| Thread metric | PMA code | Thread PG | PMA code |
|---|---|---|---|
| M12 x 1.5 | **M12** | PG07 | **P07** |
| M16 x 1.5 | **M16** | PG09 | **P09** |
| M20 x 1.5 | **M20** | PG11 | **P11** |
| – | – | PG13.5 | **P13** |
| M25 x 1.5 | **M25** | PG16 | **P16** |
| M32 x 1.5 | **M32** | PG21 | **P21** |
| M40 x 1.5 | **M40** | PG29 | **P29** |
| M50 x 1.5 | **M50** | PG36 | **P36** |
| M63 x 1.5 | **M63** | PG42 | **P42** |
| | | PG48 | **P48** |



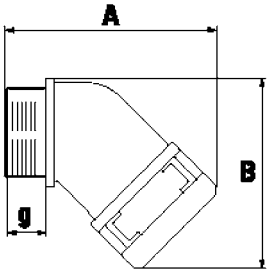

g = Thread length
A = Overall length




g = Thread length
A x B = External dimensions




g = Thread length
A x B = External dimensions




g = Thread length
A x B = External dimensions



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# PMAFIX Connectors - Safety and Sealing Systems

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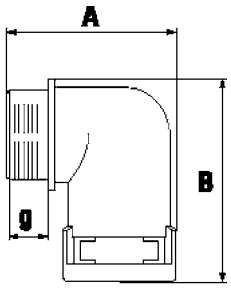



g = Thread length
A x B = External dimensions

## PMAFIX Connectors VW - 90° elbow, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

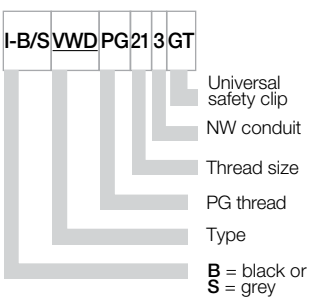
**Features:**

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

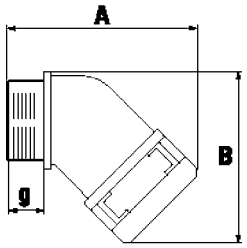
| Part No. IP66 | Part No. IP68 | Thread PG | Fits to conduit size: NW | Thread metric | External length [mm] | dim. [mm] |
|---|---|---|---|---|---|---|
| I-__VWD-PG07MGT-11 | I-__VWV-PG07M | 7 | 7 | 10 | (11.0) | 32.0 x 35.0 |
| I-__VWD-PG070GT-11 | I-__VWV-PG070 | 7 | 10 | 12 | (11.0) | 34.0 x 39.5 |
| I-__VWD-PG09MGT-11 | — | 9 | 7 | 10 | (11.0) | 32.0 x 36.5 |
| I-__VWD-PG090GT-11 | I-__VWV-PG090 | 9 | 10 | 12 | (11.0) | 34.0 x 39.5 |
| I-__VWD-PG092GT-11 | I-__VWV-PG092 | 9 | 12 | 16 | (11.0) | 38.5 x 44.5 |
| I-__VWD-PG11MGT-11 | — | 11 | 7 | 10 | (11.0) | 32.0 x 38.0 |
| I-__VWD-PG110GT-11 | I-__VWV-PG110 | 11 | 10 | 12 | (11.0) | 34.0 x 41.0 |
| I-__VWD-PG112GT-11 | I-__VWV-PG112 | 11 | 12 | 16 | (11.0) | 38.5 x 46.0 |
| I-__VWD-PG13MGT-11 | — | 13.5 | 7 | 10 | (11.0) | 32.0 x 39.5 |
| I-__VWD-PG130GT-11 | I-__VWV-PG130 | 13.5 | 10 | 12 | (11.0) | 34.0 x 42.5 |
| I-__VWD-PG132GT-11 | I-__VWV-PG132 | 13.5 | 12 | 16 | (11.0) | 38.5 x 47.5 |
| I-__VWD-PG137GT-11 | I-__VWV-PG137 | 13.5 | 17 | 20 | (11.0) | 43.5 x 58.5 |
| I-__VWD-PG167GT-11 | I-__VWV-PG167 | 16 | 17 | 20 | (11.0) | 43.5 x 58.5 |
| I-__VWD-PG213GT | I-__VWV-PG213 | 21 | 23 | 25 | (11.0) | 54.0 x 67.0 |
| I-__VWD-PG299GT | I-__VWV-PG299 | 29 | 29 | 32 | (12.0) | 61.5 x 74.5 |
| I-__VWD-PG366GT | I-__VWV-PG366 | 36 | 36 | 40 | (13.0) | 72.0 x 98.0 |
| I-__VWD-PG488GT | I-__VWV-PG488 | 48 | 48 | 50 | (13.0) | 85.5 x 111.0 |

Fill in the blank with either “B” to order black or “S” to order grey*
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VB are available
*Grey part is a special order, call igus® for availability

