motion? plastics!
Increase service life and reduce costs ... 
... the goal of all igus® products is to always offer at least one of these. Other benefits are the fast delivery time, from 24hrs until shipping, plus service life calculation for nearly all product lines. We will be happy to send you free sample parts for your testing and prototypes. Tested and proven service life. Calculate and order online.

Available from stock.
Ready for delivery in 24–48hrs.
The delivery times indicated correspond to the average time until the ordered goods are dispatched.

No minimum order value! No surcharges!
No minimum order value with igus®.
Just order the amount you need.

Chain – Cable – Guarantee
Beyond the legal warranty we also vouch for wear and tear. With a warranty certificate!

“8 to 8 plus Saturday” service
Monday to Friday 8.00am to 8.00pm
Saturday from 8.00am to 12.00pm

Order hotline
Phone (01604) 677240
E-mail sales@igus.co.uk

Order around-the-clock - online shop
Discover 100,000 products in our online shop and order around-the-clock!

Calculate and configure online
Download 3D CAD models free of charge and quickly find the product you are looking for with our product finders and intelligent filters.

igus® online live chat
There are many ways to reach us, including our online live chat.

Do you have any questions?
If you have any questions, simply call us or use our online tools at www.igus.co.uk

Designing with igus® e-chains® - calculation tools, diagrams, applications readychain®, and readycable®, igus® installation service with guarantee

igus® solutions for simple applications
e-rib, E1, snapchain, office chain®

Cost-effective, easy to fill e-chains® with "easy" design
easychain®

Zip-open, easy to fill e-chains®
zipper e-chains® and e-tubes

All-rounder e-chains® and e-tubes
micro ... mini ... medium
E2 micro, mini, E2.1 micro, E2.1, E2/000

Protection against dirt and swarf
openable igus® e-tubes
E2 e-tubes - series E2 R100, E2 R, R2.1, RX

E4 - universal modular kit -
e-chains® and e-tubes for any application
E4.1L, E4.1, E4/light

Cleanroom e-chains® and e-tubes
low noise, low vibration and high dynamics
T3, E3, E6.1, E6, e-skin®

e-chain® designed according to hygienic principles - FDA and EU-compliant materials
System TH3
Register now for the igus® newsletter ... 

- Information on our latest products
- Free samples and services
- Invitations to trade fairs and free entry tickets
- Webinars on current topics around plastics technology
- Exclusive insights into our test laboratories and test results
- Real-world application examples

Register here: 
► www.igus.co.uk/newsletter

Quickly find, configure, calculate and order the best e-chain®
► online.igus.co.uk
the-chain - moving energy made easy

Lightweight, strong and long service life: igus® e-chain systems® for every type of movement

Millions of igus® e-chains® are working in customer applications worldwide - from beverage dispensers to steelworks. They have a modular design and are therefore easy to assemble. They are resistant to different media and are ideal for very small bend radii as well as for large, heavy cables and hoses.

e-chains® are the umbilical cord of modern machines. They are constantly moving and supply power, data and energy. igus® has been developing, producing and testing polymer e-chains® since 1971. Our expert knowledge is being continuously refined with the help of our customers to constantly improve our product range.

Tested and proven service life. Calculate and order online.

Universal installation
- Many possibilities in terms of movement and length
- For high dynamic loads and tough service life requirements
- For different environments and climates
- Innovative products that can be assembled quickly
- Large range of products - find the right solution quickly
- System quotes, including made-to-measure harnessing and “turnkey” assembly

More information
▶ www.igus.co.uk/the-chain

The award-winning igus® e-chain systems® are certified and tested
Ready-to-install energy supply systems - reduce assembly and harnessing time by 95%

Ready-made energy supply systems are developed, fitted with connectors and delivered tailor-made. The customers can dispense with their own storage space for e-chains®, cables and connectors, saving time and space for internal logistics and for assembly and installation of their energy supply system. The ready-made modules reduce process costs of our customers by up to 80% and accelerate cycle times radically. Machine downtimes are also minimised. To achieve this, we supply the systems worldwide from 12 assembly and logistics centres.

- Eliminate storage costs for cables, e-chains® and connectors
- Cut turnaround times by half
- Flexible response to order fluctuations
- Reduce the number of suppliers and orders by 75%
- Minimise your machine downtime

www.igus.co.uk/readychain

... other igus® services

Engineering - customer-specific developments with many solutions from the modular kit

www.igus.co.uk/projects

Installation - predictable installation time for your system at your premises; helps you plan and contributes to high plant availability

www.igus.co.uk/installation

Open-Space - save valuable time for engineering whilst reducing process costs

www.igus.co.uk/openspace
Reduce process cost: configure igus® e-chains® online

Simplifying processes for customers is our primary goal. For almost every igus® product you will find further details, data and facts online. These include:

- Online tools for calculating service life
- Online configuration tools
- Comparisons and selection tools
- 3D and 2D CAD files
- PDF-files, data sheets and more
- Application pictures and videos
- Assembly instructions
- Personal support
- Catalogue and sample ordering
- Online price list and online shop

Over 30 helpful online tools for quick finding, configuring and calculating your product. No registration necessary. 3D CAD models online for downloading. Easy to use.

Visit our website and make use of all the advantages.

Example: [www.igus.co.uk/2400](http://www.igus.co.uk/2400)

Create your complete e-chain system® with cables with a few mouse clicks [www.igus.co.uk/configurator](http://www.igus.co.uk/configurator)

“Search” - the chain product finder and configurator

- Find the right e-chain® quickly and easily by entering your application data and parameters.

“Configure” e-chains® with the interior separator configurator

- Quickly and easily determine interior separation for the selected e-chain®; just drag and drop
- The configuration can be transferred automatically to your part list

“Calculate e-chain® length”

- Calculate the e-chain® length and see all installation dimensions.

“Generate 3D file”

- e-chain® CAD library
- Download and save CAD data free of charge without having to register
- Nearly 30 different 3D and 2D formats available
- Data on all products are updated and extended on a regular basis

[www.igus-CAD.com](http://www.igus-CAD.com)
Quality from the igus® laboratory

Tested and proven every day.
Applications involving high duty cycles, speeds and accelerations or demanding environmental conditions require proven systems especially for e-chains®, cables, polymer bearings and linear systems. igus® constantly conducts tests at its own laboratory under real-world conditions. Every year, we conduct more than 4,100 tests on e-chains® and cables, and over 12,000 tests on plain bearings. These tests focus on push/pull forces, friction values and wear rates. Other factors like speed, load, dirt, weathering, cold and impact are also tested. Our laboratory is also at your disposal. If we don’t have data for your type of application, we can conduct a test representative of your requirements.

www.igus.co.uk/test

Video online
△ www.igus.co.uk/testlab

Global Warranty Certificate

igus® system warranty - every application is different.
igus® warranty certificates can be issued for your individual application. Ask for the igus® warranty: “chain, cable, guarantee”

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

Electronic checking and archiving for every e-chain® production batch

Noise level test inside an igus® acoustic cell

igus® dynamic bending test

Long-term wear and service life test

Speeds up to 10m/s, acceleration up to 200m/s² are tested by igus®

Long travel test facility - 125m travel length, speed 300m/min

2,750m² igus® lab. The largest test lab in the energy chain industry with 65 e-chain® test machines and about 7,515 test results per year. 253 simultaneous tests for e-chain® and chainflex® cables with more than 10 billion e-chain® cycles (in the e-chains® and chainflex® lab per year) ensure reliable energy supply systems for all industries and installation types.
Worldwide, quick and reliable. The igus® service

Delivery and consultation Monday to Friday from 08:00am-08:00pm and Saturday from 08:00am-12:00pm

Innovation and service are the focus of our corporate philosophy. We have therefore put together an extensive package of services for you: no minimum order quantity, speedy delivery from 24hrs, more than 100,000 products from stock. Order an igidur® bearing or a harnessed standard portal from stock in 24 hours at no extra cost. Rapid delivery worldwide guaranteed. Spare parts are delivered from stock in the shortest possible time.

Take advantage of further service options from igus®:

- **Free samples**: we will be happy to send you free samples for testing in your application. Order here ▶ [www.igus.co.uk/samples](http://www.igus.co.uk/samples)
- **The monthly newsletter** keeps you regularly informed about new igus® solutions. Register here ▶ [www.igus.co.uk/newsletter](http://www.igus.co.uk/newsletter)

Order at igus®: no minimum order quantities, no surcharges.

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**Single components**

For example: One e-chain® link, 6m of e-chain®, 3 strain relief elements, etc.

**Customised e-chain systems®**

For example: 11.46m of e-chains® with interior separators, mounting brackets and strain relief elements according to your specifications. Also with loose accessories: chainflex® cables, guide troughs, mounting brackets and strain reliefs

**Harnessed systems**

For example: readychain® "basic"

Simple, harnessed e-chain systems® including installed cables without connectors, labeled and tail lengths to your specifications.

**Complex harnessed systems**

For example: readychain® "Premium"

Customised harnessed e-chain system® including cables as well as connectors, mounting brackets and other components to your specifications.

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**24hrs**

**24-48hrs**

**3-5 business days**

**10 business days**

Single components

For example: One e-chain® link, 6m of e-chain®, 3 strain relief elements, etc.

Customised e-chain systems®

For example: 11.46m of e-chains® with interior separators, mounting brackets and strain relief elements according to your specifications. Also with loose accessories: chainflex® cables, guide troughs, mounting brackets and strain reliefs

Harnessed systems

For example: readychain® "basic"

Simple, harnessed e-chain systems® including installed cables without connectors, labeled and tail lengths to your specifications.

Complex harnessed systems

For example: readychain® "Premium"

Customised harnessed e-chain system® including cables as well as connectors, mounting brackets and other components to your specifications.

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*myigus® space online*

*igus® Newsletter*
The flexible igus® factory

Investments in better technology and faster delivery times

Nearly 200,000 customers worldwide trust “plastics for longer life®” - manufacturing products at low-cost, while also ensuring quality. Plastics are becoming increasingly affordable and technical benefits continue to grow. We have been developing, making and selling our products according to this principle for years. In view of the potential of plastics technology, we offer a wide and varied range of tribocomponents. Wear resistant parts as catalogue items are on stock, to allow us to complete customer requests within hours and ship.

igus® is continuing its growth trend and is focusing more than ever on sophisticated yet simpler solutions for all applications and budgets.

"For us, customers have the same significance as the sun to life on earth. The sun gives light, warmth and energy; our customers give us ideas, work and money."
Global standards - igus® is close to you

Worldwide individual consultation: by phone or at your premises. 35 subsidiaries worldwide.

A large network of sales engineers are at your disposal in the UK and worldwide. We will gladly provide consultation at your premises, supply assembly instructions and tools to installation sites, as well as measure installation spaces and check environmental conditions on site.

There are 3,800 employees in Germany and 35 international subsidiaries, plus distributors in another 55 countries to guarantee a rapid delivery worldwide.

- Customer-specific projects and special solutions: for every challenge, we will work with you to find a solution and provide a sample for your application free of charge
- We are wherever you need us: numerous e-chain® and polymer bearing consultants are at your disposal at any time
- Hands-on with our products at 200 trade fairs worldwide
- Individually at your premises with our mobile exhibition

In a face-to-face meeting

Technical consultation at your premises

Worldwide open offices - for example in China

igus® at trade fairs

igus® mobile exhibition

Worldwide modular factories - for example in the USA

All addresses on last page.
**igus® - close to the customer since 1964**

From a garage to the global market with tribopolymers

What began in 1964 with a single injection moulding machine in a garage in Cologne has become a global enterprise within half a century. It all started more than 50 years ago when Günter Blase, who established the company, had an idea about the potential of polymer materials. A mere one year after the company was established, an injection moulding machine about the size of a sewing machine was used to make the very first products. In 1971, igus® delivered the first e-chain®. The company’s own design engineering team has been developing the range of plastic chains and assembles the appropriate energy chain system - the "umbilical cord" of all modern machines - in line with the wishes of the customer. In the course of its history, igus® gradually grew to become a systems supplier. In 1989, the company developed the CF1, which was its own first chainflex® cable specially designed for use in energy chains.

Today, the 3,800 employees come up with new ideas daily, make high-quality products, ensure streamlined processes and delivery times and, above all, stay close to the customer. On average, igus® dispatches around 5,500 consignments per day. In order to ensure speedy and individual delivery, the customers receive exactly the product they need for their application from 14 storage and assembly/installation centres worldwide: as a single component or as a complete system, also installed or assembled on site upon request.
Moving energy made easy - for any industry

Solutions with igus® e-chain systems®
The task of igus® e-chain systems® is to reliably supply energy and data to moving equipment. Such equipment is constantly in motion and has to function reliably in difficult ambient conditions as well as under high loads and at high speeds. e-chain systems® can be used universally in these kinds of application.

More exciting application examples
► www.igus.co.uk/applications

Hamstrung “readychain®” energy chains reduce costs sustainably

Tunnelling machine - reliable E4.1 energy supply in spite of dirt and vibration

The worldwide longest e-chain® travel of 615m with igus® rol e-chains® and chainflex® cables in a power plant

Long travel, side-mounted installation using the vibration-free and low noise series E6.29 in a camera application

Igus® e-chain systems® replace conventional energy supply solutions for cranes

Igus® triflex® R e-chains® for robots that machine moulded plastic parts

The world’s largest plastic e-chain® (as of 05/2015), the igus® E4.1 series E4.350. Equipped with rollers, it travels reliably and energy efficiently. In this case on a slurry vacuum application: 150m travel, 100kg/m filling weight

For example: machine tools, woodworking equipment, cranes, material handling systems and robots ...
Find references online ... take a look at over 60 industry branches

Different industries need different solutions. Whether in mechanical engineering, automobile manufacturing or in the robot industry - igus® offers customised support for special applications. igus® already has many years of experience and specialised resources for many industries. ► www.igus.co.uk/industry

Quickly find and configure products and calculate service life - all online.

Using our online product finders, you can find the right igus® product and get a service life prediction. You can also download 3D CAD files for free and shop around the clock. ► www.igus.co.uk/online

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Our offers are exclusively directed to dealers / resellers. The delivery times indicated correspond to the time until the goods are dispatched, whereby transport costs are not included in the price. We recommend that you always check the suitability of the products for a particular purpose in a practical trial. Please avail of our consulting services.

All products that are marked “New” in the catalogue have been added since the last version of the catalogue published in 2017.


igus® WebGuide - the “TV guide” for engineers

The WebGuide is the first technical printed catalogue that is entirely designed as a quick online guide. On selection of the desired product it leads straight to the internet. “Zapping” online ... find, configure, order ... followed by speedy delivery. Also available as an App for Android and iOS.

More information ► www.igus.co.uk/webguide
Product overview

**igus® solutions for simple applications**
- Reinforcement for corrugated tubes: e-rib | Easy to clip-on, New
  - Reinforcement for existing corrugated tube systems from different manufacturers. Easy to retrofit, simply clip the e-rib onto a corrugated hose. From page 162

**e-chain® in a strip**
- E1 | Openable
  - Cost-effective, one-piece strip design for simple applications. Openable along the outer radius. Easy to fill. From page 174

**e-chains® for cable bundles**
- Snapchain | Adjustable loops
  - Guide cable bundles quickly and easily; loops open along the outer radius (TZ) or along the inner radius (TE). From page 182

**3D CAD, configurators, service life calculators and more**
- www.igus.co.uk

**igus® solutions for simple applications**
- Zip fastening e-chains® and e-tubes
  - E-chains zipper | Openable
    - Open and close at lightning speed. Crossbars on a strip. Zip-open along the outer radius. From page 226
  - E-tubes zipper | Openable
    - Fully enclosed design. Open and close at lightning speed. Lids on a strip. Zip-open along the outer radius. From page 226

**For the smallest applications...**
- E-chains® one-piece design
  - E2 micro | Non-openable
    - For the smallest applications. One-piece, non-openable. From page 260

**... medium sizes**
- E-chains®, one-piece design
  - E2 mini | Openable
    - Openable along the inner radius from one side with film hinge. From page 290
  - E-chains®, two-piece design
    - E2 mini | Openable
      - Openable along the outer radius, from one side. From page 290

**... smallest inner heights and bend radii**
- E-chains®, one-piece design
  - E2 micro | Openable
    - Openable along the inner radius from one side with film hinge. From page 260
  - E-chains®, two-piece design
    - E2 micro | Openable
      - Openable along the outer radius, from one side. From page 260

**The new "small" E2 micro standard**
- E-chains®, one-piece design
  - E2.1 micro | Non-openable
    - New generation, strong, low-noise, for the smallest installation spaces. One-piece, non-openable. From page 320
  - E-chains®, two-piece design
    - E2.1 micro | Openable
      - New generation, strong, low-noise, for the smallest installation spaces. Crossbars openable along the inner radius, from both sides. From page 320

**Easy to fill and cost-effective**
- E-chains® version E
  - Easy chain® "easy" design
    - Split crossbar along the outer radius. Some types with multi-chamber design. From page 198
  - E-chains® version Z
    - Easy chain® "easy" design
      - Split crossbar along the inner radius. Some types with multi-chamber design. From page 198

**Energy supply for furniture**
- Office e-chain® "easy" design
  - This e-chain® was designed especially for the furniture industry. Split crossbar along the inner radius. From page 188

**Small and...**
- E-chains®, one-piece design
  - E2 mini | Non-openable
    - One-piece, non-openable. From page 290
  - E-chains®, two-piece design
    - E2.1 micro | Openable
      - New generation, strong, low-noise, for the smallest installation spaces. Crossbars openable along the outer radius, from both sides. From page 320
E2.1 - new generation E2/000 e-chains®

e-chains®

e-chains®, two-piece design

E2.1 | Openable here

More usable interior space with outer height the same as E2/000 e-chains®. Crossbars openable along the inner radius, from both sides ➤ From page 334

E2/000 ...

e-chains®, two-piece design

E2/000 | Openable

High strength, quiet operation. Crossbars openable along the inner radius, from both sides ➤ From page 360

... wide range of applications, the proven all-rounder

e-chains®, two-piece design

E2/000 | Openable

High strength, quiet operation. Crossbars openable along the outer radius, from both sides ➤ From page 360

e-tubes, two-piece design

E2/000 | Openable

High strength, quiet operation. Crossbars openable along the inner radius, from both sides ➤ From page 360

... extremely swarf-resistant

e-tubes, two-piece design

E2/000 | Openable

High strength, quiet operation. Lids openable along the inner radius, from both sides ➤ From page 360

E-tubes, two-piece design

E2/000 | Openable

High strength, quiet operation. Lids openable along the inner radius, from both sides ➤ From page 360

Protection against dirt and swarf ... cost-effective ...

e-tubes

R100 | Openable

Cost-effective swarf protection. Lids openable along the inner radius, from both sides ➤ From page 428

... smooth operation ...

e-tubes

R100 | Openable

Swarf protection at higher speeds and smooth running. Lids removable along outer radius ➤ From page 454

... for almost any application

e-chains® with crossbars every 2nd link

E4.1 | Openable

For almost any application, the standard. Crossbars removable along the inner and outer radius ➤ From page 566

Light, strong and ...

e-chains® with crossbars every link

E4/light | Openable

For especially demanding applications. Crossbars removable along the inner and outer radius ➤ From page 560

...strong ...

e-tubes

R2 | Openable

Cost-effective, strong e-tubes. Lids openable along the inner radius, from both sides ➤ From page 478

e-tubes

R2 | Openable

Cost-effective, strong e-tubes. Lids openable along the outer radius, from both sides ➤ From page 478

... extremely swarf-resistant

e-tubes

RX | Openable

Extremely swarf-resistant. Round contour prevents swarf accumulation. Lids removable along outer radius ➤ From page 502

Half e-tubes, two-piece design

E2/000 | Openable

High strength, quiet operation. Crossbars openable along the outer radius, from both sides ➤ From page 360

E-tubes, two-piece design

E2/000 | Openable

High strength, quiet operation. Crossbars openable along the inner radius, from both sides ➤ From page 360

... for almost any application

e-chains® with crossbars every link

E4.1 | Openable

For almost any application, the standard. Crossbars removable along the inner and outer radius ➤ From page 566

One e-chain® series ...

e-chains® with crossbars every link

E4.1 | Openable

For especially demanding applications. Crossbars removable along the inner and outer radius ➤ From page 566

26-48

26-48

21-45

21-45

21-45

21-45

21-45

21-45

26-48

26-48

25-45

25-45

26-75

26-75

21-350

21-350

28-108

28-108

32-80

32-80

31-120

31-120

31-64

31-64

Light and cable-friendly design. Crossbars openable along the inner and outer radius from both sides ➤ From page 524

Light and cable-friendly design. Crossbars openable along the inner and outer radius from both sides ➤ From page 524

For especially demanding applications. Crossbars removable along the inner and outer radius ➤ From page 566

Light, strong and ...

e-chains® with crossbars every link

E4/light | Openable

For especially demanding applications. Crossbars removable along the inner and outer radius ➤ From page 560

Find the perfect e-chain® quickly ➤ www.igus.co.uk/finder ➤ www.igus.co.uk/the-chain

www.igus.co.uk/3D CAD, configurators, service life calculators and more ➤ www.igus.co.uk
**Product overview**

**... cost-effective**
- *e-chains®* with crossbars every 2nd link
- *E4/light* | Openable
- For almost any application, the standard. Crossbars removable along the inner and outer radius  
  ➤ From page 560

**Highly flexible**
- *T-band e-chain®*  
  - **T3** | Openable
  - Smooth running “T-band”, quiet, cost-effective. Crossbars removable along the inner and outer radius  
    ➤ From page 722

**Extremely low noise, vibration and abrasion, cleanroom suitable**
- *e-chains®*  
  - **E6** | Openable
  - Low noise - 37 dB(A), low vibration, cleanroom suitable. Crossbars removable along the inner and outer radius  
    ➤ From page 750

**Novel corrugated tube**
- *Corrugated tube for cleanroom e-skin®* | Openable
- Oval design. Can be opened and closed like a zipper. Cleanroom Class 1  
  ➤ From page 834

**... e-chains® and e-tubes for multi-axis movement**
- *Multi-axis e-tubes*  
  - triflex® R TROF | Openable
  - Enclosed design with snap lock mechanism. Easy to fill  
    ➤ From page 866

**Small, for high dynamics**
- *e-chains®*  
  - **E3** | Openable
  - Low noise - 36 dB(A), Crossbars on a strip. Zip-open along the outer radius  
    ➤ From page 732

**Hygienic design**
- *T-band e-chain®*  
  - TH3 | Open design *New*
  - 3-piece e-chain®, hygienic design. Open design for effective and easy cleaning, FDA-compliant material  
    ➤ From page 850

**For multi-axis movement... and robots...**
- *Multi-axis e-tubes*  
  - triflex® R TRC | Non-openable
  - Completely enclosed for chip-protection. With smooth and robust exterior  
    ➤ From page 866

**For simple multi-axis applications**
- *Multi-axis e-chains®*  
  - triflex® R TRL | "easy" design
  - Light version with "easy" design. Simply press cables in  
    ➤ From page 940

**Circular movements**
- *E-chains® for circular movements*  
  - twisterchain® | Openable
  - Circular movements e-chains® for circular and spiral movements up to 360°, from stock. For simple multi-axis applications  
    ➤ From page 952

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*Find the perfect e-chain® quickly ➤ [www.igus.co.uk/finder](http://www.igus.co.uk/finder) ➤ [www.igus.co.uk/the-chain](http://www.igus.co.uk/the-chain)*

*www.igus.co.uk 3D CAD, configurators, service life calculators and more ➤ [www.igus.co.uk](http://www.igus.co.uk)*
Product overview