**Part No. structure PG**



# PMAFIX Connectors - Safety and Sealing Systems




g = Thread length
A x B = External dimensions

## PMAFIX Connectors VA - 45° elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

**Features:**

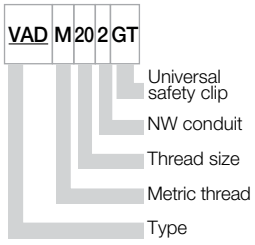
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

| Part No. IP66 | Part No. IP68 | Thread metric | Fits to conduit size: NW | metric | Thread length [mm] | External dim. [mm] |
|---|---|---|---|---|---|---|
| I-__VAD-M120GT | — | M12 x 1.5 | 10 | 12 | 11.0 | 43.5 x 37.0 |
| I-__VAD-M160GT | I-__VAV-M160 | M16 x 1.5 | 10 | 12 | 11.0 | 43.5 x 38.0 |
| I-__VAD-M162GT | I-__VAV-M162 | M16 x 1.5 | 12 | 16 | 11.0 | 48.0 x 40.0 |
| I-__VAD-M202GT | I-__VAV-M202 | M20 x 1.5 | 12 | 16 | 11.0 | 48.0 x 41.5 |
| I-__VAD-M207GT | I-__VAV-M207 | M20 x 1.5 | 17 | 20 | 11.0 | 55.5 x 51.5 |
| I-__VAD-M253GT | I-__VAV-M253 | M25 x 1.5 | 23 | 25 | 12.0 | 65.0 x 58.5 |
| I-__VAD-M329GT | I-__VAV-M329 | M32 x 1.5 | 29 | 32 | 15.0 | 73.5 x 66.5 |
| I-__VAD-M406GT | I-__VAV-M406 | M40 x 1.5 | 36 | 40 | 19.0 | 92.5 x 85.5 |
| I-__VAD-M506GT | I-__VAV-M506 | M50 x 1.5 | 36 | 40 | 19.0 | 100.0 x 89.5 |
| I-__VAD-M508GT | I-__VAV-M508 | M50 x 1.5 | 48 | 50 | 19.0 | 100.0 x 96.0 |
| I-__VAD-M638GT | I-__VAV-M638 | M63 x 1.5 | 48 | 50 | 19.0 | 100.0 x 104.0 |

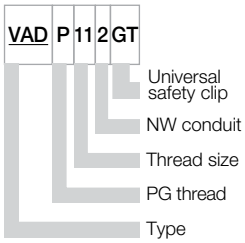
| Part No. IP66 | Part No. IP68 | Thread PG | Fits to conduit size: NW | metric | Thread length [mm] | External dim. [mm] |
|---|---|---|---|---|---|---|
| I-__VAD-P090GT | I-__VAV-P090 | 9 | 10 | 12 | 11.0 | 43.5 x 37.0 |
| I-__VAD-P112GT | I-__VAV-P112 | 11 | 12 | 16 | 11.0 | 48.0 x 40.0 |
| I-__VAD-P132GT | I-__VAV-P132 | 13.5 | 12 | 16 | 11.0 | 48.0 x 41.5 |
| I-__VAD-P137GT | I-__VAV-P137 | 13.5 | 17 | 20 | 11.0 | 55.0 x 50.0 |
| I-__VAD-P167GT | I-__VAV-P167 | 16 | 17 | 20 | 11.0 | 55.0 x 51.5 |
| I-__VAD-P213GT | I-__VAV-P213 | 21 | 23 | 25 | 12.0 | 67.0 x 59.0 |
| I-__VAD-P299GT | I-__VAV-P299 | 29 | 29 | 32 | 12.0 | 69.0 x 67.0 |
| I-__VAD-P366GT | I-__VAV-P366 | 36 | 36 | 40 | 13.0 | 86.0 x 86.0 |
| I-__VAD-P488GT | I-__VAV-P488 | 48 | 48 | 50 | 13.0 | 93.0 x 99.0 |

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

**Part No. structure metric**




**Part No. structure PG**



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# PMAFIX Connectors - Safety and Sealing Systems

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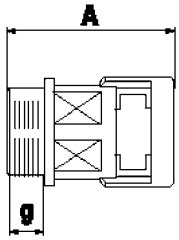



## PMAFIX Connectors VN - straight, metric

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

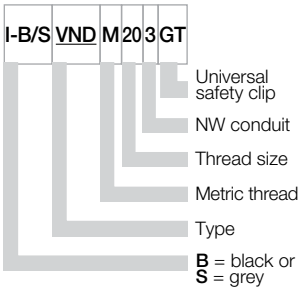
**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

**Features:**
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

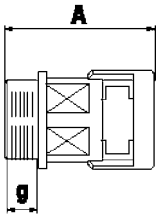
| Part No. IP66 | Part No. IP68 | Thread metric | Fits to conduit size: NW | metric | Thread length [mm] | Overall length [mm] |
|---|---|---|---|---|---|---|
| I-__VND-M12MGT | I-__VNV-M12M | M12 x 1.5 | 7 | 10 | 11.0 | 34.5 |
| I-__VND-M120GT | I-__VNV-M120 | M12 x 1.5 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-M160GT | I-__VNV-M160 | M16 x 1.5 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-M162GT | I-__VNV-M162 | M16 x 1.5 | 12 | 16 | 11.0 | 39.5 |
| I-__VND-M202GT | I-__VNV-M202 | M20 x 1.5 | 12 | 16 | 11.0 | 39.5 |
| I-__VND-M207GT | I-__VNV-M207 | M20 x 1.5 | 17 | 20 | 11.0 | 47.5 |
| I-__VND-M257GT | I-__VNV-M257 | M25 x 1.5 | 17 | 20 | 12.0 | 48.5 |
| I-__VND-M253GT | I-__VNV-M253 | M25 x 1.5 | 23 | 25 | 12.0 | 52.0 |
| I-__VND-M323GT | I-__VNV-M323 | M32 x 1.5 | 23 | 25 | 15.0 | 55.5 |
| I-__VND-M329GT | I-__VNV-M329 | M32 x 1.5 | 29 | 32 | 15.0 | 56.0 |
| I-__VND-M409GT | I-__VNV-M409 | M40 x 1.5 | 29 | 32 | 19.0 | 60.0 |
| I-__VND-M406GT | I-__VNV-M406 | M40 x 1.5 | 36 | 40 | 19.0 | 72.5 |
| I-__VND-M506GT | I-__VNV-M506 | M50 x 1.5 | 36 | 40 | 19.0 | 72.0 |
| I-__VND-M508GT | I-__VNV-M508 | M50 x 1.5 | 48 | 50 | 19.0 | 72.5 |
| I-__VND-M638GT | I-__VNV-M638 | M63 x 1.5 | 48 | 50 | 19.0 | 72.0 |

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

**Part No. structure metric**



# PMAFIX Connectors - Safety and Sealing Systems




## PMAFIX Connectors VN - straight, PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

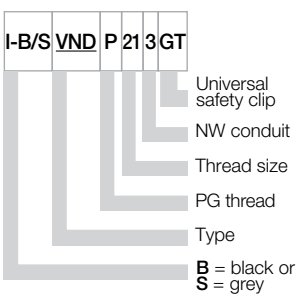
**Features:**

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

| Part No. IP66 | Part No. IP68 | Thread PG | Fits to conduit size: NW | metric | Thread length [mm] | Overall length [mm] |
|---|---|---|---|---|---|---|
| I-__VND-P07MGT-11 | I-__VNV-P07M | 7 | 7 | 10 | 11.0 | 34.5 |
| I-__VND-P070GT-11 | I-__VNV-P070 | 7 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-P072GT-11 | — | 7 | 12 | 16 | 11.0 | 39.0 |
| I-__VND-P09MGT-11 | I-__VNV-P09M | 9 | 7 | 10 | 11.0 | 34.5 |
| I-__VND-P090GT-11 | I-__VNV-P090 | 9 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-P092GT-11 | I-__VNV-P092 | 9 | 12 | 16 | 11.0 | 39.0 |
| I-__VND-P097GT-11 | I-__VNV-P097 | 9 | 17 | 20 | 11.0 | 47.5 |
| I-__VND-P11MGT-11 | I-__VNV-P11M | 11 | 7 | 10 | 11.0 | 34.5 |
| I-__VND-P110GT-11 | I-__VNV-P110 | 11 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-P112GT-11 | I-__VNV-P112 | 11 | 12 | 16 | 11.0 | 39.0 |
| I-__VND-P117GT-11 | I-__VNV-P117 | 11 | 17 | 20 | 11.0 | 47.5 |
| I-__VND-P13MGT-11 | — | 13.5 | 7 | 10 | 11.0 | 34.5 |
| I-__VND-P130GT-11 | I-__VNV-P130 | 13.5 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-P132GT-11 | I-__VNV-P132 | 13.5 | 12 | 16 | 11.0 | 39.0 |
| I-__VND-P137GT-11 | I-__VNV-P137 | 13.5 | 17 | 20 | 11.0 | 47.5 |
| I-__VND-P160GT-11 | — | 16 | 10 | 12 | 11.0 | 36.5 |
| I-__VND-P162GT-11 | I-__VNV-P162 | 16 | 12 | 16 | 11.0 | 39.0 |
| I-__VND-P167GT-11 | I-__VNV-P167 | 16 | 17 | 20 | 11.0 | 47.5 |
| I-__VND-P163GT-11 | I-__VNV-P163 | 16 | 23 | 25 | 11.0 | 51.0 |
| I-__VND-P213GT | I-__VNV-P213 | 21 | 23 | 25 | 12.0 | 52.0 |
| I-__VND-P299GT | I-__VNV-P299 | 29 | 29 | 32 | 12.0 | 53.0 |
| I-__VND-P296GT | I-__VNV-P296 | 29 | 36 | 40 | 12.0 | 67.5 |
| I-__VND-P366GT | I-__VNV-P366 | 36 | 36 | 40 | 13.0 | 66.0 |
| I-__VND-P368GT | — | 36 | 48 | 50 | 13.0 | 68.5 |
| I-__VND-P428GT | I-__VNV-P428 | 42 | 48 | 50 | 13.0 | 68.5 |
| I-__VND-P488GT | I-__VNV-P488 | 48 | 48 | 50 | 13.0 | 66.5 |