Up to 7,000° rotary movement in the smallest spaces
- e-chains® for spiral movements
  - twisterband [Openable]
  - liftband [Openable]

Solutions for vertical motion
- Vertical guidance
  - lifiband
- Vertical guidance
  - guidelok slimline P
- Upper run guide
  - guidelok

Solutions for horizontal motion
- Enclosed trough
  - basic flizz®
- e-chains in aluminium profiles
  - micro flizz®

Heavy-duty e-chains®...
- e-chains® with crossbars every link
  - E4/4HD [Openable]

Condition Monitoring and engineered projects
- Condition Monitoring
  - PPDS (push, EC, P.)
- Engineering service
  - Modular projects

Predictive maintenance...
- Predictive maintenance
  - smart plastics

Heavy-duty e-chains®...
- e-chains® with crossbars every link
  - E4/4HD [Openable]

For long travel applications
- Profile rollers
  - Profil-rol e-chains®
  - R4 [Openable]

E4/4 rol e-chains®...
- e-chains® with crossbars every link
  - E4/4 rol e-chains® [Openable]

Continue...
Product overview

... normal and heavy-duty design

**e-tubes**

- R4/4 rol e-tube | Openable

- Rolling instead of gliding, fully enclosed. For especially demanding applications. Lids operable along the outer radius, from one side

- From page 1142

**E2/000 rol e-chains®**

- E2/000 rol e-chain® | Openable

- Rolling instead of gliding. Heavy-duty, for very long travels with very heavy fill weights. Crossbars removable along the inner and outer radius

- From page 1142

**Heavy-duty e-chains® with crossbars every link**

- E4/4 rol e-chain® | Openable

- For long travels up to 150m, energy efficient and cost-effective. Crossbars openable along the outer radius, from both sides

- From page 1160

**Self-guiding e-chain® autoglide version 04**

- Openable

- Special glide shoes provide a secure guidance for the E2/000. Lids operable along inner and outer radius, from both sides

- From page 1170

**Aluminium SuperTroughs**

- For general applications

- Openable

- For heavy-duty applications

- Openable

- For general applications

- Aluminium SuperTrough | Basic

- igus® standard guide troughs. Very simple, modular assembly

- From page 1208

- Guide troughs for tough applications. Online catalogue

- From page 1234

**Energy supply for cranes girders and indoor cranes**

- Guidefast

- Economical energy supply for crane girders and indoor cranes, fast installation

- From page 1276

**For light-duty applications**

- Guidelite

- Resistant to dirt. Cost-effective. Fast assembly

- From page 1282

**For less demanding applications**

- System RS | Tubular trough

- Very slimline trough. Fast assembly

- From page 1294

**Installation profile**

- C-profile | 92.42 | 92.52

- Very slimline trough with moulded autoglide grooves

- From page 1312

**Chainfix strain relief elements**

- Adjustable CFX as standard clamps and CFXL clamps for increased holding force. Galvanised steel or stainless steel (material 1.4301)

- From page 1316

**Steel guide trough**

- For applications in tough environments. Large selection

- From page 1264

**For easy support of the lower run**

- Steel support tray

- For less demanding applications

- System SP | Snap-in trough

- Very slimline trough. Fast assembly

- From page 1312

**Chainfix strain relief elements**

- Adjustable CFX as standard clamps and CFXL clamps for increased holding force. Galvanised steel or stainless steel (material 1.4301)

- From page 1316

**Other igus® guide trough systems**

- For easy support of the lower run

- Aluminium support tray

- The flexible construction kit to support the lower run - aluminium support tray. Seawater-resistant aluminium profile

- From page 1270

**Self-guiding e-chain® autoglide version 02**

- Openable

- Self-guiding E2/000 e-chain®. Crossbars openable along the inner radius fitted with moulded autoglide grooves.

- From page 1170

**Self-guiding e-chain® autoglide version 03**

- “easy” design

- “easy” design - split crossbar along the outer radius. Moulded autoglide combs along the inner radius

- From page 1170

**System RS**

- Tubular trough

- Resistant to dirt. Cost-effective

- Fast assembly

- From page 1288

**For less demanding applications**

- System SP | Snap-in trough

- Very slimline trough. Fast assembly

- From page 1312
Product overview

... other chainfix strain relief options ...

For C-profiles
- Multi-clamps
- Tiewrap plates | Universal

For C-profiles / Mounting brackets
- Tiewrap plates | Universal

For C-profiles / openable crossbars / fixed crossbars
- Tiewrap plates | Options

Save both time and space during installation, cost-effective. Compact and modular, for small outer diameters ➤ Page 1319

Tiewrap plates as individual parts. Screwed on KMA with C-profile or can be clipped onto some mounting brackets ➤ From page 1320

4 options available: 1. chainfix tiewrap plates with dip-on connection for C-profile. 2. Integrated strain relief for R series E2 e-tubes. 3. Tiewrap plates for fixed crossbars. 4. chainfix tiewrap plates for openable crossbars ➤ From page 1322

For C-profiles / top-hat (DIN) rail 35
- CFN | Nuggets
- CFB | Strain relief connector system

Simple strain relief with cable tiewraps for C-profile or top-hat (DIN) rail 35 ➤ Page 1331

Polymer, modular strain relief connector system, can be mounted into C-profile. For many cables types together in a compact system ➤ From page 1332

Simply enter your application’s parameters into the e-chain® expert to get a suitable solution ➤ www.igus.co.uk/quickchain100

CFU New
Honeycomb strain relief
- Assembled in seconds - CFU honeycomb strain relief. Simply insert cables and hoses into the honeycomb and close. Strain relief of different cables in one slot ➤ From page 1325

CFV
Strain relief elements
- Stepped strain relief elements with tie-wrap teeth. For a strain relief for use outside of the e-chain® section ➤ From page 1330

For e-chain® links
- Strain relief separators

Separator with integrated strain relief teeth. For easy strain relief either at the first or last e-chain® link with cable tiewraps ➤ From page 1326

For C-profiles / top-hat (DIN) rail 15
- CFV | Strain relief elements

Stopped strain relief elements with tie-wrap teeth. For a strain relief for use outside of the e-chain® section ➤ From page 1330

Online tools ...

Expert in system design and calculation for travels up to 100m
- e-chain® product finder for all kind of movements

With 2 to 6 parameters, you can reduce the number of matching e-chains® from a variety of options. Easy, reliable, fast ➤ www.igus.co.uk/the-chain

The e-chain® expert for fully harnessed, ready-to-install e-chain® systems for medium travels from 10 to 60m in gliding applications. Installation service upon request ➤ www.igus.co.uk/quickchain60

The product finder provides you with a quick overview of all possible chainflex® cables for your application ➤ www.igus.co.uk/quickcable

The product finder provides you with a quick overview of all possible chainflex® drive cables for your application ➤ www.igus.co.uk/readycablefinder

Expert in system design and calculation for gliding applications up to 60m
- Product finder for short unsupported applications up to 13m

With 2 to 6 parameters, you can reduce the number of matching e-chains® from a variety of options. Easy, reliable, fast ➤ www.igus.co.uk/quickchain13

Product finder for chainflex® drive cables

Harnessed drive cables in accordance with manufacturer standards can be found and ordered online easily and quickly. With service life calculation for the cable ➤ www.igus.co.uk/readycablefinder

Technical details
### e-rib - reinforcement for existing corrugated tube systems

**Reinforcement for corrugated tubes** | Simply clip onto a corrugated hose

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Nominal Width NW</th>
<th>Nominal Height ( h_x ) [mm]</th>
<th>Outer Height ( h_a ) [mm]</th>
<th>Outer Width from - to ( E_a ) [mm]</th>
<th>Inner Height ( h_l ) [mm]</th>
<th>Inner Width from - to ( E_l ) [mm]</th>
<th>Bend Radius from - to ( R ) [mm]</th>
<th>Pitch e-rib® link [mm]</th>
<th>Unsupported Fill Weight ( s ) [kg/m]</th>
<th>Unsupported Length ( L_U ) [m]</th>
<th>Long Travel Length ( L_T ) [m]</th>
<th>Interior Separation Options</th>
<th>Cleanroom</th>
<th>Robotic</th>
<th>UL94/VO</th>
<th>Quiet</th>
</tr>
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<tbody>
<tr>
<td>EL.00.21.0</td>
<td>NW 23</td>
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<td>29.9</td>
<td>41</td>
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<td>–</td>
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<td>EL.01.29.0</td>
<td>NW 29</td>
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<td>33</td>
<td>44.5</td>
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<td>EL.00.36.0</td>
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</tr>
</tbody>
</table>

**Legend**
- **Standard**
- **Possible as an option**
- ** Especially suitable**

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

**e-chains®** | Openable along the outer radius

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Nominal Width NW</th>
<th>Nominal Height ( h_x ) [mm]</th>
<th>Outer Height ( h_a ) [mm]</th>
<th>Outer Width from - to ( E_a ) [mm]</th>
<th>Inner Height ( h_l ) [mm]</th>
<th>Inner Width from - to ( E_l ) [mm]</th>
<th>Bend Radius from - to ( R ) [mm]</th>
<th>Pitch e-rib® link [mm]</th>
<th>Unsupported Fill Weight ( s ) [kg/m]</th>
<th>Unsupported Length ( L_U ) [m]</th>
<th>Long Travel Length ( L_T ) [m]</th>
<th>Interior Separation Options</th>
<th>Cleanroom</th>
<th>Robotic</th>
<th>UL94/VO</th>
<th>Quiet</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.10</td>
<td>NW 10</td>
<td>13</td>
<td>15.5</td>
<td>17</td>
<td>018</td>
<td>20</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>E1.17</td>
<td>NW 17</td>
<td>15</td>
<td>21 - 44</td>
<td>25</td>
<td>26 - 49</td>
<td>028</td>
<td>25.5</td>
<td>upon request</td>
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<td>15</td>
<td>26</td>
<td>20</td>
<td>028</td>
<td>25.25</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
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<td>15</td>
<td>27</td>
<td>22</td>
<td>028</td>
<td>25</td>
<td>upon request</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

### snapchain - guide cable bundles quickly and easily

**Version TE** | Loops openable along the outer radius

| Product Code | Length \( L \) [mm] | Length \( L_{gap} \) [mm] | Nominal Width NW | Nominal Height \( h_x \) [mm] | Outer Height \( h_a \) [mm] | Outer Width from - to \( E_a \) [mm] | Inner Height \( h_l \) [mm] | Inner Width from - to \( E_l \) [mm] | Bend Radius from - to \( R \) [mm] | Pitch e-rib® link [mm] | Unsupported Fill Weight \( s \) [kg/m] | Unsupported Length \( L_U \) [m] | Long Travel Length \( L_T \) [m] | Interior Separation Options | Cleanroom | Robotic | UL94/VO | Quiet |
|--------------|--------------------|---------------------------|------------------|-------------------------------|---------------------------|---------------------------------|----------------------|---------------------------------|-------------------------------|--------------------------|------------------------|---------------------|-------------------------------|---------|----------|--------|--------|
| TE14.50      | 150                | 50                        | NW 10            | 13                            | 15.5                      | 17                              | 018                  | 20                              | upon request                 | –                        | –                      | –                   | –                              | –       | –        | –      | –      |
| TE26.120     | 120                | 50                        | NW 17            | 15                            | 21 - 44                   | 25                              | 26 - 49               | 028                            | 25.5                         | upon request               | –                      | –                   | –                              | –       | –        | –      | –      |

**Version TZ** | Loops openable along the inner radius

| Product Code | Length \( L \) [mm] | Length \( L_{gap} \) [mm] | Nominal Width NW | Nominal Height \( h_x \) [mm] | Outer Height \( h_a \) [mm] | Outer Width from - to \( E_a \) [mm] | Inner Height \( h_l \) [mm] | Inner Width from - to \( E_l \) [mm] | Bend Radius from - to \( R \) [mm] | Pitch e-rib® link [mm] | Unsupported Fill Weight \( s \) [kg/m] | Unsupported Length \( L_U \) [m] | Long Travel Length \( L_T \) [m] | Interior Separation Options | Cleanroom | Robotic | UL94/VO | Quiet |
|--------------|--------------------|---------------------------|------------------|-------------------------------|---------------------------|---------------------------------|----------------------|---------------------------------|-------------------------------|--------------------------|------------------------|---------------------|-------------------------------|---------|----------|--------|--------|
| TZ14.50      | 150                | 50                        | NW 10            | 13                            | 15.5                      | 17                              | 018                  | 20                              | upon request                 | –                        | –                      | –                   | –                              | –       | –        | –      | –      |
| TZ26.120     | 120                | 50                        | NW 17            | 15                            | 21 - 44                   | 25                              | 26 - 49               | 028                            | 25.5                         | upon request               | –                      | –                   | –                              | –       | –        | –      | –      |

### office e-chain® - energy supply for offices and furniture

**e-chains®** | "easy" design, split crossbar along the inner radius

<table>
<thead>
<tr>
<th>Product Code</th>
<th>Nominal Width NW</th>
<th>Nominal Height ( h_x ) [mm]</th>
<th>Outer Height ( h_a ) [mm]</th>
<th>Outer Width from - to ( E_a ) [mm]</th>
<th>Inner Height ( h_l ) [mm]</th>
<th>Inner Width from - to ( E_l ) [mm]</th>
<th>Bend Radius from - to ( R ) [mm]</th>
<th>Pitch e-rib® link [mm]</th>
<th>Unsupported Fill Weight ( s ) [kg/m]</th>
<th>Unsupported Length ( L_U ) [m]</th>
<th>Long Travel Length ( L_T ) [m]</th>
<th>Interior Separation Options</th>
<th>Cleanroom</th>
<th>Robotic</th>
<th>UL94/VO</th>
<th>Quiet</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF14</td>
<td>NW 14</td>
<td>38</td>
<td>25</td>
<td>46.6</td>
<td>028</td>
<td>30.5</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

1) EL.01.29.0 only for PA6-corrugated tube L-PASG-20B/S
## easy chain® - easy to fill and cost-effective

### e-chain® version E | "easy" design - split crossbar along the outer radius

<table>
<thead>
<tr>
<th>1-chamber</th>
<th>2-chamber</th>
<th>3-chamber</th>
<th>4-chamber</th>
</tr>
</thead>
<tbody>
<tr>
<td>E03</td>
<td>E045.2</td>
<td>E045.3</td>
<td>E065.4</td>
</tr>
<tr>
<td>Inner width [mm]</td>
<td>8</td>
<td>10 - 20</td>
<td>10 - 20</td>
</tr>
<tr>
<td>Outer width from - to [Bi] [mm]</td>
<td>15</td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>Inner height [mm]</td>
<td>8</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Outer height from - to [Ba] [mm]</td>
<td>24.8</td>
<td>74.4</td>
<td>74.4</td>
</tr>
<tr>
<td>Bend radius from - to [R] [mm]</td>
<td>0.24</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Pitch [Z]</td>
<td>10 - 20</td>
<td>25 - 50</td>
<td>47 - 50</td>
</tr>
<tr>
<td>Unsupported fill weight [kg/m]</td>
<td>0.25</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Unsupported length [L0] [m]</td>
<td>16.7</td>
<td>35.5</td>
<td>47.6</td>
</tr>
<tr>
<td>Injection options</td>
<td>Q</td>
<td>V</td>
<td>V</td>
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</tbody>
</table>

### e-chain® version Z | "easy" design - split crossbar along the inner radius

<table>
<thead>
<tr>
<th>1-chamber</th>
<th>2-chamber</th>
<th>3-chamber</th>
<th>4-chamber</th>
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<tbody>
<tr>
<td>Z045</td>
<td>Z06</td>
<td>Z14</td>
<td>Z26</td>
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<tr>
<td>Inner width [mm]</td>
<td>8</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Outer width from - to [Bi] [mm]</td>
<td>24.8</td>
<td>74.4</td>
<td>74.4</td>
</tr>
<tr>
<td>Inner height [mm]</td>
<td>8</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Outer height from - to [Ba] [mm]</td>
<td>24.8</td>
<td>74.4</td>
<td>74.4</td>
</tr>
<tr>
<td>Bend radius from - to [R] [mm]</td>
<td>0.24</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Pitch [Z]</td>
<td>10 - 20</td>
<td>25 - 50</td>
<td>47 - 50</td>
</tr>
<tr>
<td>Unsupported fill weight [kg/m]</td>
<td>0.25</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>Unsupported length [L0] [m]</td>
<td>16.7</td>
<td>35.5</td>
<td>47.6</td>
</tr>
<tr>
<td>Injection options</td>
<td>Q</td>
<td>V</td>
<td>V</td>
</tr>
</tbody>
</table>
### Zip-open, easy to fill, e-chains® and e-tubes

#### e-chains® | Crossbars on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>047</th>
<th>07</th>
<th>09</th>
<th>15</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø [mm]</td>
<td>7</td>
<td>8</td>
<td>12.5</td>
<td>12.5</td>
<td>28</td>
</tr>
<tr>
<td>from - to DI [mm]</td>
<td>10 - 16</td>
<td>6 - 64</td>
<td>10 - 64</td>
<td>15 - 100</td>
<td>15 - 100</td>
</tr>
<tr>
<td>B [mm]</td>
<td>12.5</td>
<td>15</td>
<td>19.3</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>from - to R [mm]</td>
<td>16 - 22</td>
<td>12.5 - 71</td>
<td>16.2 - 72.2</td>
<td>26 - 113</td>
<td>25.5 - 113</td>
</tr>
<tr>
<td>018 - 038</td>
<td>018 - 048</td>
<td>028 - 048</td>
<td>038 - 180</td>
<td>063 - 125</td>
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<td>13</td>
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<td>30.5</td>
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<td>0.55</td>
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<td>1.2</td>
<td>1</td>
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<tr>
<td>Q047</td>
<td>Q07</td>
<td>Q09</td>
<td>Q15</td>
<td>Q17</td>
<td></td>
</tr>
</tbody>
</table>

#### e-tubes | Lids on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>R07</th>
<th>R09</th>
<th>R15</th>
<th>R17</th>
</tr>
</thead>
<tbody>
<tr>
<td>ø [mm]</td>
<td>8</td>
<td>12.5</td>
<td>15</td>
<td>28</td>
</tr>
<tr>
<td>from - to DI [mm]</td>
<td>6 - 64</td>
<td>10 - 50</td>
<td>25 - 80</td>
<td>15 - 63</td>
</tr>
<tr>
<td>B [mm]</td>
<td>12.5</td>
<td>19.3</td>
<td>24</td>
<td>39</td>
</tr>
<tr>
<td>from - to R [mm]</td>
<td>12.5 - 71</td>
<td>18.2 - 58.2</td>
<td>36 - 94</td>
<td>26 - 74</td>
</tr>
<tr>
<td>038 - 048</td>
<td>048 - 100</td>
<td>063 - 180</td>
<td>063 - 125</td>
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<tr>
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<td>0.55</td>
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<tr>
<td>R07</td>
<td>R09</td>
<td>R15</td>
<td>R17</td>
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</tbody>
</table>

2) ESD option, available from stock. Delivery time 24hrs or today! [igus.co.uk/ESD](https://www.igus.co.uk/ESD)
### Technical details | E2 micro | E2 mini

#### For the smallest spaces, inner heights and bend radii

<table>
<thead>
<tr>
<th>Opening principle</th>
<th>Series / product</th>
<th>Inner height ha [mm]</th>
<th>Inner width from to Øa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from to Øa [mm]</th>
<th>Bend radius from to R [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight s [kg/m]</th>
<th>Unsupported length Ffu [m]</th>
<th>Long travel length L [m]</th>
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<th>Quiet</th>
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#### E2 micro - smallest inner heights and bend radii

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<th>Opening principle</th>
<th>Series / product</th>
<th>Inner height ha [mm]</th>
<th>Inner width from to Øa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from to Øa [mm]</th>
<th>Bend radius from to R [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight s [kg/m]</th>
<th>Unsupported length Ffu [m]</th>
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Not applicable: 1) E2C.10, 2) E2C.15, 3) E2.10, 4) E2.15

** One-piece, openable along the inner radius with film hinge

*** Radii for several widths available upon request (please see product range table of the respective series).

For new designs we recommend E2 micro new generation series: 1) E2C.10, 2) E2C.15, 3) E2.10, 4) E2.15

---

For technical details on E2 micro and E2 mini, please refer to the images and tables above. Further specifications can be found on our website: [www.igus.co.uk/finder](http://www.igus.co.uk/finder)
### Technical details | E2.1 micro

#### Opening principle
- **Series / product**
- **Inner height h [mm]**
- **Inner width from - to [mm]**
- **Outer height ha [mm]**
- **Outer width from - to [mm]**
- **Bend radius from - to [R [mm]]**
- **Pitch e-chain® link [mm]**
- **Unsupported fill weight [kg/m]**
- **Unsupported length FL [m]**
- **Long travel length [m]**
- **Interior separation options**
- **ESD**
- **Cleanroom**
- **Quiet**
- **Price index**
- **Page**

#### E2.1 micro - the new "small" E2 micro standard, stronger, easier to install

**e-chains® | Openable along the inner radius, from both sides**

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm]</th>
<th>Inner width from - to [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to [mm]</th>
<th>Bend radius from - to [R [mm]]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel length [m]</th>
<th>Interior separation options</th>
<th>ESD</th>
<th>Cleanroom</th>
<th>Quiet</th>
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<tr>
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<td>10.1</td>
<td>ø 8</td>
<td>6 - 50</td>
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<td>018 - 038</td>
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<td>0.7</td>
<td>0.75</td>
<td>–</td>
<td>▲</td>
<td>–</td>
<td>–</td>
<td>▲</td>
<td>● ● ● ●</td>
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<tr>
<td>E2.15</td>
<td>14.4</td>
<td>ø 12.5</td>
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<td>19.3</td>
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<td>1.25</td>
<td>1.3</td>
<td>–</td>
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**e-chains® | Openable along the outer radius, from both sides**

<table>
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<th>Inner height h [mm]</th>
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<th>Outer height ha [mm]</th>
<th>Outer width from - to [mm]</th>
<th>Bend radius from - to [R [mm]]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel length [m]</th>
<th>Interior separation options</th>
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<th>Cleanroom</th>
<th>Quiet</th>
<th>Price index</th>
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<td>10.1</td>
<td>ø 8</td>
<td>6 - 50</td>
<td>15</td>
<td>13.4 - 57.4</td>
<td>018 - 038</td>
<td>20</td>
<td>0.7</td>
<td>0.75</td>
<td>–</td>
<td>▲</td>
<td>–</td>
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<td>▲</td>
<td>● ● ● ●</td>
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<tr>
<td>E2.15</td>
<td>14.4</td>
<td>ø 12.5</td>
<td>10 - 50</td>
<td>19.3</td>
<td>17.8 - 57.8</td>
<td>028 - 048</td>
<td>20</td>
<td>1.25</td>
<td>1.3</td>
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<td>▲</td>
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**e-chains® | Non-openable**

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<th>Outer height ha [mm]</th>
<th>Outer width from - to [mm]</th>
<th>Bend radius from - to [R [mm]]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel length [m]</th>
<th>Interior separation options</th>
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<th>Cleanroom</th>
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<td>0.7</td>
<td>0.75</td>
<td>–</td>
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#### E2.1 - new generation E2/000 e-chains®, stronger, easier to install

**e-chains® | Openable along the inner radius, from both sides**

<table>
<thead>
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<th>Series / product</th>
<th>Inner height h [mm]</th>
<th>Inner width from - to [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to [mm]</th>
<th>Bend radius from - to [R [mm]]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FL [m]</th>
<th>Long travel length [m]</th>
<th>Interior separation options</th>
<th>ESD</th>
<th>Cleanroom</th>
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<td>ø 24</td>
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<td>2.25</td>
<td>–</td>
<td>●</td>
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<td>▲</td>
<td>● ● ● ●</td>
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<td>upon request</td>
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**Available upon request. Please consult igus® for delivery time.

2) ESD option, available from stock. Delivery time 24hrs or today! | igus.co.uk/ESD

Find the perfect e-chain® quickly | www.igus.co.uk/finder | www.igus.co.uk/the-chain | igus® | 3D CAD, configurators, service life calculators and more | www.igus.co.uk
## E2/000 - all-rounder for a wide range of applications

### e-chains® | Crossbars openable along the inner radius, from both sides

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<td>2</td>
<td>1.75</td>
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<td>2400</td>
<td>25</td>
<td>23</td>
<td>25</td>
<td>25 - 125</td>
<td>055 - 250</td>
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<td>35</td>
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<td>063 - 250</td>
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<td>6</td>
<td>2.75</td>
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<td>50 - 250</td>
<td>075 - 300</td>
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### e-chains® | Crossbars openable along the outer radius, from both sides

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<th>Outer height ha [mm]</th>
<th>Outer width from - to E2 [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
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### Half e-tubes | Crossbars openable along the inner radius, from both sides

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<th>Outer width from - to E2 [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
<th>Long travel length ≤ [m]</th>
<th>Interior separation options</th>
<th>£ [ ]</th>
</tr>
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<tbody>
<tr>
<td>1450</td>
<td>21</td>
<td>18</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>075 - 180</td>
<td>33.3</td>
<td>2</td>
<td>1.75</td>
</tr>
<tr>
<td>2450</td>
<td>25</td>
<td>23</td>
<td>25</td>
<td>25 - 125</td>
<td>055 - 250</td>
<td>46</td>
<td>5</td>
<td>2.25</td>
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<td>2650</td>
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<td>32</td>
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<td>30 - 175</td>
<td>100 - 250</td>
<td>56</td>
<td>6</td>
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<td>50</td>
<td>50 - 250</td>
<td>125 - 300</td>
<td>67</td>
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### e-tubes | Lids openable along the inner radius, from both sides

<table>
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<th>Outer height ha [mm]</th>
<th>Outer width from - to E2 [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
<th>Long travel length ≤ [m]</th>
<th>Interior separation options</th>
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<tbody>
<tr>
<td>1480</td>
<td>21</td>
<td>18</td>
<td>28</td>
<td>28.5 - 138.5</td>
<td>075 - 180</td>
<td>33.3</td>
<td>2</td>
<td>1.75</td>
</tr>
<tr>
<td>2480</td>
<td>25</td>
<td>23</td>
<td>25</td>
<td>25 - 125</td>
<td>075 - 250</td>
<td>46</td>
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<td>30 - 175</td>
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<td>6</td>
<td>2.75</td>
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<td>3480</td>
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<td>42</td>
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<td>50 - 250</td>
<td>125 - 300</td>
<td>67</td>
<td>13</td>
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1) Conditionally suitable if the crossbars are openable along the inner radius 2) ESD-option, available from stock. Delivery time 24hrs or today!
### E2 R100 - cost-effective swarf protection

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height [h] [mm]</th>
<th>Inner width from - to [d] [mm]</th>
<th>Outer height [c] [mm]</th>
<th>Outer width from - to [D] [mm]</th>
<th>Bend radius from - to [R] [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length [m]</th>
<th>Long travel length [m]</th>
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<td>1.5</td>
<td>1.2</td>
<td>-</td>
<td>-</td>
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<tr>
<td>R157</td>
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<td>40 - 200</td>
<td>50</td>
<td>56 - 216</td>
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<td>46</td>
<td>8</td>
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<td>-</td>
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<tr>
<td>R167</td>
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<td>50 - 250</td>
<td>64</td>
<td>68 - 268</td>
<td>100 - 300</td>
<td>58.8</td>
<td>10</td>
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**R2.1 - cost-effective swarf protection**

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<th>Inner width from - to [d] [mm]</th>
<th>Outer height [c] [mm]</th>
<th>Outer width from - to [D] [mm]</th>
<th>Bend radius from - to [R] [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length [m]</th>
<th>Long travel length [m]</th>
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<td>36</td>
<td>66 - 91</td>
<td>060 - 250</td>
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<td>4</td>
<td>2</td>
<td>-</td>
<td>-</td>
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<td>R2.40</td>
<td>40 o 36</td>
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<td>66.2 - 91.2</td>
<td>080 - 250</td>
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<td>2.75</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>R2.48</td>
<td>48 o 43</td>
<td>115</td>
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<td>135</td>
<td>100 - 250</td>
<td>58</td>
<td>10</td>
<td>2.75</td>
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**RX - extremely swarf-resistant e-tubes**

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<th>Series</th>
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<th>Inner width from - to [d] [mm]</th>
<th>Outer height [c] [mm]</th>
<th>Outer width from - to [D] [mm]</th>
<th>Bend radius from - to [R] [mm]</th>
<th>Pitch [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
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<th>Long travel length [m]</th>
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<td>42 o 37</td>
<td>80</td>
<td>56</td>
<td>96.4</td>
<td>080 - 150</td>
<td>32</td>
<td>4</td>
<td>1.7</td>
<td>-</td>
<td>-</td>
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<tr>
<td>RX40</td>
<td>52 o 48</td>
<td>100</td>
<td>70</td>
<td>123</td>
<td>100 - 300</td>
<td>40</td>
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<td>1.8</td>
<td>-</td>
<td>-</td>
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<tr>
<td>RX48</td>
<td>62 o 56</td>
<td>120</td>
<td>84</td>
<td>147.5</td>
<td>120 - 150</td>
<td>48</td>
<td>9</td>
<td>2.1</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>RX56</td>
<td>73 o 65</td>
<td>140</td>
<td>98</td>
<td>172.2</td>
<td>140</td>
<td>56</td>
<td>11</td>
<td>2.3</td>
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</table>
### Technical details | E4.1L | E4.1

#### Legend
- Standard
- Limited suitability
- Limited suitability as an option
- Especially suitable

#### Opening principle

#### Series / product

<table>
<thead>
<tr>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>28</td>
<td>40 - 175</td>
<td>54 - 189</td>
<td>555 - 250</td>
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<td>34</td>
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<tr>
<td>43</td>
<td>50 - 300</td>
<td>70 - 320</td>
<td>675 - 350</td>
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<td>57</td>
<td>87 - 200</td>
<td>113 - 201</td>
<td>100 - 400</td>
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<table>
<thead>
<tr>
<th>Pitch ( \varepsilon [n/mm] )</th>
<th>Unsupported fill weight ( \leq \varepsilon [kg/m] )</th>
<th>Unsupported length ( F_L [m] )</th>
<th>Long travel length ( \leq L [m] )</th>
<th>Interior separation options</th>
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<td>2</td>
<td>80</td>
<td>( \bullet )</td>
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<td>13</td>
<td>2.75</td>
<td>80</td>
<td>( \bullet )</td>
</tr>
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<td>46</td>
<td>26</td>
<td>3.75</td>
<td>100</td>
<td>( \bullet )</td>
</tr>
<tr>
<td>64</td>
<td>40</td>
<td>4.1</td>
<td>120</td>
<td>( \bullet )</td>
</tr>
</tbody>
</table>

<figure>

#### E4.1L - low weight, easy assembly and cable-friendly design

**e-chains®** | Crossbars openable along the inner and outer radius, from both sides

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
</tr>
</thead>
<tbody>
<tr>
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<td>31 28</td>
<td>50 - 100</td>
<td>64 - 114</td>
<td>675 - 350</td>
</tr>
<tr>
<td>E4.38L</td>
<td>38 34</td>
<td>50 - 300</td>
<td>66 - 266</td>
<td>125 - 300</td>
</tr>
<tr>
<td>E4.48L</td>
<td>48 43</td>
<td>50 - 250</td>
<td>70 - 270</td>
<td>125 - 350</td>
</tr>
</tbody>
</table>

| Bend radius from to \( R [mm] \) | 80 | 80 | 100 | 120 |

#### e-tubes | Fully enclosed - lids openable along the inner and outer radius, from both sides

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.31L</td>
<td>31 28</td>
<td>50 - 100</td>
<td>64 - 114</td>
<td>675 - 350</td>
</tr>
<tr>
<td>R4.38L</td>
<td>38 34</td>
<td>50 - 300</td>
<td>66 - 266</td>
<td>125 - 300</td>
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<tr>
<td>R4.48L</td>
<td>48 43</td>
<td>50 - 250</td>
<td>70 - 270</td>
<td>125 - 350</td>
</tr>
</tbody>
</table>

| Bend radius from to \( R [mm] \) | 80 | 80 | 100 | 120 |

<figure>

#### E4.1 - one e-chain® series for almost any application

**e-chains®** | Crossbars every link - crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
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<td>44 - 154</td>
<td>038 - 200</td>
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<td>E4.28</td>
<td>28 25</td>
<td>40 - 300</td>
<td>60 - 330</td>
<td>055 - 250</td>
</tr>
<tr>
<td>E4.32</td>
<td>32 28</td>
<td>50 - 500</td>
<td>73 - 423</td>
<td>063 - 300</td>
</tr>
<tr>
<td>E4.42</td>
<td>42 38</td>
<td>50 - 400</td>
<td>76 - 426</td>
<td>076 - 350</td>
</tr>
<tr>
<td>E4.56</td>
<td>56 50</td>
<td>50 - 600</td>
<td>84 - 634</td>
<td>135 - 500</td>
</tr>
<tr>
<td>E4.80</td>
<td>80 72</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>150 - 800</td>
</tr>
<tr>
<td>E4.112</td>
<td>112 100</td>
<td>50 - 600</td>
<td>140 - 1022</td>
<td>200 - 1,400</td>
</tr>
<tr>
<td>E4.162</td>
<td>162 145</td>
<td>200 - 600</td>
<td>256 - 656</td>
<td>250 - 1,000</td>
</tr>
<tr>
<td>800</td>
<td>200 184</td>
<td>200 - 600</td>
<td>260 - 660</td>
<td>325 - 1,000</td>
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<tr>
<td>840</td>
<td>204 184</td>
<td>100 - 563</td>
<td>160 - 623</td>
<td>325 - 1,000</td>
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<tr>
<td>E4.350</td>
<td>350 315</td>
<td>400 - 800</td>
<td>540 - 940</td>
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</table>

| Bend radius from to \( R [mm] \) | 120 | 120 | 150 | 180 |

#### e-chains® | Crossbars every 2nd link - crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
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<tbody>
<tr>
<td>H4.32</td>
<td>32 28</td>
<td>50 - 400</td>
<td>73 - 423</td>
<td>063 - 300</td>
</tr>
<tr>
<td>H4.42</td>
<td>42 38</td>
<td>50 - 400</td>
<td>76 - 426</td>
<td>076 - 350</td>
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<td>H4.56</td>
<td>56 50</td>
<td>50 - 600</td>
<td>84 - 634</td>
<td>135 - 500</td>
</tr>
<tr>
<td>H4.80</td>
<td>80 72</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>150 - 800</td>
</tr>
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<td>H4.112</td>
<td>112 100</td>
<td>50 - 600</td>
<td>140 - 1022</td>
<td>200 - 1,400</td>
</tr>
</tbody>
</table>

| Bend radius from to \( R [mm] \) | 200 | 200 | 200 | 200 |

#### e-tubes | Fully enclosed - lids openable along the outer radius, from one side

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Width from to B [mm]</th>
<th>Outer width from to ( B_a [mm] )</th>
<th>Outer height ha [mm]</th>
<th>Inner height ha [mm] + ( s )  [mm]</th>
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<td>R4.112</td>
<td>112 100</td>
<td>200 - 500</td>
<td>252 - 552</td>
<td>250 - 1,000</td>
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</tbody>
</table>

| Bend radius from to \( R [mm] \) | 200 | 200 | 200 | 200 |

#### Options

- 2) ESD option, available from stock. Delivery time 24hrs or today. [igus.co.uk/ESD](http://igus.co.uk/ESD)
### E4/light - light, strong and cost-effective

**Legend**
- Standard
- Limited suitability
- Possible as an option
- Especially suitable

**Technical Details**

#### e-chains® | Crossbars every link - crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + Ø [mm]</th>
<th>Inner width from to Øa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from to Øa [mm]</th>
<th>Bend radius from to Ø [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight α [kg/m]</th>
<th>Unsupported length Fl [m]</th>
<th>Long travel length L [m]</th>
<th>Interior separation options</th>
<th>Separation</th>
<th>3D CAD, configurators, service life calculators and more</th>
<th>Quiet</th>
<th>Price index</th>
<th>Page</th>
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<td>56</td>
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<td>50 - 600</td>
<td>84</td>
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<td>91</td>
<td>40</td>
<td>4</td>
<td>150</td>
<td>●</td>
<td>–</td>
<td>●</td>
<td>▲</td>
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<td>4</td>
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<td>–</td>
<td>●</td>
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<td>55</td>
<td>4.2</td>
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<td>●</td>
<td>▲</td>
<td>▲</td>
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<td>72</td>
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<td>4.6</td>
<td>250</td>
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<td>●</td>
<td>▲</td>
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<td>4.5</td>
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<td>●</td>
<td>–</td>
<td>●</td>
<td>▲</td>
<td>▲</td>
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</table>

#### e-chains® | Crossbars every 2nd link - crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + Ø [mm]</th>
<th>Inner width from to Øa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from to Øa [mm]</th>
<th>Bend radius from to Ø [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight α [kg/m]</th>
<th>Unsupported length Fl [m]</th>
<th>Long travel length L [m]</th>
<th>Interior separation options</th>
<th>Separation</th>
<th>3D CAD, configurators, service life calculators and more</th>
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<td>–</td>
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</table>

#### e-tubes | Fully enclosed - lids openable along the outer radius, from one side

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + Ø [mm]</th>
<th>Inner width from to Øa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from to Øa [mm]</th>
<th>Bend radius from to Ø [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight α [kg/m]</th>
<th>Unsupported length Fl [m]</th>
<th>Long travel length L [m]</th>
<th>Interior separation options</th>
<th>Separation</th>
<th>3D CAD, configurators, service life calculators and more</th>
<th>Quiet</th>
<th>Price index</th>
<th>Page</th>
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<tbody>
<tr>
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<td>75 - 462</td>
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<td>191 - 489</td>
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<td>●</td>
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2) ESD option, available from stock. Delivery time 24hrs or today! [igus.co.uk/ESD]
### T3 - smooth running "T-band", quiet, cost-effective

<table>
<thead>
<tr>
<th>e-chains®</th>
<th>Crossbars removable along the inner and outer radius</th>
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</thead>
<tbody>
<tr>
<td>T3.29</td>
<td>29 ø 25 30 - 140 35 55 - 165 038 15 1 1.45 – ● ● ● ● ● ● ● ● 728</td>
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</table>

### E3 - high dynamics and cleanroom compatible

<table>
<thead>
<tr>
<th>e-chains®</th>
<th>Crossbars on a strip - zip-open along the outer radius</th>
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<tbody>
<tr>
<td>E3.10</td>
<td>10 ø 8 20 - 60 15 32 - 72 015 - 48 16.7 0.3 0.7 – ● – – – ●●●●●●●● 738</td>
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<tr>
<td>E3.15</td>
<td>15 ø 13 20 - 60 20 32 - 72 032 - 75 16.7 0.7 0.9 – ● ▲ – – ●●●●●●●●●●● 742</td>
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<tr>
<td>E3.22</td>
<td>22 ø 20 20 - 60 27 32 - 72 044 - 75 16.7 0.85 1.2 – ● ▲ – – ●●●●●●●●●●● 746</td>
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### E6.1 - low noise 32dB(A), dynamic, light and cleanroom suitable

<table>
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<th>e-chains®</th>
<th>Crossbars openable along the inner and outer radius, from both sides</th>
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<tbody>
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<td>E61.29</td>
<td>29 ø 25 30 - 140 35 44 - 154 055 - 150 22 3 1.75 – ● ● ● ● ● ● ●●●●●●●●●● 758</td>
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</tbody>
</table>

1) In preparation / upon request
### E6 - extremely low noise 37dB(A), low vibration and abrasion, cleanroom suitable

**e-chains® | Crossbars every 2nd link - crossbars removable along the inner and outer radius**

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + ha [mm]</th>
<th>Inner width from - to δ [mm]</th>
<th>Outer height from - to βa [mm]</th>
<th>Outer width from - to R [mm]</th>
<th>Bend radius from - to R [mm]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight FL ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
<th>Long travel length L ≤ [m]</th>
<th>Interior separation options</th>
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</thead>
<tbody>
<tr>
<td>E6.29</td>
<td>29 ø 25 30 - 140 35 46 - 156 055 - 150</td>
<td>22 3 1.75 –</td>
<td>–</td>
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<tr>
<td>E6.35</td>
<td>35 ø 31 30 - 140 42 50 - 160 055 - 150</td>
<td>25 6 1.9 –</td>
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<td>–</td>
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<td>80</td>
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<tr>
<td>E6.40</td>
<td>40 ø 36 40 - 300 54 60 - 320 063 - 200</td>
<td>27.8 10 2.75 60P</td>
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<tr>
<td>E6.52</td>
<td>52 ø 46 40 - 300 65 64 - 324 075 - 250</td>
<td>30 15 3 80P</td>
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<tr>
<td>E6.62</td>
<td>62 ø 54 50 - 400 84 86 - 436 115 - 350</td>
<td>50 43 4 100P</td>
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<tr>
<td>E6.80L</td>
<td>80 ø 72 87 - 550 108 115 - 578 150 - 300</td>
<td>65 25 2.5 –</td>
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<td>120P</td>
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<td>E6.80</td>
<td>80 ø 72 50 - 600 108 100 - 650 150 - 450</td>
<td>65 55 5.25 120P</td>
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**e-tubes | Fully enclosed - lids removable along the inner and outer radius**

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + ha [mm]</th>
<th>Inner width from - to δ [mm]</th>
<th>Outer height from - to βa [mm]</th>
<th>Outer width from - to R [mm]</th>
<th>Bend radius from - to R [mm]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight FL ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
<th>Long travel length L ≤ [m]</th>
<th>Interior separation options</th>
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<tr>
<td>R6.29</td>
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<td>–</td>
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<td>60</td>
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<td>R6.40</td>
<td>40 ø 36 50 - 125 54 70 - 145 063 - 200</td>
<td>27.8 10 2.75 60P</td>
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<tr>
<td>R6.52</td>
<td>52 ø 46 50 - 175 66 74 - 199 075 - 250</td>
<td>30 15 3 80P</td>
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**e-skin® - novel corrugated hose energy supply system for cleanrooms**

**Oval design | Can be opened and closed like a zipper**

<table>
<thead>
<tr>
<th>Series / product</th>
<th>Inner height h [mm] + ha [mm]</th>
<th>Inner width from - to δ [mm]</th>
<th>Outer height from - to βa [mm]</th>
<th>Outer width from - to R [mm]</th>
<th>Bend radius from - to R [mm]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight FL ≤ [kg/m]</th>
<th>Unsupported length FL ≤ [m]</th>
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<tbody>
<tr>
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<td>1 0.75 –</td>
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<tr>
<td>SK40 New</td>
<td>38 ø 30 85 57 118 –</td>
<td>–</td>
<td>1.5 1.25 –</td>
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1) In preparation / upon request
### TH3 - e-chain® designed according to hygienic principles

**Open design - easy to clean**

<table>
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<tr>
<th>Opening principle</th>
<th>Chamber design</th>
<th>Series / product</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer height</th>
<th>Outer width</th>
<th>Bend radius</th>
<th>Pitch</th>
<th>Unsupported fill weight</th>
<th>Unsupported length</th>
<th>Interior separation options</th>
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<td>2 x 20</td>
<td>TH3 25.2</td>
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<td>35</td>
<td>86</td>
<td>070</td>
<td>56</td>
<td>1.8</td>
<td>1.2</td>
<td>●</td>
</tr>
<tr>
<td>3-segment 25.5</td>
<td>2 x 20</td>
<td>TH3 25.3</td>
<td>New</td>
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<td>070</td>
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<td>1.8</td>
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<td>●</td>
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<tr>
<td>4-segment 25.5</td>
<td>2 x 20</td>
<td>TH3 25.4</td>
<td>New</td>
<td>120</td>
<td>35</td>
<td>136</td>
<td>070</td>
<td>56</td>
<td>1.8</td>
<td>1.2</td>
<td>●</td>
</tr>
<tr>
<td>5-segment 25.5</td>
<td>2 x 20</td>
<td>TH3 25.5</td>
<td>New</td>
<td>145</td>
<td>35</td>
<td>161</td>
<td>070</td>
<td>56</td>
<td>1.8</td>
<td>1.2</td>
<td>●</td>
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*Available upon request. Please consult igus® for delivery time.*
### triflex® R - for multi-axis movement and robots

<table>
<thead>
<tr>
<th>Inner height h [mm] + s [mm]</th>
<th>Inner width from - to $\delta_a$ [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to $\delta_a$ [mm]</th>
<th>Bend radius from - to $\Phi$ [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight $\sigma$ [kg/m]</th>
<th>Unsupported length $L_{UL}$ [m]</th>
<th>Long travel length $L_{TR}$ [m]</th>
<th>Interior separation options</th>
<th>Separation</th>
<th>ESD</th>
<th>UL-V2 / V0</th>
<th>Quiet</th>
<th>Price index</th>
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</thead>
<tbody>
<tr>
<td>TRC.30</td>
<td>12/10</td>
<td>0.10</td>
<td>ø 34.5</td>
<td>ø 34.5</td>
<td>050</td>
<td>11.3</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>874</td>
</tr>
<tr>
<td>TRC.40</td>
<td>15/13</td>
<td>0.13</td>
<td>ø 43</td>
<td>ø 43</td>
<td>056</td>
<td>13.9</td>
<td>–</td>
<td>–</td>
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<td>874</td>
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<tr>
<td>TRC.50</td>
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<td>ø 54</td>
<td>ø 54</td>
<td>080</td>
<td>17.4</td>
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<td>–</td>
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<td>–</td>
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<tr>
<td>TRC.60</td>
<td>22.5/19.5</td>
<td>0.23</td>
<td>ø 65</td>
<td>ø 65</td>
<td>087</td>
<td>20.6</td>
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<td>0.26</td>
<td>ø 81</td>
<td>ø 81</td>
<td>110</td>
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<td>TRC.85</td>
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<td>0.31</td>
<td>ø 94.5</td>
<td>ø 94.5</td>
<td>135</td>
<td>30.6</td>
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<tr>
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<td>ø 108</td>
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### TRE e-chains® "easy" design, very easy to fill - simply press cables in

<table>
<thead>
<tr>
<th>Inner height h [mm] + s [mm]</th>
<th>Inner width from - to $\delta_a$ [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to $\delta_a$ [mm]</th>
<th>Bend radius from - to $\Phi$ [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight $\sigma$ [kg/m]</th>
<th>Unsupported length $L_{UL}$ [m]</th>
<th>Long travel length $L_{TR}$ [m]</th>
<th>Interior separation options</th>
<th>Separation</th>
<th>ESD</th>
<th>UL-V2 / V0</th>
<th>Quiet</th>
<th>Price index</th>
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</thead>
<tbody>
<tr>
<td>TRE.30</td>
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<td>ø 34.5</td>
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<td>ø 43</td>
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</tr>
<tr>
<td>TRE.85</td>
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<td>0.31</td>
<td>ø 94.5</td>
<td>ø 94.5</td>
<td>135</td>
<td>30.6</td>
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### TRLF e-chains® Light version with "easy" design, cost-effective - simply press cables in