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

**Part No. structure PG**

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# PMAFIX Connectors - Safety and Sealing Systems

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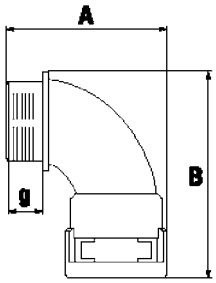



g = Thread length
A x B = External dimensions

## PMAFIX Connectors VB - 90° curved elbow, metric & PG

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, SVN4)

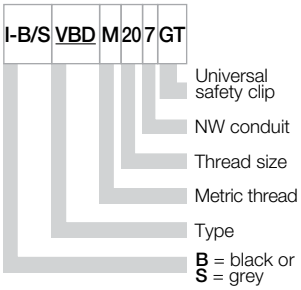
**Features:**
- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

| Part No. IP66 | Part No. IP68 | Thread metric | Fits to conduit size: NW | metric | Thread length [mm] | External dim. [mm] |
|---|---|---|---|---|---|---|
| I-__VBD-M207GT | I-__VBV-M207 | M20 x 1.5 | 17 | 20 | 11.0 | 47.5 x 73.0 |
| I-__VBD-M257GT | I-__VBV-M257 | M25 x 1.5 | 17 | 20 | 12.0 | 48.5 x 76.0 |
| I-__VBD-M253GT | I-__VBV-M253 | M25 x 1.5 | 23 | 25 | 12.0 | 57.5 x 83.0 |
| I-__VBD-M323GT | I-__VBV-M323 | M32 x 1.5 | 23 | 25 | 15.0 | 61.0 x 87.5 |
| I-__VBD-M329GT | I-__VBV-M329 | M32 x 1.5 | 29 | 32 | 15.0 | 70.5 x 93.0 |
| I-__VBD-M409GT | I-__VBV-M409 | M40 x 1.5 | 29 | 32 | 19.0 | 74.5 x 98.5 |
| I-__VBD-M406GT | I-__VBV-M406 | M40 x 1.5 | 36 | 40 | 19.0 | 85.0 x 121.0 |
| I-__VBD-M506GT | I-__VBV-M506 | M50 x 1.5 | 36 | 40 | 19.0 | 85.0 x 125.0 |
| I-__VBD-M508GT | I-__VBV-M508 | M50 x 1.5 | 48 | 50 | 19.0 | 98.5 x 130.0 |
| I-__VBD-M638GT | I-__VBV-M638 | M63 x 1.5 | 48 | 50 | 19.0 | 98.5 x 138.0 |

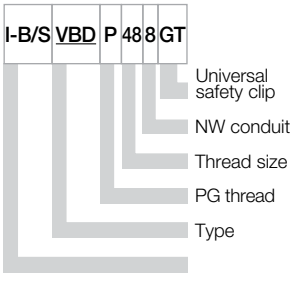
| Part No. IP66 | Part No. IP68 | Thread metric | Fits to conduit size: NW | metric | Thread length [mm] | External dim. [mm] |
|---|---|---|---|---|---|---|
| I-__VBD-P167GT | I-__VBV-P167 | 16 | 17 | 20 | 11.0 | 47.4 x 73.0 |
| I-__VBD-P213GT | I-__VBV-P213 | 21 | 23 | 25 | 12.0 | 57.5 x 85.0 |
| I-__VBD-P299GT | I-__VBV-P299 | 29 | 29 | 32 | 12.0 | 67.5 x 96.0 |
| I-__VBD-P366GT | I-__VBV-P366 | 36 | 36 | 40 | 13.0 | 79.0 x 123.0 |
| I-__VBD-P488GT | I-__VBV-P488 | 48 | 48 | 50 | 13.0 | 92.5 x 135.0 |

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability
For smaller conduit sizes NW 07 to NW 12 appropriate standard elbows of type VW are available

**Part No. structure metric**



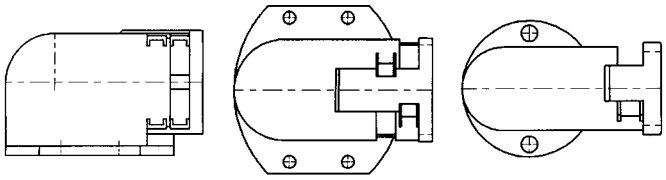

**Part No. structure PG**



## PMAFIX Connectors VO - Flange 90°

These **PMAFIX** connectors are used in a wide range of applications. Together with **PMAFLEX** conduits they offer the highest grade of safety and sealing.