<table>
<thead>
<tr>
<th>Inner height h [mm] + s [mm]</th>
<th>Inner width from - to $\delta_a$ [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to $\delta_a$ [mm]</th>
<th>Bend radius from - to $\Phi$ [mm]</th>
<th>Pitch e-chain link [mm]</th>
<th>Unsupported fill weight $\sigma$ [kg/m]</th>
<th>Unsupported length $L_{UL}$ [m]</th>
<th>Long travel length $L_{TR}$ [m]</th>
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*Special size TRCF.85.240.0 with 240 degree bend radius and a range of accessories
### easy triflex® - for simple multi-axis applications, easy filling from both sides

**e-chains® "easy" design, very easy to fill - simply press cables in**

<table>
<thead>
<tr>
<th>Series/ product</th>
<th>Inner height hi [mm]</th>
<th>Inner width from - to ßa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to ßa [mm]</th>
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<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FLs [m]</th>
<th>Long travel length Ls [m]</th>
<th>Interior separation options</th>
<th>Separation [mm]</th>
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### triflex® - enclosed for simple multi-axis applications

**e-tubes | Fully enclosed, non-openable - swarf protection**

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<tr>
<th>Series/ product</th>
<th>Inner height hi [mm]</th>
<th>Inner width from - to ßa [mm]</th>
<th>Outer height ha [mm]</th>
<th>Outer width from - to ßa [mm]</th>
<th>Bend radius from - to R [mm]</th>
<th>Pitch e-chain® link [mm]</th>
<th>Unsupported fill weight [kg/m]</th>
<th>Unsupported length FLs [m]</th>
<th>Long travel length Ls [m]</th>
<th>Interior separation options</th>
<th>Separation [mm]</th>
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<th>UL94 V0</th>
<th>Quiet</th>
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**e-tubes | Fully enclosed, openable - swarf protection**

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</table>
## Technical details | twisterchain | twisterband

### twisterchain - circular and spiral movements up to 360°, from stock

- **Series / product**
  - 2208a
  - TC32
  - TC42
  - TC56

- **Opening principle**
  - l<br>  - l

- **Inner height hi [mm]**
  - 25 - 112.5
  - 87.5 - 150
  - 87.5 - 200
  - 125 - 200

- **Inner width fi [mm]**
  - 42
  - 54
  - 64
  - 84

- **Outer height ha [mm]**
  - 80 - 140
  - 108.5 - 171
  - 110.5 - 223
  - 150 - 400

- **Outer width from - to Fb [mm]**
  - 055 - 150
  - 100 - 250
  - 100 - 250
  - 150 - 400

- **Bend radius from - to R [mm]**
  - 44
  - 56
  - 67
  - 91

- **Pitch e-chain® link [mm]**
  - 1
  - 2
  - 3.6
  - 5

- **Fill weight up to 360° ≤ [kg/m]**
  - 1.5
  - 2
  - 3.6
  - 5

- **Unsupported length FLu ≤ [m]**
  - –
  - –
  - –
  - –

- **Long travel length ≤ [m]**
  - –
  - –
  - –
  - –

- **Interior separation options**
  - –
  - –
  - –
  - –

- **Series**
  - 0

- **Price index**
  - 972

### twisterband - up to 7000° rotary movements in the smallest spaces

- **Series / product**
  - TB12.23.9
  - TB20.44.12
  - TB20.44.18
  - TB29.27.22
  - TB30.75.22

- **Opening principle**
  - l<br>  - l

- **Inner height hi [mm]**
  - 7
  - 9
  - 14
  - 17
  - 17

- **Inner width fi [mm]**
  - 23
  - 44
  - 44
  - 27
  - 75

- **Inner separation options**
  - –
  - –
  - –
  - –
  - –

- **Separators**
  - –
  - –
  - –
  - –
  - –

- **Pitch e-chain® link [mm]**
  - 024 035
  - 034 057
  - 034 057
  - 069 082
  - 044 077

- **Fill weight up to 7000° ≤ [kg/m]**
  - 0.82
  - 0.82
  - 0.77
  - 0.82
  - 0.77

- **Unsupported length FLu ≤ [m]**
  - 0.55
  - 0.55
  - 0.55
  - 0.82
  - 0.77

- **Long travel length ≤ [m]**
  - 0.82
  - 0.82
  - 0.77
  - 0.82
  - 0.77

- **Series**
  - R

- **Price index**
  - 994

### e-chains® | links with strong pin and hook connection - openable with film hinge

- **Series / product**
  - TBH030.75.22
  - TBH042.135.30

- **Opening principle**
  - l

- **Inner height hi [mm]**
  - 17
  - 20

- **Inner width fi [mm]**
  - 75
  - 135

- **Inner separation options**
  - –
  - –

- **Separators**
  - –
  - –

- **Pitch e-chain® link [mm]**
  - 044 077
  - 056 119

- **Fill weight up to 360° ≤ [kg/m]**
  - –
  - –

- **Unsupported length FLu ≤ [m]**
  - –
  - –

- **Long travel length ≤ [m]**
  - –
  - –

- **Series**
  - P

- **Price index**
  - 998

---

*Twisterchain classic (1st generation)  **Depending on installation orientation, vertical: up to 3,000°; horizontal: 7,000° and more possible*
### e-spool - the cable reel without a slip ring

**e-spool standard and HD | Flexible use**
- Flexible energy supply - guidance of different media in one system
- Flexible use - energy supply in any direction is possible
- Cost-effective - twisted band enables rotary movement
- Space-saving - e-chain® retracts into a compact unit
- No tensile load on the cables
- Cables can be retrospectively added or changed

**Travel length [m]**  
≤ 14

**Speed [m/s]**  
≈ 1.5

**Price index**  
1012

**Telescopic/retractable applications**
- Theatre, stage and lighting technology
- Space-saving alternative to zig-zag solutions

**Solutions for multi-axis movement**

### e-spool compact | Space-saving, spring-driven

- Compact, space-saving cable reel without slip ring
- Different media (power, air data and fluids) can be routed together in one system
- Energy supply in all directions
- Space-saving
- Very lightweight design (SP1.240 series made from aluminium)
- Extension lengths up to 2 and 4m
- Cables can be retrospectively added or changed

**Travel length [m]**  
≤ 4

**Speed [m/s]**  
≈ 1.5

**Price index**  
1016

**Small circular movements**
- Retractable applications - linear or rotary

### e-spool for manual operation | Reliable and space-saving

- For applications where only one cable or hose is pulled out manually
- Compact, space-saving cable reel without slip ring
- Integrated ratchet to lock/release the retraction
- Also suitable for media or air hoses
- Handle with mounting option and strain relief

**Travel length [m]**  
≤ 5

**Speed [m/s]**  
≈ 1.5

**Price index**  
1020

**Robot teach pendants**
- Workstations
- Assembly lines

### e-spool power | Motor-driven for long extension lengths

- Travel distances up to 35m
- Solid tubular steel construction
- Flexible filling with electrical and fibre optic cables, and pneumatic hoses
- Future-proof, additions and upgrades possible
- No tensile load on the cables

**Travel length [m]**  
≤ 35

**Speed [m/s]**  
≈ 1.5

**Price index**  
1024

**Theatre, stage and lighting technology**
- Indoor cranes
- Cranes
### Technical details | liftband | guidelok slimline P

#### Product description and benefits

**liftband - cable guidance up to 13m height with limited installation space**

**Vertical guidance**

- For high vertical applications that need a compact solution
- Modular, silent, space-saving; vertical guidance for energy, data and media
- Max. extension length 13m
- Available in 2 sizes
- Alternative to zig-zag solutions, but lighter and requires less installation space
- Vertical applications implemented with ease

<table>
<thead>
<tr>
<th>Suitable industries and applications</th>
<th>Travel length</th>
<th>Speed ≤ [m/s]</th>
<th>Price index</th>
<th>Page</th>
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<td>Mobile telescopic antennas</td>
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</table>

#### guidelok slimline P / P.S - safe vertical guidance

**Vertical guidance**

- Up to 7m/s and 10m/s
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 50m
- No swinging of the e-chain®, high reliability due to the lock mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Low weight due to plastic construction
- Energy and data and all kinds of media can be safely guided

<table>
<thead>
<tr>
<th>Suitable industries and applications</th>
<th>Travel length</th>
<th>Speed ≤ [m/s]</th>
<th>Price index</th>
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<td>Automatic miniload warehouses</td>
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### guidelok horizontal - upper run guide, unsupported in swarf areas

**Upper run guide**
- Unsupported travels up to 50m are possible
- Swarf cannot get stuck between upper and lower run
- Modular system with few parts (also possible without lateral trough)
- Enormous increase of unsupported lengths for e-chains®
- Lower push/pull forces (smaller e-chains®, unsupported and rollers = energy-efficient)
- Lower cost than most steel chains or gliding systems
- Open guide trough design, swarf can fall through

### basic flizz® - cost-effective, enclosed solution for long travels

**Enclosed trough**
- Low-maintenance system for travels up to 100m
- Protection against weather and dirt exposure
- Cost-effective and fully enclosed complete system
- Standardised and modular design
- Easy installation using a bracket with different mounting options
- Cable lengths up to 50% shorter than festoons, low-profile installation
- Cables are guided with a defined bend radius so tensile forces are absorbed by the e-chain®
- Cables cannot tangle or get damaged, no slip ring contact, cables or hoses can be easily retrofitted
- Optically available moving end arm (e.g. as mechanical connection for scraper trolley)
- Available in 2 sizes, each also available in HD version for even higher push/pull forces

### micro flizz® - unsupported, small e-chains® in aluminium profiles

**e-chains® in aluminium profiles**
- e-chain® is guided in special slots, no gliding
- Control option via stationary switch cabinet
- Accelerations up to 50m/s², speeds up to 6m/s and data rates up to 10Gbit/s
- Fast assembly due to pre-configured, modular system
- Less space required
- Also available as pre-assembled system
- Smooth running due to ball bearings in the guide carriages
- Also available with an ESD chain material version (upon request)
- 3 sizes available

---

Technical details | guidelok horizontal | basic flizz® | micro flizz®
---|---|---|---
Product description and benefits | Solutions for horizontal motion | Suitable industries and applications | Travel length | Speed | Price index | Page
---|---|---|---|---|---|---
guidelok horizontal - upper run guide, unsupported in swarf areas | | | | | | |
Upper run guide | | | 50 | 1 | | 1038
basic flizz® - cost-effective, enclosed solution for long travels | | | 100 | 10 | | 1044
micro flizz® - unsupported, small e-chains® in aluminium profiles | | | 75 | 6 | | 1052
---

Find the perfect e-chain® quickly [www.igus.co.uk/finder](http://www.igus.co.uk/finder) [www.igus.co.uk/the-chain](http://www.igus.co.uk/the-chain) 3D CAD, configurators, service life calculators and more [www.igus.co.uk](http://www.igus.co.uk)
i sense - smart plastics for predictive maintenance

- Make maintenance and repair of your machines more efficient and cost-effective with smart plastics
- Eliminate unplanned downtime
- Increase service life
- Increase equipment efficiency
- Save time - faster detection of faults
- Reduce energy consumption
- Intelligent products predict the maintenance date in good time and can be integrated into your processes and systems

Push/Pull Detection System PPDS

- 3 PPDS system options are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the keypad directly at the device
- Compact housing, corrosion-resistant and with EMC protection
- The force limit is programmed in tensile and compression directions
- The plant shuts down when the force is exceeded
- Custom programmable and event logging in the data memory

Modular projects - special solutions from stock

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Absolute functional reliability
- System guarantee available upon request and depending on the application
- PPDS moving end - electronic Push/Pull Detection System
- Fixed end modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliding - gliding elements for even longer service life of e-chains® where long travels are involved
- HD trough systems with different installation set designs, matching the respective application and duty levels
### Technical details | E4/4HD | P4 | rol e-chain®

**e-chains® for long travels**

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<th>Fill weight (depending on radius) s [kg/m]</th>
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<th>Interior separation options</th>
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**Smaller bend radii (only for e-chains®) available upon request. Please consult igus® for delivery time.**
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<tr>
<th>Legend</th>
<th>Opening principle</th>
<th>Series / product</th>
<th>Inner height $h_1$ [mm] + $\delta$ [mm]</th>
<th>Inner width from - to $E_1$ [mm]</th>
<th>Outer height from - to $E_2$ [mm]</th>
<th>Outer width from - to $B_2$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Pitch $e$-chain link [mm]</th>
<th>Fill weight (depending on radius) $s$ [kg/m]</th>
<th>Unsupported length $FL_u$ [m]</th>
<th>Long travel length $L$ [m]</th>
<th>Interior separation options</th>
<th>ESD</th>
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# Technical details | Aluminium SuperTroughs | Steel troughs

## Guide troughs for long travels

### Aluminium SuperTrough - basic version for general use

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### Aluminium SuperTrough - heavy-duty version, for heavy-duty applications

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### Steel guide through - Very tough for heavy-duty applications

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### Steel guide through - one-piece, u-shaped, special solution for series 10, B15, 15

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1) Conditionally suitable if the crossbars are openable along the inner radius
2) For long travels applications, please consult igus®

Find the perfect e-chain® quickly ➤ www.igus.co.uk/finder➤ www.igus.co.uk/the-chain

3D CAD, configurators, service life calculators and more ➤ www.igus.co.uk
### Steel support tray for support of the lower run

#### Support tray - type 01

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<th>Outer height</th>
<th>Series zipper</th>
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### Aluminium support tray - flexible support of the lower run

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*Find the perfect e-chain® quickly* ➤ [www.igus.co.uk/finder](http://www.igus.co.uk/finder) ➤ [www.igus.co.uk/the-chain](http://www.igus.co.uk/the-chain) 3D CAD, configurators, service life calculators and more ➤ [www.igus.co.uk](http://www.igus.co.uk)
### guidefast - for crane girders and indoor cranes

For crane girders and indoor cranes

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### guidelite - long travels up to 150m, quick and cost-effective

For light-duty applications

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### Tubular trough system RS - lets light and swarf through

For very low loads

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### Snap-in trough system SP - simple and cost-effective

For light-duty applications

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### Technical details | chainfix strain relief elements

**Steel and stainless steel clamps - for maximum holding force**

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<th>Strain relief</th>
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<th>from - to ø [mm]</th>
<th>Series</th>
<th>Series</th>
<th>Series</th>
<th>Series</th>
<th>System</th>
<th>System</th>
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<tbody>
<tr>
<td>● CFX* single, double, triple clamps with standard base</td>
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<td>6 - 42</td>
<td>X</td>
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<td>6 - 42</td>
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<tr>
<td>● Clamp stacker and saddle elements</td>
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<td>X</td>
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<td>X</td>
<td>X</td>
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<td>● chainfix multi-clamps*</td>
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<td>X</td>
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**chainfix tiewrap plates - universal, bolted or clip-on**

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<th>X</th>
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<td>● Option 1A: tiewrap plates as individual parts &quot;series 2000&quot; + cable tiewraps</td>
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<td>● Option 18: tiewrap plates as individual parts &quot;series 3000&quot; + cable tiewraps</td>
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**CFU honeycomb strain relief - assembled in seconds New**

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<th>X</th>
<th>X</th>
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<tr>
<td>● Simply insert cables and hoses into honeycomb and close - strain relief for different cables in one slot</td>
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**Strain relief separators - with integrated teeth**

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<th>X</th>
<th>X</th>
<th>X</th>
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<th>X</th>
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**CFV - strain relief elements outside of the e-chain® cross section**

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<th>X</th>
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<th>X</th>
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<th>X</th>
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<tbody>
<tr>
<td>● Easy strain relief for cables, even in fully enclosed e-tubes</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1330</td>
</tr>
<tr>
<td>(With strain relief teeth, stepped)</td>
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**CFN - chainfix nuggets for C-profile and top-hat (DIN) rail 35**

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<tbody>
<tr>
<td>● Option 1: simple and universal cable fixation</td>
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<td>X</td>
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<tr>
<td>(for diameter of Ø 20mm and Ø 30mm)</td>
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<tr>
<td>● Option 2: fastening through clipping onto standard top-hat (DIN) rail 35</td>
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<td>≤ 20</td>
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**CFB - strain relief connector system, modular and customised**

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*Standard material: galvanised steel. Also available as stainless steel version (stainless steel material: 1.4301/AISI 304)*

---

Find the perfect e-chain® quickly: [www.igus.co.uk/finder](http://www.igus.co.uk/finder) | [www.igus.co.uk/the-chain](http://www.igus.co.uk/the-chain) | 3D CAD, configurators, service life calculators and more: [www.igus.co.uk](http://www.igus.co.uk)
## Selection by inner height

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## 24 - 29 mm
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## Selection by inner height

Find the perfect e-chain® quickly! www.igus.co.uk/find-e-chain® www.igus.co.uk/the-chain

3D CAD, configurators, service life calculators and more www.igus.co.uk
### Selection by inner height

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- **hi Series**: Product
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Find the perfect e-chain® quickly ➤ www.igus.co.uk/finder ➤ www.igus.co.uk/the-chain

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Application icons

Accessibility of e-chains® and e-tubes

- "easy" design - simply press cables in
- One-piece, non-openable
- Lids removable along the outer radius
- Crossbars operable along the outer radius, from both sides
- Crossbars operable along the inner radius, from one side
- Crossbars operable along the outer radius, from one side
- Lids removable along the outer radius

Application icons

- Unsupported
- Gilding
- Vertical hanging
- Vertical standing
- Zip-zag
- Side-mounted
- Circular movement
- Horizontal and vertical speed/acceleration
- Nested
- Side by side
- Combined motion

Price index

- igus® calculation
- Mounting brackets
- chainfix strain relief
- Guide troughs
- NC without pretension
- Noise-optimised
- Quick version
- ESD e-chains®
- Cleanroom certificates
- Design Award

Selection guide

designing e-chains®

1. Sizing e-chains®
   - Determine the size of the e-chain® based on the specified installation space of your machine and/or of the selected filling (such as the number of cables/outer diameter of cable).

2. Determine fill weight
   - Determine fill weight of (cables and/or media hoses) in [kg/m] using chainfix® quick selection for manufacturer specification.

3. Determine length of travel
   - Compare the fill weight calculated in (point 2) to the maximum fill weight of the selected e-chain® and check suitability for unsupported application.

4. Unsupported length
   - The maximum unsupported length initially depends on the fill weight and the e-chain® selected. At the same time, there are three different levels of unsupported length: FL® - recommended range of application, FL® - permitted sag, Critical sag: should never be allowed! Twice the value of the unsupported length determines the maximum travel in the unsupported type of operation.

5. Opening principle:
   - The quick finder gives an overview of the possibilities to fill the e-chain®.
   - If the application works self-supporting, then the selection follows the following criteria:

6. Bend radius R:
   - Determine the possible bend radius R [mm] of the e-chain® with respect to the cable diameter.

7. Interior separation is possible with:
   - Separators
   - Full-width shelves
   - Shelves
   - The price index gives you the possibility of making price comparisons of similar sizes within the range.
   - Low
   - Medium
   - High

8. Additional criteria:
   - ... for selection criteria such as pitch, permissible temperatures etc., please refer to our quick finder.

9. Part No. e-chain®
   - FL® - recommended range of application
   - FL® - permitted sag
   - Critical sag: should never be allowed! Twice the value of the unsupported length determines the maximum travel in the unsupported type of operation.

10. Price index
    - FL® - recommended range of application
    - FL® - permitted sag
    - Critical sag: should never be allowed! Twice the value of the unsupported length determines the maximum travel in the unsupported type of operation.

11. The following options are available if there is no possibility of self-supporting e-chain® application:
    - You can choose the next and stronger e-chain®, that can be operated unsupported.
    - Option: You can design your application to be gliding.

12. You can contact us directly or fax us your e-chain® requests! We will respond immediately!
Designing with igus®
Calculation tools, diagrams, applications
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</table>

## The-chains – moving energy made easy - an all-in-one energy supply system

There are many ways to supply your equipment and systems with energy and data. But there is no solution as universal and durable as the e-chain system®. Whether you have a circular movement, a hanging or standing application, a long travel distance or high loads - igus® plastic e-chains® will help you solve nearly any type of energy supply problem, quickly, safely and with ease. By using the extensive igus® construction kit, you will find the solution to match your needs and application: from individual components to a complete installation at your facility. We have developed an online tool to help you find what you need with greater ease [www.igus.co.uk/the-chain](http://www.igus.co.uk/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.

## The igus® lab and field experience

Our calculations and analyses are based on the result of ongoing practical tests in our technical centre and our experience with moving 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. 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.
**igus® terms** | Alphabetical order

**Abbreviations and description**

\[ \alpha = \text{Angle of rotation} \] [°]
\[ \Delta M = \text{Deviation of the centre point} \] [mm]
\[ a = \text{Acceleration} \] [mm/s²]
\[ AR = \text{Outer radius, e-chain® (twisterchain)} \] [mm]
\[ Ba = \text{Outer e-chain® width} \] [mm]
\[ Bi = \text{Inner e-chain® width} \] [mm]
\[ Bma = \text{Guide trough outer width} \] [mm]
\[ Bmi = \text{Guide trough inner width} \] [mm]
\[ D = \text{Over-length e-chain® radius in final position} \] [mm]
\[ D_1 = \text{Over-length for long travel gliding} \] [mm]
\[ FL_s = \text{Unsupported length with sag} \] [mm]
\[ FL_c = \text{Unsupported straight length} \] [mm]
\[ FL_u = \text{Unsupported lower run} \] [mm]
\[ FZ_{max} = \text{Maximum fill weight} \] [kg]
\[ H = \text{Nominal clearance height} \] [mm]
\[ H_s = \text{Clearance height with lowered moving end} \] [mm]
\[ ha = \text{Outer e-chain® height} \] [mm]
\[ H_F = \text{Required clearance height} \] [mm]
\[ h_i = \text{Inner e-chain® height} \] [mm]
\[ H_m = \text{Outer trough height} \] [mm]
\[ H_m = \text{Inner trough height} \] [mm]
\[ IR = \text{Inner radius, e-chain® (twisterchain)} \] [mm]
\[ K = \text{Add-on for bend radius} \] (K is taken from the data tables of the individual series) [mm]
\[ K_2 = \text{Add-on for bend radius if the mounting point is lowered for long travels} \] [mm]
\[ L_k = \text{e-chain® length} \] [mm]
\[ n = \text{Number of links} \] [1]
\[ n_{max} = \text{Number of installation sets (left/right)} \] [1]
\[ n_{tr} = \text{Number of trough sets (left/right)} \] [1]
\[ R = \text{Bend radius} \] [mm]
\[ RBR = \text{Reverse Bend Radius} \] [mm]
\[ S = \text{Length of travel} \] [mm]
\[ S/2 = \text{Half length of travel} \] [mm]
\[ T = \text{e-chain® link pitch} \] [mm]
\[ v = \text{Travel speed} \] [mm/s]
\[ X_m = \text{Inner machine limit (twisterchain)} \] [mm]
\[ X_m = \text{Outer radius e-chain®, including clearance (twisterchain)} \] [mm]
\[ \Delta CL = \text{Oszillation fixed end} \] [mm]

**igus® formulae**

- \( SFL_s = 2 \times FL_s \) Calculation of maximum travel length, unsupported with sag [mm]
- \( SFL_c = 2 \times FL_c \) Calculation of maximum travel length, unsupported straight [mm]
- \( B_m = Ba + 4 \) Minimum guide trough width [mm]
- \( H_m \geq 2 \times ha \) Minimum guide trough height for gliding applications [mm]
- \( K = \pi R + (2 \times T) \) Calculation of e-chain® length [mm]
- \( L_k = S_{2} + K \) This formula is generally valid for all types of applications if the fixed end is in the centre of the travel. Exceptions: circular movements and most long travels [mm]
- \( L_k = S_{2} + \Delta M + K \) This formula is valid if the fixed end is outside the centre of the travel. [mm]

**Calculation | e-chain® length and camber**

**Calculation of the e-chain® length**

If the fixed end of the e-chain® is located in the centre of the travel, the e-chain® length \( L_k \) is calculated by using half the length of travel and adding the value \( K \) for the bend radius. You can obtain the value \( K \) from the tables in the catalogue. Placing the fixed end in the centre of the travel is the most cost-effective solution because it requires the shortest e-chain®, cables and hoses.