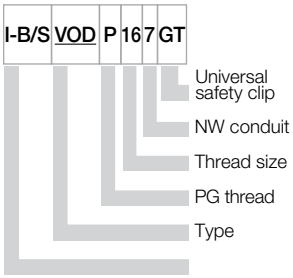
**Content of delivery IP66:**
Fitting with pre-assembled universal safety clips (AFN2), flange seal (FG04)
**Content of delivery IP68:**
Fitting with oval clips (OVN2), conduit and thread seal (NVN3, FG04)



| Part No. IP66 | Part No. IP68 | Fits to conduit size: NW | metric | Dimensions width x length x depth | Fixing screws |
|---|---|---|---|---|---|
| I-__VOD-P167GT | I-__VOV-P167 | 17 | 20 | 46.0 x 66.0 x 35.5 | 2 x M5 |
| I-__VOD-P213GT | I-__VOV-P213 | 23 | 25 | 65.5 x 70.0 x 43.0 | 2 x M6 |
| I-__VOD-P299GT | I-__VOV-P299 | 29 | 32 | 67.0 x 78.0 x 49.5 | 4 x M6 |
| I-__VOD-P366GT | I-__VOV-P366 | 36 | 40 | 85.0 x 102.0 x 65.5 | 4 x M6 |
| I-__VOD-P488GT | I-__VOV-P488 | 48 | 50 | 86.0 x 119.0 x 77.5 | 4 x M6 |

Fill in the blank with either “B” to order black or “S” to order grey*
*Grey part is a special order, call igus® for availability

**Part No. structure PG**



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# PMA Connectors - Accessories

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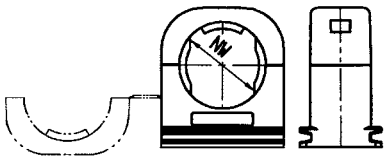
## PMAFIX FH-0 - One-piece system supports

The one-piece **PMACLIP** system support is designed for fixation of **PMAFLEX** conduits. This product can be used in all **machine and installation applications** for easy assembly of the PMA system.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)



**Features:**

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

| Part No. black | Part No. grey | Fits to conduit size: NW | metric | Dimensions width x length x depth | Fixing screw |
|---|---|---|---|---|---|
| I-BFH-07-0 | I-SFH-07-0 | 7 | 10 | 17.0 x 21.5 x 20.0 | 1 x M4 |
| I-BFH-10-0 | I-SFH-10-0 | 10 | 12 | 20.5 x 24.5 x 20.0 | 1 x M5 |
| I-BFH-12-0 | I-SFH-12-0 | 12 | 16 | 24.0 x 27.0 x 20.0 | 1 x M5 |
| I-BFH-17-0 | I-SFH-17-0 | 17 | 20 | 30.0 x 34.0 x 20.0 | 1 x M6 |
| I-BFH-23-0 | I-SFH-23-0 | 23 | 25 | 38.5 x 42.0 x 20.0 | 1 x M6 |
| I-BFH-29-0 | I-SFH-29-0 | 29 | 32 | 45.5 x 48.0 x 20.0 | 1 x M6 |
| I-BFH-36-0 | I-SFH-36-0 | 36 | 40 | 55.5 x 56.0 x 20.0 | 1 x M6 |
| I-BFH-48-0 | I-SFH-48-0 | 48 | 50 | 67.5 x 68.0 x 20.0 | 1 x M6 |

## PMAFIX VH - System supports

These PMACLIP system supports are designed for support and guidance of PMA conduits with fine or coarse profile and can be used in all machine building and installation applications. The system is safe against turning/movement and offers maximum sucrity with the additional safety clip, variable assembly due to six hole fastening and optimal strain relief due to integrated rib.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

**Features:**

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

| Part No. Support only | Part No. Locking clip | Part No. Complete | Fits to conduit size: NW | metric | Dimensions width x length x depth | Fixing screw |
|---|---|---|---|---|---|---|
| I-BVH-07 | BVH-07-020 | BVH-07-000 | 7 | 10 | 17.0 x 21.5 x 20.0 | 1 x M4 |
| I-BVH-10 | BVH-10-020 | BVH-10-000 | 10 | 12 | 20.5 x 24.5 x 20.0 | 1 x M5 |
| I-BVH-12 | BVH-12-020 | BVH-12-000 | 12 | 16 | 24.0 x 27.0 x 20.0 | 1 x M5 |
| I-BVH-17 | BVH-17-020 | BVH-17-000 | 17 | 20 | 35.0 x 36.0 x 36.0 | 6 x M5 |
| I-BVH-23 | BVH-23-020 | BVH-23-000 | 23 | 25 | 35.0 x 44.0 x 36.0 | 6 x M5 |
| I-BVH-29 | BVH-29-020 | BVH-29-000 | 29 | 32 | 46.0 x 52.0 x 40.0 | 6 x M5 |
| I-BVH-36 | BVH-36-020 | BVH-36-000 | 36 | 40 | 53.0 x 58.0 x 60.0 | 6 x M5 |
| I-BVH-48 | BVH-48-020 | BVH-48-000 | 48 | 50 | 66.0 x 72.0 x 60.0 | 6 x M5 |

## PMAFIX GPS - One-piece System supports for stacking

The **PMAFIX** system supports for stacking are specially designed for increased mechanical requirements in the traction and heavy machine building industries. The one-piece systems supports offer a clasp for easy pre-mounting and final assembly. Fixation in standard rails type C and strain relief due to gripping around the conduit. In addition these products are partially stackable.