**Principle of camber for igus® e-chains**

The largest possible unsupported length is influenced by the design, material and camber. Camber is the curve of the upper run along its unsupported length. All igus® e-chains® are manufactured with camber. In the installation dimensions section of each respective e-chain® description, you will find the measurement \( H_c \), 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 e-chains® do not have the same load-bearing capacity.

Please consult igus®.

**Calculation**

\[ L_k = S_{2} + \Delta M + K \]

This formula is valid if the fixed end is outside the centre of the travel. [mm]

**Camber**

The largest possible unsupported length is influenced by the design, material and camber. Camber is the curve of the upper run along its unsupported length. All igus® e-chains® are manufactured with camber. In the installation dimensions section of each respective e-chain® description, you will find the measurement \( H_c \), 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 e-chains® do not have the same load-bearing capacity. Please consult igus®.

**More information** ▶️ www.igus.co.uk
**Unsupported** | Short travels

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

**Unsupported applications**

If the upper run of the e-chain® operates without touching the lower run over the entire travel, it is called an unsupported application. The distance between 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 depends on the fill weight and the type of e-chain® or e-tube. As a result, we differentiate among three types of unsupported length:

1. **Unsupported with straight upper run $FL_u$**

   The e-chain® is unsupported $FL_u$ when the upper run still has camber, is straight or has a maximum sag of 1/2 of the e-chain® link height. Installing the e-chain® in $FL_u$ is always recommended. The e-chain® runs smoothly without additional vibration.

2. **Unsupported with permitted sag $FL_b$**

   The e-chain® is unsupported $FL_b$ when the sag is more than 1/2 e-chain® link height and less than the smallest available radius of this e-chain® series. In most applications the e-chain® can be used unsupported $FL_b$ without any problems. There are restrictions concerning the maximum speed and acceleration.

3. **Critical sag**

   When the sag of the e-chain® is higher than allowed for $FL_b$, it is in critical sag. Using an e-chain® in critical sag should be avoided or solved with special solutions. An e-chain® should never be installed with critical sag. Applications may reach critical sag after long service times. The e-chain® or e-tube should be replaced in these cases. Please contact us!

**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 stronger igus® e-chain®
- Support the e-chain® in the unsupported area. This option means restrictions for acceleration, speed and noise as a consequence – three fundamental examples are detailed to below – please consult igus® if you are considering this possibility - we will gladly provide you with a detailed proposal
- Use a multiband e-chain® or nest two igus® e-chains® inside one another. (Please consult igus®)
- Design the travel distance as a gliding application

Support of the $FL_u$ area. A) The overall straight, unsupported travel can be increased here by a maximum of 50% of the $FL_u$ and in case of option B) by a maximum of 100%.

Support of the $FL_b$ area. C) The overall travel distance can be extended to a maximum of 100% from $FL_b$. For every igus® e-chain® or e-tube, you will find the values for $FL_u$ and $FL_b$ in two locations: on the following pages in this chapter as an overview and within every individual series’ chapter. They are essential for:

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

More information ▶ www.igus.co.uk
Unsupported | Short travels

Speed, acceleration and service life
For unsupported applications, the acceleration ($a$) is the more critical parameter than the speed ($v$). High acceleration can cause the e-chain® to vibrate and reduce its service life. This is a particular issue if the e-chain® already has a sag greater than the $L_{D2}$ value. Max. values for acceleration ($a$), speed ($v$) and service life are achieved only with e-chains® incorporating the $L_{D2}$ design. Igu® e-chain® systems can sustain very high loads. To date, a peak acceleration of 784m/s² has been achieved during continuous use. The guideline values that result from continuous experiments in the igus® laboratory and countless practical applications can be obtained from the two diagrams for your design. Our tests confirm that these standard values apply to all igu® e-chains® and e-tubes. It is crucial to determine whether the application will be designed as unsupported straight $L_{D2}$ or unsupported, with sag $L_{D2}$.

Standard values on service life for $L_{D2}$, depending on acceleration

Unsupported $L_{D2}$ $L_{D2}$

$F_{L2}$, service life $Z$

<table>
<thead>
<tr>
<th>Acceleration ($a$) [m/s²]</th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>$L_{D2}$ service life [m]</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

Contact surfaces
Unsupported igus® e-chains® normally require some type of surface on which the lower portion of the e-chain® runs. A wide range of configurations is available, as the drawings on the right demonstrate. Many material options are feasible: metal sheets, polymers, stone, wood, concrete, glass, etc. We also have solutions to minimise the noise generated by the e-chain® lower run. Please consult igus®. When selecting the running surface, please ensure that 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. Exceptions: if the acceleration is greater than 20m/s² or if the height is limited to the $H_1$ measurement. In such cases, locking mounting brackets keep the e-chain® under the $H_1$ measurement.

Unsupported lower run
E-chains® without support along the lower run have restricted use. The value $L_{D2}$ usually must be determined in a test by igus®. The maximum permissible amount of the projection depends on the fill weight, the selected e-chain®, the dynamics, and other factors. The combination of fill weight, e-chain® type and $L_{D2}$ is always different. If the lower run of the e-chain® cannot be supported over the whole travel, please consult igus®.

Unsupported | Noise-optimised

Minimise noise levels with igus® e-chain systems®
The igus® product range includes e-chains® optimised for low noise. 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 play a role in overall noise generation. Have our specialists design the quietest e-chain system® for your application, for example.

System T3 ≤ 33dB(A)
Optimal smoothness of motion was the prime development goal for the t-shaped brand e-chain® T3. The igus® T3 e-chain® is very flexible and runs due to the special geometry- very smoothly. A measurement indicates a value of 33dB(A) at 1m/s and with an unsupported length with series T3.29.050.0380.0, and all this with a sound pressure level generated by external noise.

System E3 ≤ 38dB(A)
Long-term tests in the igus® acoustic laboratory showed reductions of 19-20dB(A) compared with standard e-chains®, measured at a speed of 1.8m/s and an acceleration of 3m/s². Figure determined in the igus® laboratory in accordance with DIN 45635, taking into consideration background noise, for the series E3.22.060.0440.

System E6.1 ≤ 32dB(A) / System E6 ≤ 46dB(A)
A measurement conducted by the Rhineland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 46dB(A) at 2m/s and with an unsupported length of 1.5m with series E6.52.10.100.0, and all this with at least 10dB(A) sound pressure level generated by external noise. A value of 32dB(A) was measured during the igus® internal test 4479 for the series E6.1.070.0550.0. The quiet operation is due to a very small pitch and a brake in the stop-dog system. The so-called “polygon effect” is virtually non-existent during the rolling of the E6/E6.1 e-chains®.

System E4 ≤ 46dB(A)
A measurement by the Rhineland Technical Inspection Authority (TÜV Rheinland) for system E4/101, series 221.10.200.0 indicates a value of 46dB(A) at 1.5m/s with an unsupported length. Due to the special rubber pads (shown in red) of the system E4, the noise will be largely damped. The standard version of the E4.1 and E4 systems are already very reduced in noise due to their special designed stop-dog.

Selected noise tests - external noise corrected measurement values

<table>
<thead>
<tr>
<th>e-chain®</th>
<th>System</th>
<th>Averaging of the corrected sound pressure levels</th>
<th>Test method</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29</td>
<td>E6.1</td>
<td>≤ 32 (dB(A))</td>
<td>1.0m/s</td>
</tr>
<tr>
<td>T3.29</td>
<td>T3</td>
<td>≤ 33 (dB(A))</td>
<td>1.0m/s</td>
</tr>
<tr>
<td>E3.22</td>
<td>E3</td>
<td>≤ 36 (dB(A))</td>
<td>1.8m/s</td>
</tr>
<tr>
<td>E6.52</td>
<td>E6</td>
<td>≤ 46 (dB(A))</td>
<td>2.0m/s</td>
</tr>
<tr>
<td>E3.42</td>
<td>E4.1</td>
<td>≤ 46 (dB(A))</td>
<td>1.0m/s</td>
</tr>
<tr>
<td>E4.42</td>
<td>E4.1</td>
<td>≤ 50 (dB(A))</td>
<td>1.0m/s</td>
</tr>
<tr>
<td>255</td>
<td>E2 medium</td>
<td>≤ 53 (dB(A))</td>
<td>1.5m/s</td>
</tr>
<tr>
<td>Chain 1 third-party product</td>
<td>≤ 77 (dB(A))</td>
<td>2.0m/s</td>
<td></td>
</tr>
<tr>
<td>Chain 2 third-party product</td>
<td>≤ 68 (dB(A))</td>
<td>2.0m/s</td>
<td></td>
</tr>
<tr>
<td>Chain 3 third-party product</td>
<td>≤ 73 (dB(A))</td>
<td>2.0m/s</td>
<td></td>
</tr>
</tbody>
</table>

Source: TÜV Rheinland, except series E3.22 and T3.29 – source: igus laboratory

We have received an official certificate from the Rhineland Technical Inspection Authority (TÜV Rheinland Berlin-Brandenburg) and we are able to provide you with a copy upon request.
Quick overview | Fill weights up to 4kg/m
Unsupported length vs. fill weight vs. inner height

Preselection for the following series
- E1 ➤ Page 174
- easy chain® ➤ Page 198
- zipper ➤ Page 226
- E2 micro ➤ Page 260
- E2 mini ➤ Page 300
- E2.1 micro ➤ Page 320
- E2.1 ➤ Page 334
- E2/000 ➤ Page 360
- E2/E100 ➤ Page 428
- E2R ➤ Page 454
- R2.1 ➤ Page 478
- RX ➤ Page 502
- E4.1L ➤ Page 524
- E4.1 ➤ Page 566
- E4/light ➤ Page 660
- T3 ➤ Page 722
- E3 ➤ Page 732
- E6.1 ➤ Page 750
- E6 ➤ Page 788
- e-skin® ➤ Page 834
- TH3 ➤ Page 850

Note: This matrix is just a preselection. Exact values can be found in the chapters of the chosen series and on the next pages.

Exact values can be found ➤ in the chapters of the chosen series

www.igus.co.uk
Unsupported straight $FL_6$ | Fill weights up to 1.5kg/m

Load diagram for unsupported use

Unsupported length $FL_6$ [m]

Travel $S$ [m]

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0

FLB = unsupported e-chain® with permitted sag

FLG = unsupported e-chain® within the e-chain®

$R$ = Bend radius

$S$ = Length of travel

$H$ = Nominal clearance height

$K$ = Add-on for bend radius

The maximum travel

The maximum travel always amounts to $2 \times FL_6$ or $FL_6$

If the fixed end is in the centre of the travel. In this case, the following applies:

$$L_s = \frac{S}{2} + K$$

These values are essential for finding a suitable e-chain® for your fill weight and travel distance, and 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®.

Important information

- Fill weight - weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given [kg/m]
- $FL_6$ - unsupported e-chain® with straight upper run
- $FL_6$ - unsupported e-chain® with permitted sag
- To the right of the $FL$ graph of the diagram, the application is shown in critical sag. This must be avoided!

Find the values for $FL_6$ and $FL_6$ also ► in every individual series chapter!

FLB = unsupported e-chain® | Fill weights up to 1.5kg/m

Load diagram for unsupported use

Unsupported length $FL_6$ [m]

Travel $S$ [m]

0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6

0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0


E1.1L ► Page 198  E4.1 ► Page 320  E4.1L ► Page 502


E2 mini ► Page 290  E6 ► Page 524  E6/1 ► Page 660

E2.1 ► Page 334  E6.1 ► Page 722  E6.1L ► Page 750

E2.1 ► Page 334  E6.1L ► Page 722  E6/1 ► Page 750

E2R ► Page 454  E8/000 ► Page 834  TH3 ► Page 850

E2R ► Page 454  E8/000 ► Page 834  TH3 ► Page 850

You will find the diagrams for each series listed individually in the catalogue.
Unsupported straight $F_{L_g}$ | Fill weights up to 9.0 kg/m

Load diagram for unsupported use

Unsupported with sag $F_{L_b}$ | Fill weights up to 9.0 kg/m

Load diagram for unsupported use

Important information
- Fill weight - weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given [kg/m]
- $F_{L_g}$ - unsupported e-chain® with straight upper run
- $F_{L_b}$ - unsupported e-chain® with permitted sag
- To the right of the $F_{L_g}$ graph of the diagram, the application is shown in critical sag. **This must be avoided!**

These values are essential for finding a suitable e-chain® for your fill weight and travel distance, and 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®.

The maximum travel
The maximum travel always amounts to $2 \times F_{L_g}$ or $F_{L_b}$
If the fixed end is in the centre of the travel. In this case, the following applies e-chain® length: $L_e = \frac{S}{2} + K$

- $S$ = Length of travel
- $R$ = Bend radius
- $H$ = Nominal clearance height
- $H_e$ = Required clearance height
- $K = \pi \times R + (2 \times T)$ Add-on for bend radius

Diagram series legend on the right

You will find the diagrams for each series listed individually in the catalogue.

Find the values for $F_{L_g}$ and $F_{L_b}$ also in every individual series chapter!
Important information

- Fill weight - weight of all cables and hoses, including contents (for media hoses) within the e-chain®, typically given [kg/m]
- FLg - unsupported e-chain® with straight upper run
- FLs - unsupported e-chain® with permitted sag
- To the right of the FLg graph of the diagram, the application is shown in critical sag. This must be avoided!

These values are essential for finding a suitable e-chain® for your fill weight and travel distance, and 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®.

Important information

The maximum travel
The maximum travel always amounts to 2 x FLg or FLs
If the fixed end is in the centre of the travel. In this case, the following applies e-chain® length: L0 = L/2 + K
S = Length of travel
R = Bend radius
H = Nominal clearance height
Hr = Required clearance height
K = \pi x R x (2 x T)
Add-on for bend radius

Diagram series legend

Fill weights up to 90kg/m

Find the values for FLg and FLs also in every individual series chapter!
Gliding | Long travels

Gliding application 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 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 centre, the e-chain® length is calculated as follows: \( L_k = \frac{S}{2} + K_2 \).

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 moving end).

Example of lowered moving end

\[ L_k = \frac{S}{2} + K_2 \]
\[ L_k = \text{e-chain® length} \]
\[ S = \text{Length of travel} \]
\[ H = \text{Half length of travel} \]
\[ R = \text{Bend radius} \]
\[ H = \text{Offset fixed end} \]
\[ H = \text{Trough inner height} \]
\[ H = \text{Lowered mounting height} \]
\[ D = \text{Over-length for long travel gliding} \]
\[ K_2 = \text{Add-on with lowered moving end} \]

Long travel with an energy-efficient rol e-chain® - saving drive power

Advantages for long travel applications with igus® e-chains®
- Travels over 800m
- 6m/s speed (up to 10m/s possible after consultation with igus®)
- Fill weights up to 70kg/m
- 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, fibre 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

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.

To be able to advise you accurately, we require the following specifications:
- Travel \([\text{m}]\)
- Travel speed \([\text{m/min}]\) or \([\text{m/s}]\)
- Acceleration \([\text{m/s}^2]\)
- Fill weight \([\text{kg/m}]\)
- Maximum cable/hose outer diameter \([\text{mm}]\)
- Type and number of cables and hoses
- Required bend radius \([\text{mm}]\)
- Cycle frequency (n/day or n/hour)
- Technical environment

To be able to advise you accurately, we require the following specifications:
- Travel \([\text{m}]\)
- Travel speed \([\text{m/min}]\) or \([\text{m/s}]\)
- Acceleration \([\text{m/s}^2]\)
- Fill weight \([\text{kg/m}]\)
- Maximum cable/hose outer diameter \([\text{mm}]\)
- Type and number of cables and hoses
- Required bend radius \([\text{mm}]\)
- Cycle frequency (n/day or n/hour)
- Technical environment

IGUS® specifies:
\[ Bi_{\text{min.}} \geq \frac{R}{4} \]

Recommended ratio of inner width \(Bi\) to bend radius \(R\)
The minimum inner width of an e-chain® on long travels depends on its bend radius. For particularly large bend radii on long travels, please consult igus®.

igus® specifies:
\[ Bi_{\text{min.}} \geq \frac{R}{4} \]

Recommended ratio of inner width \(Bi\) to bend radius \(R\)
The minimum inner width of an e-chain® on long travels depends on its bend radius. For particularly large bend radii on long travels, please consult igus®.

We recommend pivoting mounting brackets for gliding applications.

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

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.

To be able to advise you accurately, we require the following specifications:
- Travel \([\text{m}]\)
- Travel speed \([\text{m/min}]\) or \([\text{m/s}]\)
- Acceleration \([\text{m/s}^2]\)
- Fill weight \([\text{kg/m}]\)
- Maximum cable/hose outer diameter \([\text{mm}]\)
- Type and number of cables and hoses
- Required bend radius \([\text{mm}]\)
- Cycle frequency (n/day or n/hour)
- Technical environment

IGUS® specifies:
\[ Bi_{\text{min.}} \geq \frac{R}{4} \]

Recommended ratio of inner width \(Bi\) to bend radius \(R\)
The minimum inner width of an e-chain® on long travels depends on its bend radius. For particularly large bend radii on long travels, please consult igus®.

We recommend pivoting mounting brackets for gliding applications.

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

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.

To be able to advise you accurately, we require the following specifications:
- Travel \([\text{m}]\)
- Travel speed \([\text{m/min}]\) or \([\text{m/s}]\)
- Acceleration \([\text{m/s}^2]\)
- Fill weight \([\text{kg/m}]\)
- Maximum cable/hose outer diameter \([\text{mm}]\)
- Type and number of cables and hoses
- Required bend radius \([\text{mm}]\)
- Cycle frequency (n/day or n/hour)
- Technical environment

IGUS® specifies:
\[ Bi_{\text{min.}} \geq \frac{R}{4} \]

Recommended ratio of inner width \(Bi\) to bend radius \(R\)
The minimum inner width of an e-chain® on long travels depends on its bend radius. For particularly large bend radii on long travels, please consult igus®.

We recommend pivoting mounting brackets for gliding applications.

Please call us and within hours you will receive a detailed system proposal.
Gliding | Long travels

Long travels with igus® guide troughs
Guide troughs allow igus® e-chains® and e-tubes to continue smooth, low-friction operation in long travel applications. Principle sketches are shown on this page. The height of the trough must be at least twice that of the e-chain® height. The sides must provide a chamfered opening. The trough inner width is the same as the e-chain® outer width, plus 4mm (on igus® aluminium SuperTrough®) $B_{in} = B_a + 4$. 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 from stock 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 during installation
- All screw heads should be flush with the through
- Smooth level 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 igus® guide troughs.

Friction values for e-chains® made of igumid G and various glide bars

<table>
<thead>
<tr>
<th>igumid G</th>
<th>igus® polymer glide bar</th>
<th>Galvanised steel sheet</th>
<th>Anodised aluminium</th>
<th>AISI 303 stainless steel (material 1.4301)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient of friction dynamic</td>
<td>0.19</td>
<td>0.45</td>
<td>0.54</td>
<td>0.48</td>
</tr>
</tbody>
</table>

Source: igus lab

Travel speeds and accelerations
Travel speeds up to 6m/s in continuous operation are possible and in use on current applications. In special cases, up to 10m/s possible after consultation with igus®. For example, E4 e-chains® achieve speeds of 22m/s and accelerations of 784m/s² in crash test units. In these cases, however, only a few thousand cycles are required per year. Acceleration plays a crucial role in the life 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. It is important to get the correct design support from our engineers.

Service life
We offer service life calculations for your application based on our extensive gliding application experience. As developers of polymer plain bearings, we possess vast material behaviour knowledge which we apply to the development of e-chains® as well. Units with 200m travels have been in operation for 8 years with minimum maintenance. Units up to 60m 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 operational 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.

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

Calculation
Comprehensive tests place us in the position of knowing our products capabilities. 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
- Behaviour of hydraulic and media hoses under push/pull conditions
- Behaviour 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 can carry out a test for you in our laboratory. Please consult igus®.

Technical data - gliding applications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel max.</td>
<td>600 m - 800 m</td>
</tr>
<tr>
<td>$v$ max.</td>
<td>10 m/s</td>
</tr>
<tr>
<td>$a$ max.</td>
<td>50 m/s²</td>
</tr>
<tr>
<td>Fill weight max.</td>
<td>70 kg/m</td>
</tr>
</tbody>
</table>

Depending on the application, please check with igus®.
**Vertical hanging** | **Application**

**Vertical, hanging applications**

For hanging applications, heights of over 100 m are possible with igus® e-chains®. Particularly in the area of material flow technology, the igus® e-chain® enables a bundled supply of a wide variety of cable types. The use of an e-chain® ensures that individual cables are not entangled in parts of shelves or protruding pallets.

**Cables and hoses**

Two important factors in vertical hanging applications are how the cables and hoses lay in the e-chain® and how they are secured at the end points: all cables and hoses must be hung so that they bear their own weight. The e-chain® fulfills the function of orderly conduit bundling only 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 and hoses are the basic prerequisites for hanging installations. Cables must be able to move freely and bear their own weight.

**Vertical motion with lateral acceleration**

If the application has a purely vertical movement without lateral acceleration, a lateral support is not necessary. If lateral acceleration occurs, lateral guidance of the e-chain® must be provided in most cases. The diagram shows the principle 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. The lateral guidance must be installed accordingly. If you have a choice, the layout in figure A is preferred. The lateral acceleration then acts transversely to the e-chain®, where it is more stable. When using a guide, an e-chain® with camber should be selected. This ensures that the chain is pressed into the trough.

---

**Vertical hanging | guidelok slimline | Application**

**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 quiet operation of the e-chain®, but needs a little more space. If there is no room - as is frequently the case for storage and retrieval systems in narrow aisles - a no camber e-chain® must be ordered. igus® offers numerous NC versions without camber. (No Camber, without pretension). NC version by simply turning the outer link of the E4.1 system. Order example: E4.32.10.175.0.NC

**Technical data - vertical hanging**

<table>
<thead>
<tr>
<th>Stroke height max.</th>
<th>100 m</th>
</tr>
</thead>
<tbody>
<tr>
<td>( v \text{ max.} )</td>
<td>20 m/s</td>
</tr>
<tr>
<td>( a \text{ max.} )</td>
<td>50 m/s²</td>
</tr>
</tbody>
</table>

**Special solution for vertical motion:**

**guidelok slimline P - safe and fast vertical guidance**

- Up to 7 m/s and 10 m/s²
- Up to 80% less trough required, saving costs and weight
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Low weight due to plastic construction
- Energy, data and fluids supply without interruption in one system

More information ➤ From page 1834
Vertical standing

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 outwards. The igus® product range 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 e-chain® so that they can bend freely and bear their own weight. 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, in most cases, be supported along the outer radius. For higher e-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 whole distance must often be supported. Due to the wide variety of combinations involving fill weights, stroke heights, e-chain® types and bend radii, we strongly recommend you make use of our consulting services.

Combined motion
Combined vertical and horizontal movements are possible with igus® e-chains® for a cost-saving solution.

Zig-zag

Zig-zag application: de-commissioning of a nuclear power station. About 14 m high steel containers are milled into small swarf for disposal

Zig-zag design
The modular design of igus® e-chains® facilitates this space-saving and unconventional solution. For modern platform technology, such as theatre stages, a variety of cables and hoses which adjust the stage height must be accommodated. Lack of space almost invariably presents difficulties. The picture shows an e-chain® in a zig-zag configuration. The unextended e-chain® is stored in a basket. If the platform is raised, the e-chain® unfolds, generating little or no noise. This construction is possible with the E4.1 system as well as many other types. Please consult igus® for these kinds of applications.

Technical data - zig-zag

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. travel</td>
<td>40 m</td>
<td>More upon request</td>
</tr>
<tr>
<td>v max.</td>
<td>0.4 m/s</td>
<td>Depending on the application, please check with igus®</td>
</tr>
<tr>
<td>a max.</td>
<td>1.0 m/s²</td>
<td>Depending on the application, please check with igus®</td>
</tr>
</tbody>
</table>

Special solution for vertical motion: liftband - guide up to a height of 13m with limited installation space

- For high vertical applications that have plenty of space horizontally but little height space
- Modular, silent, space-saving; vertical guidance for energy, data and media
- Max. extension length: 13m
- Available in 2 sizes
- Alternative to zig-zag solution, but lighter and smaller installation space
- Vertical applications implemented with ease

More information ➤ From page 1028
Unsupported - side-mounted

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: ● Time ● Fill weight ● Width of the e-chain® ● Bend radius ● Parallel placement

The greater the fill weight of the e-chain®, the shorter the available unsupported length. When placed on its side, the e-chain® width, in effect, becomes the height. As this height increases, the e-chain system® becomes proportionately more stable. If further movement in a second axis is added to the parallel motion of two e-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°

Long travel, gliding

Side-mounted e-chains® can travel over 100m with adequate guidance. All e-chain® types are designed to operate gliding on their side. The corresponding glide surface is usually an igus® polymer, stainless steel (1.4301 material) or galvanised 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 vertical separators and spacers. Igus® will gladly provide an application analysis, free of charge.

Side-mounted | Application

Un-supported - side-mounted

The lying e-chain®, one side of the igus® e-chain® is supported and 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.

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Circular movement with RBR

RBR (Reverse Bend Radius) means that the e-chain® can bend in two directions. Most igus® e-chains® can be used in RBR designs, with the exception of some bend 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 bend radius R of an e-chain®. For example, Part No. E4.32.15 100/425.0, describes series E4.32 e-chain® with an inner width of 150mm, standard bend radius of R = 100mm and RBR of 425mm. Most circular movements can be achieved with an RBR option. Angles of rotation up to 540° have been achieved. Please consult igus® for your particular application.

Circular movements require less installation height. The e-chains® glide mostly on surfaces made of polymer, stainless steel (1.4301 material) or steel and are guided through channels in the circular movement. See side mounted for further design tips. Bend radius, circular radius and e-chain® width are variable with this product line.

Circular movement with standard e-chains®

The photo to the left shows an application which was achieved using standard e-chains®. Such solutions are possible if 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.

More information ► www.igus.co.uk/rbr-configurator

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More information ► www.igus.co.uk/rbr-configurator

Table of RBR e-chains® available from stock

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Series</th>
<th>Part No.</th>
<th>Series</th>
<th>Part No.</th>
<th>Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>03.05.10/70</td>
<td>E2 micro</td>
<td>10.2.048/048</td>
<td>E2 mini</td>
<td>1500.036.075/450.0</td>
<td>E2/000</td>
</tr>
<tr>
<td>03.10.016/070.0</td>
<td>E2 micro</td>
<td>10.2.075/220</td>
<td>E2 mini</td>
<td>2400.060.052/250</td>
<td>E2/000</td>
</tr>
<tr>
<td>05.16.016/018</td>
<td>E2 micro</td>
<td>10.3.028/028</td>
<td>E2 mini</td>
<td>250.050.080/600</td>
<td>E2 medium</td>
</tr>
<tr>
<td>06.20.018/018</td>
<td>E2 micro</td>
<td>10.3.038/060</td>
<td>E2 mini</td>
<td>250.070.060/600</td>
<td>E2 medium</td>
</tr>
<tr>
<td>06.30.038/350</td>
<td>E2 micro</td>
<td>10.3.048/048</td>
<td>E2 mini</td>
<td>270.15.150/900</td>
<td>E2/000</td>
</tr>
<tr>
<td>06.30.018/08</td>
<td>E2 micro</td>
<td>10.3.075/220</td>
<td>E2 mini</td>
<td>B15.050.100/450</td>
<td>E2 mini</td>
</tr>
<tr>
<td>06.64.018/08</td>
<td>E2 micro</td>
<td>10.4.028/028</td>
<td>E2 mini</td>
<td>E/Z14.1.080/038</td>
<td>easy chain®</td>
</tr>
<tr>
<td>10.1.028/028</td>
<td>E2 mini</td>
<td>10.4.028/600</td>
<td>E2 mini</td>
<td>E/Z14.2.080/038</td>
<td>easy chain®</td>
</tr>
<tr>
<td>10.1.028/600</td>
<td>E2 mini</td>
<td>10.4.048/048</td>
<td>E2 mini</td>
<td>E/Z14.3.080/038</td>
<td>easy chain®</td>
</tr>
<tr>
<td>10.1.028/48</td>
<td>E2 mini</td>
<td>10.4.048/100</td>
<td>E2 mini</td>
<td>E/Z14.3.075/075</td>
<td>easy chain®</td>
</tr>
<tr>
<td>10.1.075/220</td>
<td>E2 mini</td>
<td>10.4.075/220</td>
<td>E2 mini</td>
<td>E/Z14.4.080/038</td>
<td>easy chain®</td>
</tr>
<tr>
<td>10.2.028/028</td>
<td>E2 mini</td>
<td>1400.050.075/05.0</td>
<td>E2/000</td>
<td>TE1450.028/028</td>
<td>snapchain</td>
</tr>
<tr>
<td>10.2.038/600</td>
<td>E2 mini</td>
<td>1400.060.038/038.0</td>
<td>E2/000</td>
<td>TE2000.063/063</td>
<td>snapchain</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Vertical rotary movement of an E2 e-chain®
Circular movement | RBR | Guide troughs

igus® guide troughs - standard modular system RM

Depending on the dynamics and load of the application, the guides are made of steel or stainless steel (material: 1.4301). For applications with high duty cycle, we provide a plastic sliding liner in the guide troughs. The igus® e-chains® do not require any additional sliding pads either for contact with the substrate or with the side walls. We would be happy to offer complete systems with guide troughs, and also support you with drawings for your own construction.

igus® Multi Rotation Module (MRM) allows circular movements up to 900° and more

With the Multi Rotation Module (MRM) you can implement larger angles of rotation of 900° and more. Thanks to stackable add-on modules the angle of rotation can be extended virtually indefinitely. One layer for rotations up to 540°, two layers for 900°, larger angles of rotation are possible with more layers. The rotation and add-on modules are ideally suited for rotary movements with high fill weights and limited space.

- Several individual systems are stacked on each other and thus are combined to a complete system
- The maximum rotation of the individual levels can easily be added, thereby enabling rotary movements up to 900° and more
- Compact design enables the operation even in tight spaces, extendable
- High fill weights possible
- e-chains® can be freely assembled
- Peripheral speeds up to 1 m/s

Functional principle
- Is the defined rotation angle of the lower layer reached, the next upper module is carried along automatically due to an integrated connection system. The entire system only needs a mechanical force transfer
- The construction minimises 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 fibre optic cables
- Even for tough environmental conditions.

igus® system RM - guide troughs for circular movement applications with RBR

More information ► www.igus.co.uk/MRM

More information ► From page 966

Rotary movements in small spaces - twisterband

- Rotary movements up to 700°°*(Installation position, vertical: up to 3,000°; horizontal: 7,000° and more possible) ● Rotary speeds up to 180°/s possible ● Snap open with hinge or with "easy" design ● HD version with very stable pin and hook connection for an even longer service life as well as for temperatures from 0°C to -80°C ● Compact, modular and lightweight ● Bands can be lengthened and shortened as required ● Minimum installation space, fits closely around the rotary axis ● Can be reliably used in various installation positions (horizontal or vertical) ● Cost-effective and easy to fill

More information ► From page 988

Special solutions for multi-axis motion

The cable reeling drum without a slip ring - igus® e-spool

- More versatile and flexible to use than cable reeling drums ● Different media (power, data and fluids) can be routed together in one system ● Energy supply in all directions (horizontal, vertical, diagonal) ● It travels must be kept free ● Very well suited for theatre and stage technology ● No tensile load on the cables ● Cables can be retrospectively added or changed ● Alternative to zig-zag solutions ● Max. deployment and retract speed: 1 m/s ● Large standard product range and special projects available

More information ► From page 1006

igus® e-spool and zig-zag solutions in a theatre. Space-saving and maintenance-free; guide all kind of energy, data and media safely, in all directions

More information ► www.igus.co.uk/MRM
Cables and hoses

General rules for igus® 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 and hoses in the e-chain®, 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. It is possible to mix pneumatics, electric and hydraulics in the same compartments. In addition to the quality of the cables used, the arrangement of each conduit within the e-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.

Bend radius

The bend radius of our e-chains® depend on the largest 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. We recommend complete e-chain system® - where bend radii for all cables and hoses, interior separation and service life are correctly matched. igus® chainflex® cables permit the smallest bend radius of 5 x d for one million strokes.

Orderly cables with igus® internal 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.

D1 + D2 > 1,2 x hi

Further guidelines for distribution

The cable or hose weight should be symmetrically distributed across 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 series can be combined. The cables should always have strain relief at the fixed and at the moving end. Exceptions are made only for certain hydraulic hoses with length compensation issues or other high pressure hoses (i.e. hydraulic hoses). Generally, the faster and more frequently the e-chain® operates, the more important the exact positioning of the cables and hoses inside the e-chain® becomes. Due to the wide variety of the possibilities, we strongly recommend you take advantage of our free consultation services for your specific applications. igus® tip: interior separation configurator: www.igus.co.uk/quickchain100

Clearance space “all around” for round electrical cables

ϕ1 + ϕ2 ≤ 2 mm

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 0.5m/s and cycles over 10,000p.a. igus® interior separation offers a safe solution for this situation.

Further distribution rules

If d1 + d2 > 1,2 x inner e-chain® height, no separation between the two cables/hoses is necessary. Two cables/ hoses should never be left unguided on top of one another or be allowed to become tangled.

ϕ1 + ϕ2 ≤ 1,2 x hi

Clearance space for various cables/hoses

Cable type | %
---|---
Electrical round cables | 10
Electrical flat cables | 10
Pneumatic hoses | 5-10
Hydraulic hoses | 20
Media hoses | 15-20

Please note: chainflex® and e-tubes more than 80% of the cross-section!
Distribution rules | Cables and hoses

Round electrical cables
For electrical cables, the round cable is a safe, simple and cost-effective solution for e-chain systems®. We recommend the following criteria for selecting the proper round electrical cables:

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

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

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 bend radius.

4) The division of the e-chains® interior using igus® interior separators or shelves 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) Cables and hoses with different jacket materials must not be allowed to stick together. 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 bend segment and the fixed part 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®: bend radii of all cables and hoses, interior separation and service life are then optimised.

Cables must be able to bend freely. chainflex® cables can be strain-relieved directly at the mounting bracket.
Strain relief for electrical cables
Strain relief can consist of standard elements or can be custom-made. For most applications, our standard programme of C-profiles with mounting brackets and space-saving chainfix clamps can be used. We also offer simple strain relief solutions using tiewrap plates and cable tiewraps. 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 between 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 bend point of the e-chain® has no influence over the durability of igus® e-chain® cables. It is possible, therefore, to integrate the strain relief with the mounting bracket. Strain relief options, i.e. chainfix clamp or space-saving tiewrap plate, are offered by igus® for almost all e-chains®.

Features of chainfix clamps
- 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 are available for complete systems with cables and strain relief
- Improved housing foot clamp for easy fit into C-profile
- Black housing and setscrews for aesthetic appearance
- Setscrews, tightened with Allen wrench, for easy installation
- Mark of the installation direction

Tiewrap plates as individual parts
The tiewrap plate is integrated on the end of the mounting bracket, and cables and hoses can be fixed using cable tiewrap. Quick and easy to assemble (clip on). The tiewrap plate is also captivated by the fixation of the mounting brackets. Longer service life for cables. Space-saving design. Assembly in the C-profile of the KMA (plastic/metal mounting brackets) possible

Tiewrap plates with clip-on connection for the C-profile
The tiewrap plates 3050.ZC and 3075.ZC can be clipped directly into the C-profile without bolts or any extra hardware. Clip-on tiewrap plates can be released and repositioned with just a screwdriver as a lever.

4 options available:
- Tiewrap plates with clip-on connection for the C-profile
- Integrated strain relief for E2 e-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 4mm to 24mm. chainfix clips are available for C-profiles, also suitable for assembly in the KMA mounting brackets and clip-on strain relief for cross bars. Characteristics: Quick installation 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 separators - separator with integrated strain relief strain relief teeth
- Can be integrated in mounting bracket
- Strain relief separator can be positioned as required
- Double strain relief possible
- Easy to assemble without any screws
- Cost-effective
- For most series from stock

Stepped strain relief element outside of the e-chain® cross section
- Easy strain relief for cables, even in enclosed e-tubes
- Stepped strain relief - good access
- For e-chains® and e-tubes
- Easy retrofit assembly possible
- Simple installation into top-hat rails and C-profile on KMA mounting brackets

chainfix nugget - for C-profile and top hat rail
Option 1: universal cable fixation, for diameter with Ø 20mm and Ø 30mm
Option 2: fastening through clipping onto standard top-hat (DIN) rail
- The smart helper for electricians in the machine building industry
- Accessory for all KMA with integrated C-profile
- Easy to assemble, without any screws and tools
- Adjustable to every e-chain® filling
- Very small space requirement
- Easy strain relief due to fixation with pre-harnessed cable tiewrap
igus® material data | Technical environment

Flammability of igumid G

The flame-retardant characteristics of igumid G can be described using various classifications. Most of igus® e-chains® are made from igumid G, i.e. the popular E4.1 and E2/000 e-chain systems®. Classifications:

- Test procedure VDE 0303 parts 3/5.70
- Tested according to UL94 “Standard tests for Flammability of Plastic Materials for arts in Devices and Appliances” classification 94 HB
- Tested according to DIN 4102 “Fire Behaviour 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).

Flammability of igumid NB

All easy e-chains® and series 14, F17 e-chains® are made from the flame-retardant igumid NB material. These e-chains® have the following flame-retardant classifications:

- UL94 classification - V2
- VDE 0303 part 3/5.70 classification - IIb
- DIN 4102 flammability of materials - B2
- Please consult igus® for material availability of V0

Weathering and temperature resistance

Igumid G is very suitable for outdoor applications. In our experience, the mechanical properties of the e-chain® are not impaired. Igumid e-chain® are used in applications as cold as -40°C (40°F). Installation may be eventually compromised at temperatures below -25°C (-13°F). In such cases, we offer special solutions made from cold-elastic materials: +120°C (248°F) continuous temperatures are possible with igumid G, short-term up to +180°C (357°F). However, the chemical values are reduced and the service life is impaired.

Resistance to radiation

Igumid® 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 10^3 r/h, the mechanical properties of igumid G change very little.

Metallically detectable plastic e-chains®

- For the food and tobacco industry
- igumid DT - automatic detection by all common metal detection systems
- Particles as small as 1.0mm can be recognised for fragments passing at speeds of 20m/min

More information | www.igus.co.uk/detectable-chain
ESD e-chains® | Technical environment

100% of the ESD e-chains® produced 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 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. To discharge build-up of electrostatic energy, igus recommends the igumid ESD material for the production of sensitive electrical components and for applications in hazardous environments (ATEX). Igumid ESD surpasses even the standard material igumid and has been tested for over 10 million cycles in igus® technology.

Your benefits with ESD products

- ESD material tested with over 10 million cycles for the toughest requirements
- Openable e-chains® with mounting brackets and interior separation in ESD and ATEX design available from stock
- Standardised product - igumid ESD
- Proven over years of use in explosion-proof areas
- Short delivery times 08:00am to 08:00pm - ordering and delivery service

Conductivity of igus® products from igumid ESD

In contrast to temporary conductive surface coatings or volatile incorporated antistatic agents, the additives used grant a long lasting and maintenance-free conductivity. An e-chain® is not deemed conductive if the individual components exhibit conductivity, but the whole e-chain® from one end to the other must offer continuous conductivity. All products in this catalogue are optimised in this regard and the continuous conductivity is measured and documented prior to delivery by a 100% test. Only e-chains® that have passed this test are provided with the test seal and delivered. Colour® of igumid ESD products: similar to RAL 7015, slate-grey to ensure distinguishability from standard materials.

(*Exception: cover zipper and triflex® R - here black in colour)

More information on igus® ESD e-chains®

1. General safety information:

These additional operating instructions apply to our ESD e-chains® in colour grey (similar to RAL 7015). They supplement the installation instructions for the standard e-chains® and the catalogue information. The information in these instructions relates only to data impacting on ESD areas. 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.

2. Assembly, removal and installation

Please follow the information in the installation instructions for the standard e-chains® and the catalogue 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 in order to discharge any electrostatic charges occurring. Assembly, installation, commissioning and maintenance may be performed only by personnel properly 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.

3. 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 catalogue information. Correct grounding must be checked in particular in the case of ESD e-chains®.

4. 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 customised maintenance plans can become an issue and will be created if necessary)

More information ➤ www.igus.co.uk/esd

More information ➤ www.igus.co.uk/esd
Cleanroom and ESD | Technical environment

Safe and clean with igus® e-chains®

Cleanroom qualification of igus® e-chains®
By using a special material, the already low abrasion of the e-chain® can be reduced even further. In many applications where cumbersome special solutions are required, a simple standard e-chain® e-chains® can be used instead. For many applications, the e-chains® in special materials are virtually abrasion-free. IPA tests confirm that standard igus® e-chain® e-chains® meet cleanroom requirements, "tested and certified as very good". e-chains® for cleanroom applications demand very high wear resistance of moving parts, e-chains®, for example, must be very wear-resistant, in order to meet the normal requirements for such a sensitive environment.

ISO Class 1

ISO 14644-1

Class per DIN EN US Fed. Std. 209E Equivalent to
ISO Class 1 no comparable classification no comparable classification
ISO Class 1 no comparable classification no comparable classification
ISO Class 1 no comparable classification no comparable classification
ISO Class 1 no comparable classification no comparable classification
ISO Class 1 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 2 no comparable classification no comparable classification
ISO Class 3 Class 1 no comparable classification no comparable classification
ISO Class 3 Class 1 no comparable classification no comparable classification
ISO Class 5 Class 100 no comparable classification no comparable classification

*Special material cleanroom

Classification series
Report number
Speed

E61.29.50.075.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E3.15.040.075.0 IG 0704-400 0.5 / 1.0 / 2.0
E6.29.060.150.0,CR* IG 0704-400 0.5 / 1.0 / 2.0
E4.32.10.063.0,CR* IG 1504-755 0.5 / 1.0 / 2.0
E3.29.050.038.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E14.3.30.38.0 IG 0308-295 1.0
E14.3.30.38.0 IG 0308-295 1.0
E29.060.150.0 CR* IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0
E4.32.10.063.0 IG 1303-640-1 0.5 / 1.0 / 2.0

Spatter, hot swarf
Laboratory tests and numerous field applications have proved that igus® e-chains® and e-tubes reliably protect cables in welding robots and machine tools since 20 years. e-tubes made from the igumid® igumid HT material are resistant to hot swarf up to +850°C (1,562°F), no swarf sticks. This opens new possibilities for replacing more complex and expensive steel tubes. All E2 and E4 e-tubes from the standard product range are available in igumid HT material upon request. igumid G in direct contact with large amounts of melted aluminium is not recommended.

Dirt, dust, swarf
Materials and design make igus® e-chains® excellent problem-solvers in tough environments. Experience and application references are available upon request. Please consult igus® with your application.

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 Page 143 shows an excerpt of the resistance to chemicals. Acid-resistant e-chains® are available upon request.

Coolant resistance
e-chains® and e-tubes have proven resistance to cooling agents. However, we are always willing to perform individual tests if you have particular problems or advanced developments. Table on resistance to chemicals Page 143

Compost sludge, numerous related references available upon request

Cleanroom qualification of igus® e-chains®

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

ISO Class 2

according to DIN EN ISO 14644-1 for E14.3.038.0

Particle generation measurement

Result: particle generation E14.3.038.0

Dirt, dust, sand, corundum, coal dust, glass splinters, cement dust, sand, and dust are available in igumid HT material upon request.

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Dirt, dust, sand, corundum, coal dust, glass splinters, cement dust, sand, and dust are available in igumid HT material upon request.
Material data igumid | Colours | Technical environment

Material data igumid

<table>
<thead>
<tr>
<th>Material data table</th>
<th>Units of measurement</th>
<th>igumid G</th>
<th>igumid NB</th>
<th>igumid ESD</th>
<th>igumid TE</th>
<th>igumid GE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield stress (dry/wet)</td>
<td>MPa</td>
<td>190/130</td>
<td>78/40</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Elongation at break (dry/wet)</td>
<td>%</td>
<td>004/006</td>
<td>22/210</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<tr>
<td>Flexural modulus (tensile test)</td>
<td>MPa</td>
<td>9,000/7,000</td>
<td>2,900/1,200</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<tr>
<td>Limit of elasticity (bending)</td>
<td>MPa</td>
<td>7,800</td>
<td>3,000</td>
<td>9,500</td>
<td>1,290</td>
<td>7,200</td>
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<tr>
<td>Flexural strength</td>
<td>MPa</td>
<td>240</td>
<td>120</td>
<td>230</td>
<td>55</td>
<td>200</td>
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<tr>
<td>Shore-D-Hardness</td>
<td>–</td>
<td>79</td>
<td>79</td>
<td>83</td>
<td>72</td>
<td>80</td>
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<tr>
<td>General properties</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Density</td>
<td>g/cm²</td>
<td>1.37</td>
<td>1.14</td>
<td>1.2</td>
<td>1.02</td>
<td>1.46</td>
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<tr>
<td>Moisture absorption 23/50 r.h.</td>
<td>% by weight</td>
<td>1.4</td>
<td>3.4</td>
<td>1.9</td>
<td>0.8</td>
<td>0.7</td>
</tr>
<tr>
<td>Maximum water absorption</td>
<td>% by weight</td>
<td>5.6</td>
<td>7.6</td>
<td>7.3</td>
<td>1.6</td>
<td>4</td>
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<tr>
<td>Electrical properties</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Specific transitional resistance</td>
<td>Q/cm</td>
<td>&gt;10¹¹</td>
<td>&gt;10¹¹</td>
<td>&gt;10¹¹</td>
<td>&gt;10¹¹</td>
<td>&gt;10¹¹</td>
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<tr>
<td>Surface resistance ROA</td>
<td>Ω</td>
<td>&gt;10¹⁰</td>
<td>&gt;10¹⁰</td>
<td>&gt;10¹⁰</td>
<td>&gt;10¹⁰</td>
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<td>Thermal properties</td>
<td></td>
<td></td>
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<tr>
<td>Lower operating temperature</td>
<td>°C / °F</td>
<td>-40°C / -40°F</td>
<td>-40°C / -40°F</td>
<td>-40°C / -40°F</td>
<td>-40°C / -40°F</td>
<td>-40°C / -40°F</td>
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<tr>
<td>Upper long-term application temp.</td>
<td>°C / °F</td>
<td>+120°C / +248°F</td>
<td>+80°C / +176°F</td>
<td>+80°C / +176°F</td>
<td>+70°C / +158°F</td>
<td>+123°C / +248°F</td>
</tr>
<tr>
<td>Upper short-term application temp.</td>
<td>°C / °F</td>
<td>+180°C / +356°F</td>
<td>+170°C / +338°F</td>
<td>+150°C / +302°F</td>
<td>+140°C / +284°F</td>
<td>+203°C / +392°F</td>
</tr>
<tr>
<td>Material characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Fire resistance as per UL94</td>
<td>–</td>
<td>HB</td>
<td>V2</td>
<td>HB</td>
<td>HB</td>
<td>HB</td>
</tr>
<tr>
<td>Silicone-free</td>
<td>–</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>Halogen-free</td>
<td>–</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>x</td>
</tr>
<tr>
<td>2002/95/EG (RoHS)</td>
<td>–</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>2002/96/EG (WEEE)</td>
<td>–</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>–</td>
</tr>
<tr>
<td>Colour</td>
<td>according to RAL, approx.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Black</td>
<td>Standard, from stock</td>
<td>RAL 9004</td>
<td>Index .0</td>
<td>Orange</td>
<td>Special colour</td>
<td>RAL 2003</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour</td>
<td>RAL 7001</td>
<td>Index .31</td>
<td>Yellow</td>
<td>Special colour</td>
<td>RAL 1018</td>
</tr>
<tr>
<td>White</td>
<td>Special colour</td>
<td>RAL 9003</td>
<td>Index .1</td>
<td>Light grey</td>
<td>Special colour</td>
<td>RAL 7035</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour</td>
<td>RAL 9002</td>
<td>Index .1S</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Colours and special solutions

Product prices are always based on the colour black. e-chains® in any colour shown in the colour selection chart are subject to a percentage based colour surcharge. Any other colours 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, coloured e-chains® are not available from stock. Delivery time and surcharges for coloured 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 coloured 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 colours.