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +320°F (+160°C)

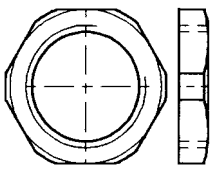
**Features:**

- high grade formulated polyamide
- excellent impact strength
- self-extinguishing
- free of halogen, phosphor and cadmium

**Stacking options**
The following nominal widths can be combined for stacking:

- NW 17 with NW23
- NW 29 with NW 36
- NW 48 with NW 56

| Part No. | Fits to conduit size | | | Dimensions | | |
|---|---|---|---|---|---|---|
| fine profile | NW | metric | DIN-NW | width | height | depth |
| BGPS-17 | 17 | 20 | 2 | 70.0 | 45.0 | 30.0 |
| BGPS-23 | 23 | 25 | 2 | 70.0 | 45.0 | 30.0 |
| BGPS-29 | 29 | 32 | 3 | 85.0 | 60.0 | 30.0 |
| BGPS-36 | 36 | 40 | 3 | 85.0 | 60.0 | 30.0 |
| BGPS-48 | 48 | 50 | 4 | 115.0 | 90.0 | 30.0 |
| BGPS-56 | 56 | - | 4 | 115.0 | 90.0 | 30.0 |



## PMA MN - Hexagonal Lock Nuts, metric & PG

These hexagonal lock nuts are suitable for a wide range of applications. High torque guarantees a safe connection of the system. Made of reinforced polyamide glass fiber

**Temperature range:**
-40°F to +221°F (-40 °C to +105 °C), or a short time up to +302°F (+150°C)

| Part No. | Part No. | Fits to thread: | Wrench | Dimensions |
|---|---|---|---|---|
| black | grey | metric | size | height |
| I-BMN-M12 | I-GMN-M12 | M12 x 1.5 | 17.0 | 5.0 |
| I-BMN-M16 | I-GMN-M16 | M16 x 1.5 | 22.0 | 5.0 |
| I-BMN-M20 | I-GMN-M20 | M20 x 1.5 | 27.0 | 6.0 |
| I-BMN-M25 | I-GMN-M25 | M25 x 1.5 | 32.0 | 6.0 |
| I-BMN-M32 | I-GMN-M32 | M32 x 1.5 | 41.0 | 7.0 |
| I-BMN-M40 | I-GMN-M40 | M40 x 1.5 | 50.0 | 7.0 |
| I-BMN-M50 | I-GMN-M50 | M50 x 1.5 | 60.0 | 8.0 |
| I-BMN-M63 | I-GMN-M63 | M63 x 1.5 | 75.0 | 8.0 |

| Part No. | Part No. | Fits to thread: | Wrench | Dimensions |
|---|---|---|---|---|
| black | grey | PG | size | height |
| I-BMN-07 | I-GMN-07 | 7 | 19.0 | 5.0 |
| I-BMN-09 | I-GMN-09 | 9 | 22.0 | 5.0 |
| I-BMN-11 | I-GMN-11 | 11 | 24.0 | 5.3 |
| I-BMN-13 | I-GMN-13 | 13.5 | 27.0 | 6.3 |
| I-BMN-16 | I-GMN-16 | 16 | 30.0 | 6.3 |
| I-BMN-21 | I-GMN-21 | 21 | 36.0 | 7.0 |
| I-BMN-29 | I-GMN-29 | 29 | 46.0 | 7.0 |
| I-BMN-36 | I-GMN-36 | 36 | 60.0 | 8.0 |
| I-BMN-48 | I-GMN-48 | 48 | 70.0 | 8.0 |

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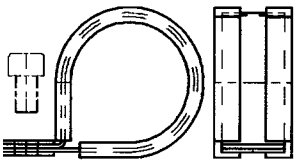


## PMA SGB - Tube clamps

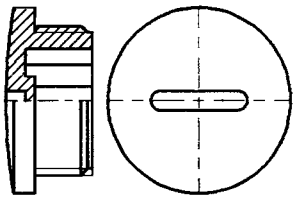
These tube clamps are used for the mounting and smooth connection to the PMA conduits in the general machine and installation applications. They are especially suitable for the mounting of static conduits.

**Temperature range:** -58°F to +221°F (-50 °C to +105 °C)

**Features:**

- galvanized steel according to DIN 3016
- Elastomer free of halogen

| Part No. | Fits to conduit size NW | Fits to conduit size metric | Dimensions width [mm] | Fixing screw |
|---|---|---|---|---|
| I-SGB-07 | 7 | 10 | 13.0 | 1 x M4 |
| I-SGB-09 | 10 | 12 | 13.0 | 1 x M4 |
| I-SGB-11 | 12 | 16 | 13.0 | 1 x M4 |
| I-SGB-16 | 17 | 20 | 16.0 | 1 x M5 |
| I-SGB-21 | 23 | 25 | 16.0 | 1 x M5 |
| I-SGB-29 | 29 | 32 | 19.0 | 1 x M6 |
| I-SGB-36 | 36 | 40 | 19.0 | 1 x M6 |
| I-SGB-48 | 48 | 50 | 19.0 | 1 x M6 |



## PMA 514 - Plug Screws, metric & PG

These plug screws are suitable for an accurate termination where no thread holes in casing and distribution boxes are needed.

**Temperature range:** -4°F to +212°F (-20 °C to +100 °C), or a short time up to +302°F (+150°C)

**Features:**

- product with metric thread: PA-GF
- product with PG thread: PS
- free of halogen, phosphor and cadmium
- IP54

| Part No. | Fits to thread metric | Outside Ø [mm] | Total length [mm] | Thread length [mm] |
|---|---|---|---|---|
| I-514-M12 | M12 x 1.5 | 15.0 | 8.0 | 6.0 |
| I-514-M16 | M16 x 1.5 | 20.0 | 9.0 | 6.0 |
| I-514-M20 | M20 x 1.5 | 24.0 | 9.5 | 6.0 |
| I-514-M25 | M25 x 1.5 | 30.0 | 11.5 | 8.0 |
| I-514-M32 | M32 x 1.5 | 37.0 | 12.0 | 8.0 |
| I-514-M40 | M40 x 1.5 | 46.0 | 13.0 | 8.0 |
| I-514-M50 | M50 x 1.5 | 56.0 | 15.0 | 10.0 |
| I-514-M63 | M63 x 1.5 | 70.0 | 17.0 | 12.0 |

| Part No. | Fits to thread PG | Outside Ø [mm] | Total length [mm] | Thread length [mm] |
|---|---|---|---|---|
| I-514-07 | 7 | 15.0 | 8.0 | 6.0 |
| I-514-09 | 9 | 19.0 | 9.5 | 6.5 |
| I-514-11 | 11 | 22.0 | 10.0 | 6.5 |
| I-514-13 | 13.5 | 25.0 | 10.0 | 6.5 |
| I-514-16 | 16 | 27.0 | 10.0 | 6.5 |
| I-514-21 | 21 | 33.0 | 12.0 | 8.0 |
| I-514-29 | 29 | 44.0 | 11.5 | 8.0 |
| I-514-36 | 36 | 55.0 | 14.0 | 10.0 |
| I-514-48 | 48 | 68.0 | 16.0 | 12.0 |

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Fax 1-401-438-7270

Internet: http://www.igus.com
email: sales@igus.com
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# PMA Connectors - Accessories

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| Standard Corrugated Conduits | | | | | |
|---|---|---|---|---|---|
| **Products** | **CYL PA6** | **VCS PA6** | **PIS PA12** | **FH** | **VH** |
| Tube size: metric / width [mm] | Very flexible, medium wall corrugated conduits | Flexible, very heavy corrugated conduits | Highly flexible medium wall corrugated conduits | PMACLIP - one-piece system support | PMACLIP two-piece system support |
| 10 / 07 | CYLT-07* – | VCST-07* – | PIST-07* – | *FH-07-0 | *VH-17-000 |
| 12 / 10 | CYLT-10* – | VCST-10* – | PIST-10* – | *FH-10-0 | *VH-23-000 |
| 16 / 12 | CYLT-12* – | VCST-12* – | PIST-12* – | *FH-12-0 | *VH-29-000 |
| 20 / 17 | CYLT-17* – | VCST-17* VCSG-17* | PIST-17* PISG-17* | *FH-17-0 | *VH-36-000 |
| 25 / 23 | CYLT-23* CYLG-23* | – VCSG-23* | PIST-23* PISG-23* | *FH-23-0 | *VH-48-000 |
| 32 / 29 | CYLT-29* CYLG-29* | – VCSG-29* | PIST-29* PISG-29* | *FH-29-0 | |
| 40 / 36 | CYLT-36* CYLG-36* | – VCSG-36* | PIST-36* PISG-36* | *FH-36-0 | |
| 50 / 48 | CYLT-48* CYLG-48* | – VCSG-48* | PIST-48* PISG-48* | *FH-48-0 | |
| | | VCSG-56* | | | |
| | | VCSG-70* | | | |
| | | VCSG-95* | | | |

* = replaced by “B” for black or “S” for gray  T or D = fine profile  G = coarse profile

| Standard Corrugated Conduits | | | | | |
|---|---|---|---|---|---|
| **Products** | **CYL PA6** | **VCS PA6** | **PIS PA12** | **FH** | **VH** |
| Tube size: metric / width [mm] | Very flexible, medium wall corrugated conduits | Flexible, very heavy corrugated conduits | Highly flexible medium wall corrugated conduits | PMACLIP - one-piece system support | PMACLIP two-piece system support |
| 10 / 07 | CYLT-07* – | VCST-07* – | PIST-07* – | *FH-07-0 | *VH-17-000 |
| 12 / 10 | CYLT-10* – | VCST-10* – | PIST-10* – | *FH-10-0 | *VH-23-000 |
| 16 / 12 | CYLT-12* – | VCST-12* – | PIST-12* – | *FH-12-0 | *VH-29-000 |
| 20 / 17 | CYLT-17* – | VCST-17* VCSG-17* | PIST-17* PISG-17* | *FH-17-0 | *VH-36-000 |
| 25 / 23 | CYLT-23* CYLG-23* | – VCSG-23* | PIST-23* PISG-23* | *FH-23-0 | *VH-48-000 |
| 32 / 29 | CYLT-29* CYLG-29* | – VCSG-29* | PIST-29* PISG-29* | *FH-29-0 | |
| 40 / 36 | CYLT-36* CYLG-36* | – VCSG-36* | PIST-36* PISG-36* | *FH-36-0 | |
| 50 / 48 | CYLT-48* CYLG-48* | – VCSG-48* | PIST-48* PISG-48* | *FH-48-0 | |
| | | VCSG-56* | | | |
| | | VCSG-70* | | | |
| | | VCSG-95* | | | |