E-chain® colour variations with RAL-numbers

**Black e-chains® available from stock!** Delivery time* for special colours: from 5 business days.

– The delivery times indicated correspond to the average time until the ordered goods are dispatched.

*Chemical resistance | Technical environment

<table>
<thead>
<tr>
<th>Chemical resistance of igumid</th>
<th>Medium</th>
<th>Concentration % weight</th>
<th>igumid G / NB</th>
<th>igumid TE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>2</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Acetone</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Ammonia (aqueous)</td>
<td>10</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Benzene</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Bitumen</td>
<td>100</td>
<td>+</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Boric acid (aqueous)</td>
<td>10</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Butyric acid</td>
<td>100</td>
<td>+</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Calcium chloride (aqueous)</td>
<td>Sat. aq. sol.</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Ckaustic potash</td>
<td>10</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Chlorinated hydrocarbons</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Chlorine water</td>
<td>Sat. aq. sol.</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Chromic acid (aqueous)</td>
<td>1</td>
<td>+</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Colour</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Diesel oil</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Fats, cooking fat</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Fluorinated hydrocarbons</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Formaldehyde (aqueous)</td>
<td>30</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Formic acid (aqueous)</td>
<td>2</td>
<td>+</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Gasoline</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Hydraulic oils</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>pH₂⁻</td>
<td>+</td>
<td>–</td>
<td></td>
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<tr>
<td>Hydrochloric acid</td>
<td>2</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Hydrochloric acid</td>
<td>10</td>
<td>–</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Ink, printing ink</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Mercury</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Methyl acetate</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Mineral oil</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Oil, cooking</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Oil, lubricating oil</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Oleic acid</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Paraffin oil</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Perchloroethylene</td>
<td>100</td>
<td>++</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>Polyester resins (with styrene)</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Potassium carbonate (aqueous)</td>
<td>60</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Potassium sulphate (aqueous)</td>
<td>100</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Propane gas</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Sodium carbonate (aqueous)</td>
<td>50</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Tartaric acid</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Vaseline</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td></td>
</tr>
<tr>
<td>Zinc sulphate (aqueous)</td>
<td>10</td>
<td>++</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

++ = Resistant
+ = Conditionally resistant
– = Non-resistant
Sat. aq. sol. = Saturated aqueous solution
Standards and certificates | Certifying

igus® is certified in accordance with DIN EN ISO 9001:2015 and IATF 16949:2016 in the field of energy supply systems, cables and harnessing, as well as plastic plain bearings.

ESD
According to a statement by TÜV Rheinland 557/ Ex 125071309.00 / 17, igus® energy chains do not fall under the scope of application of Directive 2014/34/EU. The material properties of igumid ESD combine the requirements according to ESD. igus® therefore recommends igumid ESD for use in the relevant ATEX zone.

IPA Cleanroom
A lot of 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 and VDE
All igumid materials for e-chains® and e-tubes have got the UL-material approval. The material igumid NB has got 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, DESINA and NFPA
chainflex® cables are produced according to a lot 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 CC Link certified. DESINA: many chainflex® cables are Desina-compliant. NFPA: with the CF130.US and CF140.US, igus® offers the MTW (Machine Tool Wire) cable which meets the requirements of NFPA 79.

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 (see also noise-optimised e-chains® ► page 107)

igumid
The material igumid is free from toxins, according to 2002/95/EC (RoHS).

iF Design Award
Since 1987 - 38 iF Design Awards ► www.igus.co.uk/iF

Noise level tests in igus® own acoustic laboratory

More information ► www.igus.co.uk
readychain® | Ready-to-install harnessed 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

From one off to mass production.

readychains® - increase your capacity and cash flow quickly with igus®
- Reduce overhead costs
- Reduce your throughput times from days to hours
- Respond flexibly to order variations
- Utilise igus® manufacturing capacities and our know-how in cable assembly

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

Industrially harnessed energy chain modules direct from the manufacturer ...
You decide the quantity, the travel and the degree of harnessing ...

Benefits:

3 basic
1. ONE supplier - combine suppliers
2. Reduce assembly time
3. Reduce failures

6 standard
4. No electrical termination needed
5. 100% digitally tested
6. No cable surplus

9 standard+
7. Reduce interfaces
8. Optimise points of connection / interfaces
9. Ready-to-install multi-axis system

13 premium
10. Opt optimise your transport / assembly
11. One single assembly
12. One Part No. / Product group
13. Plug & Play

Further information, videos, configurators and product finders:
- www.igus.co.uk/RCbasic
- www.igus.co.uk/RCstandard
- www.igus.co.uk/RCstandard+
- www.igus.co.uk/RCpremium

www.readychain.co.uk
Everything from one source
The readychain® system includes pre-assembled, customised e-chain systems®. The "Plug & Play" solutions are configured, manufactured and delivered according to individual customer specifications. The use of the mounting rack can yield benefits even at low quantities.

Flexible components
The telescopic supports and braces of the readychain® rack allow flexible adaptation to the installation needs on site. Changes in serial production can be undertaken easily. By using modular parts, additional components can also be easily attached to the rack.

Sustainable use
The components of the readychain® rack are galvanised and thus designed for a long life. Each rack can be 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.

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.

12 readychain® factories worldwide
In the igus® readychain® factory, we assemble customised e-chain systems®. All under one roof

Full service from system acceptance to installation

Customised cable assembling

Up-to-date production processes, custom-build or serial production

In the igus® readychain® factory, we assemble customised e-chain systems®. All under one roof

More information ► www.readychain.co.uk

3D CAD, configurators, service life calculation and more ► www.readychain.co.uk
**readychain® | Connectors, cables and accessories**

**igus® connectors**
- Round connector connector kit
- Square plug connector kit
- Tools and accessories

**igus® readycable®**
- 4,400 drive cables in accordance with 24 manufacturer standards, from stock
- Catalogue standards: Video/vision/bus technology
- Catalogue standards: network/ethernet/F0C/Field bus
- Catalogue standards: CF/INI initiator cables up to 4 x d

**igus® hoses and attachments**
- Configured online with hose cable configurator

---

**readychain® | Configured, fitted, with system guarantee**

1. **System acceptance on your machine**
2. **Project planning**
3. **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 production acceptance
   - Only available in Germany
4. **igus® installation**
   - System installation by igus® specialists
   - igus® supervision service for your own installation
   - Transparent, fixed price

---

**readychain® service**
- We visit you
- Define interfaces
- Logistics planning
- Cycle integration
- Time schedule

**readychain® service**
- Component selection
- Interface optimisations
- Documentation
- Integrated project management
- Cost optimisation

---

**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 production acceptance

---

**readychain® installation**
- System installation by igus® specialists
- igus® supervision service for your own installation
- Transparent, fixed price

---

More information | www.readychain.co.uk
Capacity for 600,000 assembled cables a year, more than 18,000 test programmes, 1,800 test adapters

Process reliability, crimp force monitored, automated, time-optimised

Computer-based high-voltage testing and inspection of all assembled cables

Modern machinery - automatic stripper-crimper

Special cable assemblies to your specifications

Worldwide system guarantee

Global Warranty Certificate

Guarantee 36 month guarantee

In our warehouse the material waits for your order and not your order for the materials!

e-chains® ... 100,000 e-chain® components

... chainflex® cables ... 5 million metres of cable on stock

... Harnessing 5,000 connector components

Hundreds of metres of guide troughs

2,750m² test lab - more than 15,000 tests every year

Quickly within reach

Numerous strain relief solutions

More than 8,000 cables per week

Just-in-time supply

3D CAD, configurators, service life calculation and more ▶ www.readychain.co.uk
The most cost-effective cable for your drive
igus® offers 7 price levels with the same electrical properties for readycable® harnessed drive cables to your requirements:
- From ± 180° torsion to small movements
- From the smallest to the largest bend radius
- For outdoor or indoor applications
- Seven different outer jacket materials
- chainflex® measuring system and servo cables

Find the right drive cable and calculate the savings potential ▶ www.igus.co.uk/readycable-finder

Example:

- B&R CF887, PVC, 15xd
- ELAU CF210, PVC oil-resistant, 10xd
- Fanuc CF21, PVC oil-resistant, 7.5xd
- LinMot CF897, iguPUR, 15xd
- NUM CF270, PUR, 10xd
- Rexroth CF27, PUR, 7.5xd
- SEW CFROBOT7, PUR, ±180°

Hammed drive cables in accordance with 24 manufacturer standards:
- Allen Bradley ... B&R ... Baumüller ... Beckhoff ... Berger Lahr ... Control Techniques ... Danaher Motion ... ELAU ... Fagor ... Fanuc ... Festo ... Heidenhain ... Jetter ... Lerze ... LinMot ... LTI DRIVES ... Mitsubishi Electric ... NUM ... Omron ... Parker ... Rexroth ... SEW ... Siemens ... Stöber ...

60,000 test programmes
- High-voltage tests
- Digital continuity test
- 1,800 test adapters
- Custom tests

More information ▶ www.igus.co.uk/test

Predictable reliability ... tested!
- 36-month igus® guarantee on every cable**
- More than 2.0 billion test strokes per year
- 1.4 million electric measurements per year
- Security for machine builders
- Clear statements on durability and service life
- Unique in the market (as of 04/2016)

More information ▶ www.igus.co.uk/chainflex-guarantee

**Predictable reliability for full 36 months, or up to 10 million double strokes (5 million double strokes for the very cost-effective chainflex® M cables), whichever comes first. For the guarantee to be valid, the cables must be operated within the parameters for each cable series shown in the selection tables.
**igus® installation service including guarantee**

Improve technology and reduce costs with fully installed igus® systems

---

**Installation service | Save time and money**

**Save time and money - installation and maintenance of your e-chain system®**

**New installation**
- Installation of a tailored e-chain system® on-site at your facility or your new plant
- Documentation and planning of the project at your construction site
- Configuration of the system interfaces and consulting by igus® engineering
- Fast and error-free installation on your machine
- Everything from a single source - including customised system guarantee

**Conversion / Modernisation / Retrofit**
- Modernisation and implementation concept for the conversion of existing energy supply systems to e-chain systems®
- To expand the capability
- Reduction of costs and energy consumption
- Increased service life
- Increased plant reliability and availability

**Inspection**
- Assessment of the technical condition of the your energy supply system
- Determination of the repair and maintenance requirements
- Reporting of deficiencies, risks and optimisation proposals
- Documentation of the plant condition in the inspection report

**Maintenance**
- Preventive maintenance of more complex e-chain systems® proactively recognise and address any damage or issues, therefore extending the service life of your system.
- Adjustments on e-chains®, cables and strain reliefs
- Measurement, assessment, and documentation in the maintenance handbook

**Repair / Service**
- Prompt, flexible, and professional exchange and service on e-chain systems® and their components

---

More Information ➤ [www.igus.co.uk/installation](http://www.igus.co.uk/installation)

3D CAD, configurators, service life calculation and more ➤ [www.igus.co.uk](http://www.igus.co.uk)
Installation service | Quick, error-free, calculable prices

Installation service | Everything from a single source

From a single source - components, service, and reliability

- Your reliable plant
  "Improving technology and reducing costs"

- System guarantee up to 36 months (depending on application)

Supervisor service
New installation
Installation support

igus® installation service

Inspection and maintenance
Repair service and maintenance
Modernisation and retrofit

- igus® energy chains
- igus® chainflex® cables
- igus® harnessed system

Tested: igus® lab, Cologne

Development and production: igus® GmbH, Cologne

Installation service
- Fast, professional installation by specialised installation staff: saves installation time and cost, increases the service life, prevents failures
- Predictable installation time for your system at your premises - helps you schedule and contributes to high plant availability
- Short term, flexible installation dates even on weekends or at night - if you need immediate support or if the scheduled date has to be shifted. Simply give us a call and we will find a solution

igus® fixed prices for the installation and maintenance - saves you time and effort in planning and purchasing
Fast service with approved partners in your area - keeps travel and response times short and saves installation costs
Everything from a single source from the manufacturer - including customised system guarantee - we can help you! Ranging from the initial assessment to the final system configuration, the delivery, and the on-site installation of the system in your plant. You can focus on your core business
igus® solutions for simple applications

- Reinforcement for existing corrugated tube systems
- Cost-effective, one-piece strip design
- Guide cable bundles quickly and easily
- Energy supply for offices and furniture
Reinforcement for existing corrugated tube systems

Advantages of the e-rib series:

- When low-cost corrugated tubes are used to protect and carry cables but stability must be increased
- To stabilise corrugated tubes used in highly dynamic applications
- Longer service life for cables in corrugated tubes
- 4 sizes for nominal hose widths NW23, NW29*, NW36 and NW48 available - *NW29 for PMA corrugated tubes

When to use another system:

- When a fully enclosed, yet still openable corrugated tube is needed
  ► e-skin®, page 834
Reinforcement for existing corrugated tube systems - e-rib

Corrugated tubes are used in many applications where the mechanical demands on the energy supply are low. The key advantages are easy, versatile and exceptionally cost-effective guidance of energy, data and media. However, fast movements can lead to damaging sideways movement. The igus® e-rib is easy to clip onto a corrugated hose and can help prevent this. The e-rib fills the joints of the corrugated hose to stabilise it in such a way that it can only move in one direction. The corrugated hose has an unsupported length due to the lateral guide elements. When retrofitted, the e-rib enables an upgrade of existing applications with just a few simple steps. The e-rib is independent of the hose manufacturer (depending on size) and available in four sizes.

- Stability prevents unintentional sideways movement
- Less installation space required
- Easy to retrofit
- No change in the impermeability of the corrugated hose

Typical industries and applications:
- Fast, short and unsupported applications
- Standing or hanging applications
- Automotive industry
- Machine and plant construction
- Pick & Place applications
- Plotter
- Handling systems
- Medical technology
- SCARA robots

Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/e-rib

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/e-rib
### e-rib | Overview

#### Technical data

- **e-chain® material - permitted temperature °C, igumid NB**: +5°C up to +80°C
- **Mounting bracket material - permitted temperature °C, igumid NB**: +5°C up to +80°C
- **Flammability class**: VDE 0304 IIC UL94-V2

#### Overview nominal width | Manufacturer | Pitch

<table>
<thead>
<tr>
<th>Part No. e-rib</th>
<th>For nominal width NW [mm]</th>
<th>For corrugated tube systems</th>
<th>e-rib segments per 1 metre</th>
<th>e-rib segment length [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL.00.23.0</td>
<td>NW 23</td>
<td>Independent of manufacturer</td>
<td>7 segments</td>
<td>147mm</td>
</tr>
<tr>
<td>EL.01.29.0</td>
<td>NW 29</td>
<td>Only for PMA corrugated tube I-PISG-29B/S</td>
<td>10 segments</td>
<td>100mm</td>
</tr>
<tr>
<td>EL.00.36.0</td>
<td>NW 36</td>
<td>Independent of manufacturer</td>
<td>7 segments</td>
<td>147mm</td>
</tr>
<tr>
<td>EL.00.48.0</td>
<td>NW 48</td>
<td>Independent of manufacturer</td>
<td>7 segments</td>
<td>147mm</td>
</tr>
</tbody>
</table>

The e-rib is clipped onto the corrugated tube and stabilises it in such a way that it can only move in one direction.

### e-rib | Order key

#### Order example

**Order example for e-rib, colour black, with mounting bracket and securing clips for one metre corrugated tube (independent of manufacturer):**

- **e-rib (for 1.0m)**: Please indicate the quantity
  - EL.00.36.0
- + **Mounting brackets**: 1 set mounting bracket
  - EL.00.12
- + **Securing clips**: Option: with 2 securing clips
  - EL.00.S
- + **Cable tiewrap**: Option: 1 cable tiewrap (for securing clips)
  - MAT0170899

Order text: 7 pieces EL.00.36.0 + 2 x EL.00.12 + 2 x EL.00.S + 1 x MAT0170899

#### Order key

**Example: Part No. e-rib EL.00.36.0**

- **Series e-rib Index 00 for all manufacturers**
- **Nominal width (NW)**
  - EL.00.36.0

#### Order index for colour options

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard .0</td>
<td>Orange</td>
<td>Special colour .2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour .31</td>
<td>Yellow</td>
<td>Special colour .4</td>
</tr>
<tr>
<td>White</td>
<td>Special colour .1</td>
<td>Light grey</td>
<td>Special colour .14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour .18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-ribs available from stock.

Above special colours upon request.

The igus® e-rib corrugated tube reinforcement can be easily retrofitted onto existing systems.
Find a video online
www.igus.co.uk/e-rib

1. igus® delivers the required length. Any excess length can easily be cut off.

2. To attach the e-rib to the hose fitting, there must be no connection point on the last 7 ribs of the e-rib, otherwise the mounting bracket will not lock securely.

3. If necessary, cut off thicker end section and any excess length and place the two mounting brackets on the side plates.

4. Finally, the mounting brackets are fixed with two cable tie wraps.

Tests from the igus® laboratory: The igus® e-rib (pictured on the right) stabilises the corrugated hose significantly in sideways movement during acceleration or deceleration.

- The e-rib stabilises the corrugated hose so that it can only move in one direction. The corrugated hose requires no other support along its length due to the e-rib.
Series EL.00.23 | e-rib for corrugated tubes from different manufacturers | Nominal width 23

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>Bi</th>
<th>Ba</th>
<th>hA</th>
<th>Segments per metre</th>
<th>Segment length [mm]</th>
<th>Weight [kg/m]</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL.00.23.0</td>
<td>23</td>
<td>28</td>
<td>41</td>
<td>29.9</td>
<td>7</td>
<td>147</td>
<td>≈0.16</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Installation dimensions and product description

- At the ends, cut off the thicker section from the e-rib and, if necessary, cut to size!
- e-rib segments can be joined together if necessary with pliers

Position | Description | Part No.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>PMA corrugated tube</td>
<td>I-PISG-23B</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>e-rib</td>
<td>EL.00.23</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>PMA connection fitting</td>
<td>I-BVND-M323GT</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Securing clip, optional*</td>
<td>EL.0</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Mounting bracket connection set</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Note: For each locking device, 2 clips EL.00.S and a cable tie wrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tie wrap.

Series EL.01.29 | e-rib - only for PMA corrugated tube I-PISG-29B/S | Nominal width 29

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>Bi</th>
<th>Ba</th>
<th>hA</th>
<th>Segments per metre</th>
<th>Segment length [mm]</th>
<th>Weight [kg/m]</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL.01.29.0</td>
<td>29</td>
<td>34.5</td>
<td>44.5</td>
<td>33</td>
<td>10</td>
<td>100</td>
<td>≈0.12</td>
<td>EL.01.12</td>
</tr>
</tbody>
</table>

Installation dimensions and product description

- At the ends, cut off the thicker section from the e-rib and, if necessary, cut to size!
- e-rib segments can be joined together if necessary with pliers

Position | Description | Part No.
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td>PMA corrugated tube</td>
<td>I-PISG-29B</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>e-rib</td>
<td>EL.01.29</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>PMA connection fitting</td>
<td>I-BVND-P299GT</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Securing clip, optional*</td>
<td>EL.01.9</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Mounting bracket connection set</td>
<td>EL.01.12</td>
</tr>
</tbody>
</table>

Note: For each locking device 2 clips EL.01.S and one cable tie wrap MAT0170899 are required!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tie wrap.
e-rib | Series EL.00.36 | Product range New
Reinforcement for existing corrugated tube systems

Series EL.00.36 | e-rib for corrugated tubes from different manufacturers | Nominal width 36

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>Bi</th>
<th>Ba</th>
<th>ha</th>
<th>Segments per metre</th>
<th>Segment length [mm]</th>
<th>Weight [kg/m]</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL.00.36.0</td>
<td>36</td>
<td>42</td>
<td>56</td>
<td>42.9</td>
<td>7</td>
<td>147</td>
<td>≈ 0.22</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Installation dimensions and product description

At the ends, cut off the thicker section from the e-rib and, if necessary, cut to size!

e-rib segments can be joined together if necessary with pliers

Position | Description          | Part No.  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PMA corrugated tube</td>
<td>I-PISG-36B</td>
</tr>
<tr>
<td>2</td>
<td>e-rib</td>
<td>EL.00.36</td>
</tr>
<tr>
<td>3</td>
<td>PMA connection fitting</td>
<td>I-BVND-M506GT</td>
</tr>
<tr>
<td>4</td>
<td>Securing clip, optional*</td>
<td>EL.00.S</td>
</tr>
<tr>
<td>5</td>
<td>Mounting bracket connection set</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Note: For each locking device, 2 clips EL.00.S and a cable tie wrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tie wrap.

More information | www.igus.co.uk/EL.00.36 | www.igus.co.uk/EL.00.48 | 3D CAD, configurators, service life calculation and more | www.igus.co.uk/e-rib

---

e-rib | Series EL.00.48 | Product range New
Reinforcement for existing corrugated tube systems

Series EL.00.48 | e-rib for corrugated tubes from different manufacturers | Nominal width 48

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>Bi</th>
<th>Ba</th>
<th>ha</th>
<th>Segments per metre</th>
<th>Segment length [mm]</th>
<th>Weight [kg/m]</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL.00.48.0</td>
<td>48</td>
<td>54</td>
<td>67.5</td>
<td>53.6</td>
<td>7</td>
<td>147</td>
<td>≈ 0.27</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Installation dimensions and product description

At the ends, cut off the thicker section from the e-rib and, if necessary, cut to size!

e-rib segments can be joined together if necessary with pliers

Position | Description          | Part No.  
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>PMA corrugated tube</td>
<td>I-PISG-48B</td>
</tr>
<tr>
<td>2</td>
<td>e-rib</td>
<td>EL.00.48</td>
</tr>
<tr>
<td>3</td>
<td>PMA connection fitting</td>
<td>I-BVND-M508GT</td>
</tr>
<tr>
<td>4</td>
<td>Securing clip, optional*</td>
<td>EL.00.S</td>
</tr>
<tr>
<td>5</td>
<td>Mounting bracket connection set</td>
<td>EL.00.12</td>
</tr>
</tbody>
</table>

Note: For each locking device, 2 clips EL.00.S and a cable tie wrap MAT0170899 are needed!