* = replaced by “B” for black or “S” for gray  T or D = fine profile  G = coarse profile

| JUMBO Corrugated Conduits PMAGRIP | | | | |
|---|---|---|---|---|
| **Products** | **PIHG PA12** | **BGG** | **BGO** | **SGS** |
| Tube size: Width [mm] | Highly flexible medium wall corrugated conduits | PMAGRIP-straight | PMAGRIP-90° angle | PMAGRIP-tube clamps |
| 56 | PIHG-56* | *GG-56 | *GO-56 | SGS-56 |
| 70 | PIHG-70* | *GG-70 | *GO-70 | SGS-70 |
| 95 | PIHG-95* | *GG-95 | *GO-95 | SGS-95 |
| 125 | PIHG-125* | *GG-125 | – | SGS-125 |

# PMA Connectors - Accessories



**PMAFIX**

| Products | IP66 - VN | IP66 - VA | IP66 - VW | IP66 - VB | IP68 - VNZ | MN |
|---|---|---|---|---|---|---|
| Thread Typ | PMAFIX straight | PMAFIX 45° angle | PMAFIX 90° angle | PMAFIX 90° elbow angle | Straight with strain relief | PMA hexagonal lock nuts |
| M12x1.5 | *VND-M12MGT | – | *VWD-M12MGT | – | – | *MN-M12 |
| M12x1.5 | *VND-M120GT | *VAD-M120GT | *VWD-M120GT | – | – | *MN-M12 |
| M16x1.5 | *VND-M162GT | *VAD-M162GT | *VWD-M162GT | – | *VNZ-M162S | *MN-M16 |
| M20x1.5 | *VND-M207GT | *VAD-M207GT | *VWD-M207GT | *VBD-M207GT | *VNZ-M207S | *MN-M20 |
| M25x1.5 | *VND-M253GT | *VAD-M253GT | *VWD-M253GT | *VBD-M253GT | *VNZ-M253S | *MN-M25 |
| M32x1.5 | *VND-M329GT | *VAD-M329GT | *VWD-M329GT | *VBD-M329GT | *VNZ-M329S | *MN-M32 |
| M40x1.5 | *VND-M406GT | *VAD-M406GT | *VWD-M406GT | *VBD-M406GT | *VNZ-M406S | *MN-M40 |
| M50x1.5 | *VND-M508GT | *VAD-M508GT | *VWD-M508GT | *VBD-M508GT | *VNZ-M508S | *MN-M50 |

* = replaced by “B” for black or “S” for gray

**PMAFIX**

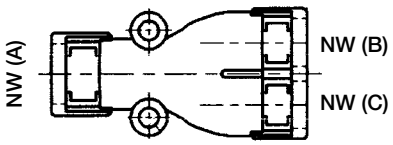
| Products | | IP66 - VOD | IP66 - VY | IP66 - FT/VT | IP66 - FV | SGB |
|---|---|---|---|---|---|---|
| Tube size: metric | width [mm] | PMAFIX flange 90° | PMAFIX Y-distribution piece | PMAFIX T-distribution piece | PMAFIX V-distribution piece | PMAFIX-tube clamps |
| 10 | 07 | – | – | – | – | SGB-07 |
| 12 | 10 | – | *VYD-100707GT | *FTD-101010GT | *FVD-100707GT | SGB-09 |
| 16 | 12 | – | *VYD-121010GT | *FTD-121212GT | *FVD-121010GT | SGB-11 |
| 20 | 17 | *VOD-P167GT | *VYD-171212GT | *FTD-171717GT | *FVD-171212GT | SGB-16 |
| 25 | 23 | *VOD-P213GT | *VYD-231717GT | *VTD-232323GT | *FVD-231717GT | SGB-21 |
| 32 | 29 | *VOD-P299GT | *VYD-292323GT | *FTD-292929GT | – | SGB-29 |
| 40 | 36 | *VOD-P366GT | *VYD-362929GT | *VTD-363636GT | – | SGB-36 |
| 50 | 48 | *VOD-P488GT | *VYD-483636GT | – | – | SGB-48 |

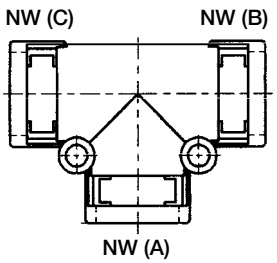
* = replaced by “B” for black or “S” for gray

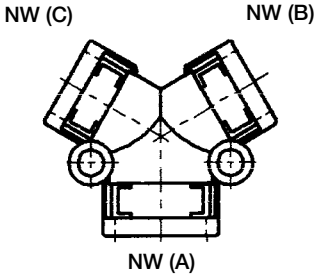
## PMAFIX - Order Example

XXXX-10 07 07 XX

## PMAFIX - Distribution Piece

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