*Securing clips for additional attachment. They can be placed anywhere on the e-rib and fixed to the corrugated tube with a cable tie wrap.
**E1**

Cost-effective, one-piece strip design for simple applications

**Advantages of the E1 series:**
- If a small amount of filling is required
- If a cost-effective e-chain® is required
- If easy installation is required
- If a simple solution is required
- For low duty cycles

**When to use another e-chain® series:**
- For higher fill weights
  - easy chain®, page 198
  - zipper, page 226
- When easy filling with connectorised cables is required
  - easy chain®, page 198
Cost-effective, one-piece strip design for simple applications - E1

Modular e-chain®, 1-piece strip designed for simple applications - the E1 design brings the benefits of an e-chain® to applications where previously this solution was too expensive. E1 is more economic for higher volumes, quicker to assemble yet still offers great control and protection for moving cables.

Typical industries and applications
- Automotive
- Office solutions and technology
- Automation
- Electrical equipment
- Machine building etc.

UL94-V2 classification

More information ▶ www.igus.co.uk/E1

Order example | Order key and colour examples | Examples based on series E1.17

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:
e-chain® (1.0m) Please indicate number of segments
Order text: 5 x E1.17.044.028.0

Order index for colour options

- Black Standard 1.0
- Orange Special colour 2
- Silver-grey Special colour 31
- Yellow Special colour 4
- White Special colour 1
- Light grey Special colour 14
- Grey-white Special colour 15

Black e-chains® available from stock.
Above special colours upon request.

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Technical data

- e-chain® material - permitted temperature °C, igumid NB
  Application dependant, upon request
- Flammability class, igumid NB VDE 0304 IIC UL94-V2

Order key

E1.17.044.028.0

Order index in a strip - openable along the outer radius

More information ▶ www.igus.co.uk/E1
**E1 | Series ES1.10 | Product range**

*e-chain® in a strip, smallest size*

---

**Installation dimensions**

<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length</th>
<th>Links/segment</th>
<th>Segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES1.10.013</td>
<td>200</td>
<td>10</td>
<td>5 (1,000 mm)</td>
</tr>
</tbody>
</table>

**Part No.**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Available bend radii</th>
<th>Weight [kg/Segment]</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>17</td>
<td>018</td>
<td></td>
<td>≈ 0.0164</td>
</tr>
</tbody>
</table>

The ES1.10 is an improved version of the E1.10 and supersedes it as of now. With the same dimensions but with installation and handling advantages.

Complete Part No. with required radius (R). Example: E1.10.013.018.

---

**Mounting brackets for the series E1.10.013**


---

**E1 | Series E1.17 | Product range**

*e-chain® in a strip, small size*

---

**Installation dimensions**

<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length</th>
<th>Links/segment</th>
<th>Segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.17.021</td>
<td>255</td>
<td>10</td>
<td>4 (1,020 mm)</td>
</tr>
</tbody>
</table>

---

**Part No.**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Available bend radii</th>
<th>Weight [kg/Segment]</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>26</td>
<td>028</td>
<td></td>
<td>≈ 0.0478</td>
</tr>
<tr>
<td>31</td>
<td>36</td>
<td>028</td>
<td></td>
<td>≈ 0.0580</td>
</tr>
<tr>
<td>44</td>
<td>49</td>
<td>028</td>
<td></td>
<td>≈ 0.0696</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: E1.17.021.028.

---

**Mounting brackets for the series E1.17.021**


---

More information ➤ www.igus.co.uk/ES1.10 ➤ www.igus.co.uk/E1.17
E1 | Series E1.18 | Product range
e-chain® in a strip, small size

**e-chain® | Series E1.18 | Openable along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/Segment]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.18.015,R,0</td>
<td>15</td>
<td>20</td>
<td>028</td>
<td>≈ 0.0169</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: E1.18.028.0

**Installation dimensions**

<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length [mm]</th>
<th>Links/segment</th>
<th>Segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.18.015</td>
<td>101</td>
<td>4</td>
<td>10 (1,010 mm)</td>
</tr>
</tbody>
</table>

The required clearance height:

\[ H_F = H + 40 \text{mm} \]

More radii available upon request, please consult igus®.

---

E1 | Series E1.20 | Product range
e-chain® in a strip, lids open alternate sides

**e-chain® | Series E1.20 | Openable along the outer radius | Lids open alternate sides**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/Segment]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.20.015,R,0</td>
<td>15</td>
<td>22</td>
<td>028</td>
<td>≈ 0.0443</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: E1.17.021.028.0

**Installation dimensions**

<table>
<thead>
<tr>
<th>Series</th>
<th>Segment length [mm]</th>
<th>Links/segment</th>
<th>Segments/m</th>
</tr>
</thead>
<tbody>
<tr>
<td>E1.20.015</td>
<td>250</td>
<td>10</td>
<td>4 (1,000 mm)</td>
</tr>
</tbody>
</table>

The required clearance height:

\[ H_F = H + 40 \text{mm} \]

More radii available upon request, please consult igus®.
Guide cable bundles quickly and easily

Advantages of the snapchain series:
- If a small amount of filling is required
- If a cost-effective e-chain® is required
- If easy installation is required
- If a simple solution is required
- For low duty cycles
- Various fastening options

When to use another e-chain® series:
- For higher fill weights
  - easy chain®, page 198
  - zipper, page 226
- When easy filling with connectorised cables is required
  - easy chain®, page 198
**snapchain**

**Introduction**

*Save time:* fit cable assemblies quickly in bundles

*Flexible:* adjust and change at any time

*Opening principle:* TE26 version can be opened along the outer radius and TZ26 can be opened along the inner radius

*Cost-effective:* good alternative to complex hinged cable trays

*Simple:* well-suited to short lengths, ideally 5 - 10 links

*Flexible:* can be bent in 1 or 2 directions (RBR)

Guide cable bundles quickly and easily - snapchain

igus® snapchain cost-effective e-chains® for simple filling. snapchains are easy to assemble and cost-effective. If a simple solution for low duty cycles is required.

**Typical industries and applications**

● Switch cabinet construction
● Electrical equipment
● Computer cabinets
● Office furniture
● Cables are moved infrequently

**Technical data**

<table>
<thead>
<tr>
<th>e-chain® material</th>
<th>permitted temperature °C, igumid NB</th>
<th>-40°C / +80°C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability class</td>
<td>igumid NB</td>
<td>VDE 0304 IIC UL94-V2</td>
</tr>
</tbody>
</table>

**Order example**

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:

e-chain® (1.0m) Please indicate e-chain® length or number of links

Order text:

1 m TE26.120.100.0

**Order key and colour examples**

Order key for colour options

Black | Standard | Orange | Special colour |
--- | --- | --- | --- |
0 | .0 | .2 |

Silver-grey | Special colour |
--- | --- |
.31 |

White | Special colour |
--- | --- |
.1 |

Light grey | Special colour |
--- | --- |
.14 |

Grey-white | Special colour |
--- | --- |
.1S |

Black e-chains® available from stock. Above special colours upon request.

**Order example based on series TE26**

Order key and colour examples

TE26.120.100.0

Order index for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:

TE62.120.100.0

Order text:

1 m TE26.120.100.0

**Examples based on series TE26**

Series | Loop length | Pitch | Bend radius | Page
--- | --- | --- | --- | ---
TE14.50 | 50 | 30.5 | 028 - 125 | 186
TE26.120 | 120 | 56 | 063 - 200 | 187
TZ14.50 | 50 | 30.5 | 028 - 125 | 186
TZ26.120 | 120 | 56 | 063 - 200 | 187
snapchain | Series TE14-TZ14 | Product range
Guide cable bundles quickly and easily, small size

Version TE | Series TE14 | Loops open along the outer radius
Version TZ | Series TZ14 | Loops open along the inner radius

Part No. | Part No. | R | Available bend radii | Weight
| --- | --- | --- | --- | ---
Version TE | Version TZ | [mm] | [kg/m] | ≈ 0.15
TE14.50,R.0 | TZ14.50,R.0 | 028 | 038 | 048 | 075 | 100 | 125 | |

*Also available as RBR (Reverse Bend Radius) Part No. TE14.50,Radius/Radius
Complete Part No. with required radius (R), Example: TE14.50,100,0

Installation dimensions

Loop length [mm] 50
Pitch [mm/Link] 30.5
Links/m corresponds to [mm] 1,006.5

e-chain® length $L_e - \frac{1}{2} R + K$

Cable package max.: 18mm

Part No. | Part No. | R | Available bend radii | Weight
| --- | --- | --- | --- | ---
Version TE | Version TZ | [mm] | [kg/m] | ≈ 0.43
TE26.120,R.0 | TZ26.120,R.0 | 063 | 075 | 100 | 125 | 150 | 200 | |

*Also available as RBR (Reverse Bend Radius) Part No. TE26.120,Radius/Radius
Complete Part No. with required radius (R), Example: TE26.120,100,0

Installation dimensions

Loop length [mm] 120
Pitch [mm/Link] 56
Links/m corresponds to [mm] 1,008

e-chain® length $L_e - \frac{1}{2} R + K$

Cable package max.: 47mm

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/snapchain
office e-chain®

Energy supply for offices and furniture

Advantages of the office e-chain® series:
- Aesthetic design
- Closed outer contours (half-tube)
- Easy to fill, even when installed
- Cable-friendly due to smooth interior
- UL94-V2 certified e-chain®
- Mounting brackets can be either screwed or bonded thanks to the large flat surface on the bottom

When to use another e-chain® series:
- When an unsupported application is required
  ► easychain®, page 198
- Where small semi-static applications are required
  ► E1, page 174
- When a multi-axis solution is desired
  ► OCR office e-chain®
  ► www.igus.co.uk/OCR
office e-chain® | Introduction | Advantages

Energy supply for offices and furniture - office e-chain®

Cables fitted quickly, e-chain® attached quickly, attractive design, nice and tidy. This e-chain® was designed and developed especially for the furniture industry.

- Aesthetic design
- Closed outer contours (half-tube)
- Mounting brackets easy to clip on
- Easy to fill, even when installed with “easy” design
- Cable-friendly due to smooth interior
- UL94-V2 certified
- Mounting brackets can be either screwed or bonded thanks to the large flat surface on the bottom

Typical industries and applications
- Electrically adjustable furniture
- Miscellaneous applications without highly dynamic movements

Colours:
- Different colours available upon request

Flammability class:
- UL94-V2

Abrasion-optimised:
- Cable-friendly due to smooth interior

Protected:
- Closed on the outside for cable protection and concealment

Mounting brackets:
- The e-chain® is easily clipped on

Stylishly simple:
- Designed and developed especially for the furniture industry

Save time:
- Simply press cables in, with “easy” design

Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.

New: OCR office e-chain® - tidy loose cables quickly and easily

- Movable in all axes, round and square versions
- Simply press in or pull out cables with “easy” design
- Mounting brackets with magnets for easy attachment in seconds
- Flexible fitting

Upon request, more information
► www.igus.co.uk/OCR

office e-chain® | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (hi) [mm]</th>
<th>Inner width (Bi) [mm]</th>
<th>Outer width (Ba) [mm]</th>
<th>Outer height (ha) [mm]</th>
<th>Bend radius (R) [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF14</td>
<td>21</td>
<td>38</td>
<td>46.6</td>
<td>25</td>
<td>028</td>
<td>194</td>
</tr>
</tbody>
</table>

More information ► www.igus.co.uk/officechain

www.igus.co.uk/officechain
**office e-chain®** | **Selection table** | **Technical data** | **Order key**

## Technical data

- **e-chain® material** - permitted temperature °C, igumid NB: -40°C / +80°C
- **Mounting bracket material** - permitted temperature °C, igumid G: -40°C / +120°C
- **Flammability class, igumid NB**
- **Flammability class, igumid G**

VDE 0304 IIC UL94-HB
VDE 0304 IIC UL94-V2

*R_L = unsupported with straight upper run, R_B = unsupported with permitted sag*

## Order example | Order key and colour options

### Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:

**e-chain® (1.0m)**

Please indicate e-chain® length or number of links: 1.0m or 33 links

**Order key:**

1 m ZF14.038.028.0

### Order key

**Split crossbar along the outer radius**

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>.0</td>
<td>Orange</td>
<td>.2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>.31</td>
<td>Yellow</td>
<td>.4</td>
</tr>
<tr>
<td>White</td>
<td>.1</td>
<td>Light grey</td>
<td>.14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>.13</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock.
Above special colours upon request.

---

**office e-chain®** | **Application example**

Insert cables quickly and easily with the office e-chain®, the energy supply for offices and furniture.
**Version ZF14 | "easy" design, split crossbar along the inner radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>( B_i )</th>
<th>( B_a )</th>
<th>( R )</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF14.038.R.0</td>
<td>38</td>
<td>46.6</td>
<td>028</td>
<td>0.297</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (\( R \)). Example: ZF14.038.028.0

**Installation dimensions**

- Inner height \( B_a \) \([\text{mm}]\): 21
- Pitch \([\text{mm/link}]\): 30.5
- Links/m: 33
- Corresponds to \([\text{mm}]\): 1,065.5
- \( e \)-chain\(^\circ\) length \( L_{e} = \frac{1}{2} R + K \)

**Moving end**
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>33</td>
</tr>
</tbody>
</table>

**Fixed end**
<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>33</td>
</tr>
</tbody>
</table>

\( R = 028 \)

\( H = 86 \)

\( D = 116.5 \)

\( K = 211 \)

The required clearance height: \( H_f = H + 10 \text{mm} \) (with 0.2kg/m fill weight)

**Mounting brackets, polymer one-piece**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width index</th>
<th>Part No. full set</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZF114.038.12</td>
<td>038</td>
<td>ZF114.038.12</td>
</tr>
<tr>
<td>51.6</td>
<td>50</td>
<td></td>
</tr>
</tbody>
</table>

Suitable mounting bracket for moving and fixed ends

Mounting brackets for easy fitting to furniture. Can be easily detached and re-attached.
Quick and easy filling
All-rounders - small, medium - e-chains® and e-tubes
e-tubes - protection against dirt and swarf
Universal modular kit, e-chains® and e-tubes for any application
Cleanroom, extremely low noise e-chains® and e-tubes
Hygienic design e-chain® with FDA compliance
Easy to fill and cost-effective

Advantages of the easy chain® series:
- Easy filling without opening and closing the lids
- If quiet running is required
- If a light and cost-effective e-chain® is required
- For high accelerations

When to use another e-chain® series:
- For applications with large unsupported lengths
  - E2/000, page 360
- When secure closing of the crossbars is required
  - E2/000, page 360
- When openable crossbars are not necessary
  - E2 micro, page 260
- Version Z is not suitable for gliding applications
  - zipper, page 226
**Easy to fill and cost-effective - easy chain®**

Cost-effective, easy to fill e-chains® are available in two versions. In the "E" version the cable is simply installed from the outside, and in the "Z" version from the inside. The primary reason to choose easy chains® is to save time when fitting cables. The material, igumid NB, presents more application opportunities due to its flexibility, UL94-V2 classification and excellent cleanroom qualities. The one-piece design keeps the easy chain® very cost-effective.

Typical industries and applications
- Cleanroom applications
- Electronics machines
- Office furniture
- Packaging machines
- General machinery, etc.

IPA Qualification Certificate - Report IG 0308-295: ISO Class 2, according to DIN EN ISO 14644-1 for easy chain® series E14.3.038 at v = 1.0m/s

- Electrically conductive ESD e-chains® upon request
- With easy chain® rotary and torsional motions are possible
- 42 DE4 - value determined at the igus® test lab, v = 1.0m/s unsupported, series E06.10.038.0

UL94-V2 classification

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Discover the advantages ➤ www.igus.co.uk/best/easychain
### Technical data

| Speed gliding / acceleration gliding | ≤ 3 [m/s] / ≤ 10 [m/s²] |
| Speed FL<sub>g</sub> / acceleration FL<sub>a</sub> | ≤ 20 [m/s] / ≤ 200 [m/s²] |
| Speed FL<sub>b</sub> / acceleration FL<sub>a</sub> | ≤ 3 [m/s] / ≤ 6 [m/s²] |

- e-chain<sup>®</sup> material - permitted temperature °C, igumid NB
  - -40°C / +80°C

- Mounting bracket* material - permitted temperature °C, igumid G
  - -40°C / +120°C

- Flammability class, igumid NB
  - VDE 0304 IIC UL94-HB

- Flammability class, igumid G
  - VDE 0304 IIC UL94-V2

<table>
<thead>
<tr>
<th>Installation types, maximum travels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
</tr>
<tr>
<td>E03</td>
</tr>
<tr>
<td>E04</td>
</tr>
<tr>
<td>E04/0Z045</td>
</tr>
<tr>
<td>E06/0Z06</td>
</tr>
<tr>
<td>E065/0Z065</td>
</tr>
<tr>
<td>E08/0Z08</td>
</tr>
<tr>
<td>E14/0Z14</td>
</tr>
<tr>
<td>E200/0Z200</td>
</tr>
<tr>
<td>E16/0Z16</td>
</tr>
<tr>
<td>E26/0Z26</td>
</tr>
<tr>
<td>E300/0Z300</td>
</tr>
</tbody>
</table>

* FL<sub>G</sub> = unsupported with straight upper run; FL<sub>G</sub> = unsupported with permitted sag. Available in igumid NB. Delivery time: upon request.

### Options with order keys

#### Options with order keys based on series E200

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No. Standard</td>
<td>Part No. NC-Version</td>
<td>Part No. RBR</td>
<td>Part No. igumid ESD</td>
</tr>
<tr>
<td>E200.05.R.0</td>
<td>E200.05.R.0.NC</td>
<td>E200.05.R1.R2.0</td>
<td>E200.05.R.0.ESD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ready to ship* in 24 - 48 hrs.</th>
<th>Delivery time* 2-5 business days</th>
<th>Delivery time* several series from stock</th>
<th>Delivery time* 10 business days</th>
</tr>
</thead>
<tbody>
<tr>
<td>E200.05.R.0</td>
<td>E200.05.R.0.NC</td>
<td>E200.05.R1.R2.0</td>
<td>E200.05.R.0.ESD</td>
</tr>
</tbody>
</table>

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

### Order example

**Order example for complete e-chain<sup>®</sup> (1.0m), colour black, with mounting brackets and interior separation:**

e-chain<sup>®</sup> (1.0m)

- Please indicate e-chain<sup>®</sup> length or number of links: 1.0m or 22 links
- E200.05.100.0

+ Mounting brackets

- 1 set (with tiewrap plates)
- E2050.34PZB

**Order text:**

- 1 m E200.05.100.0 + 2050.34PZB

**Order example for colour options**

<table>
<thead>
<tr>
<th>Colour index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard</td>
<td>.0</td>
</tr>
<tr>
<td>Orange</td>
<td>Special colour</td>
<td>.0</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour</td>
<td>.31</td>
</tr>
<tr>
<td>Yellow</td>
<td>Special colour</td>
<td>.1</td>
</tr>
<tr>
<td>White</td>
<td>Special colour</td>
<td>.1</td>
</tr>
<tr>
<td>Light grey</td>
<td>Special colour</td>
<td>.1S</td>
</tr>
</tbody>
</table>

Black e-chains<sup>®</sup> available from stock. Above special colours upon request.

---

**More information**

- www.igus.co.uk/easychain

3D CAD, configurators, service life calculation and more - www.igus.co.uk/easychain
easy chain® | Series E03 | Product range
Smallest applications, simply press cables in

Version E | Series E03 | "easy" design, split crossbar along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E03.05.R.01</td>
<td>5</td>
<td>8.7</td>
<td>[010</td>
<td>012</td>
</tr>
<tr>
<td>E03.07.R.01</td>
<td>7</td>
<td>10.7</td>
<td>[010</td>
<td>012</td>
</tr>
<tr>
<td>E03.10.R.01</td>
<td>10</td>
<td>13.7</td>
<td>[010</td>
<td>012</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap, Gap = 1mm / 2) Crossbars do not overlap, Gap = 2mm

Complete Part No. with required radius (R), Example: E03.05.028.0

Installation dimensions

![Diagram of installation dimensions]

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch [mm/link]</td>
<td>10</td>
</tr>
<tr>
<td>Links/m</td>
<td>100</td>
</tr>
<tr>
<td>corresponds to [mm]</td>
<td>1,000</td>
</tr>
<tr>
<td>e-chain® length</td>
<td>$L_e = \frac{H}{2} + K$</td>
</tr>
</tbody>
</table>

The required clearance height: $H_F = H + 10\text{mm}$ (with 0.1kg/m fill weight)

**More information** [www.igus.co.uk/E03](http://www.igus.co.uk/E03)

---

**Easy chain® | Series E03 | Accessories**

**Mounting brackets, polymer one-piece | Pivoting**

**Fixed end**

Fixed end 03 ... 2Z

**Moving end**

Moving end 03 ... 1Z

**Order example**

Part No. 03.05.12Z

A.2 to indicate option with brackets pre-fitted

Full set Series

---

**Material mounting bracket - igumid G, temperature: -40°C up to +120°C, VDE 0304 IIC UL94-HB**

---

**Possible orientations for assembled mounting brackets.** To receive brackets pre-fitted please add index .A2 or .A4.

---

**Adapter plate for rapid installation**

for all sizes, Part No. 03.10.0F

The adapter has scored lines so that it can be adapted to the respective e-chain® width. The adapter plate is not always necessary when attaching the mounting brackets as they can also be screwed on without the adapter plate.

---

**Optional adapter plate**

---

**More information** [www.igus.co.uk/easychain](http://www.igus.co.uk/easychain)

---

<table>
<thead>
<tr>
<th>Version E</th>
<th>Part No.</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>03.05.12Z</td>
<td>= 0.03</td>
</tr>
<tr>
<td>07.</td>
<td>03.07.12Z</td>
<td>= 0.04</td>
</tr>
<tr>
<td>10.</td>
<td>03.10.12Z</td>
<td>= 0.05</td>
</tr>
</tbody>
</table>

---

**More information** [www.igus.co.uk/E03](http://www.igus.co.uk/E03)

---

**3D CAD, configurators, service life calculation and more** [www.igus.co.uk/easychain](http://www.igus.co.uk/easychain)
**easy chain® | Series E04 | Product range**

Low weight, simply press cables in

**Version E | Series E04 | "easy" design, split crossbar along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Version E</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>kg/m</td>
</tr>
<tr>
<td>E04.07.R0.0</td>
<td>7</td>
<td>13</td>
<td>015</td>
<td>018</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap. Gap = 2.5mm Special solution with opening gap 0.9mm: Part No. E04.07.015.B.B

Ba: pin dimension approx. 0.1 - 0.3mm wider.

Complete Part No. with required radius (R). Example: E04.07.028.0

**Installation dimensions**

- Inner height [mm]: 7
- Pitch [mm/link]: 16.7
- Links/m: 60
- Corresponds to [mm]: 1,002
- ø-chain® length: \(L_x\times R + K\)

**Part No.**

- 015
- 018
- 028
- 038
- 048

**H**

- 40
- 46
- 66
- 86
- 106

**D**

- 45
- 48
- 58
- 68
- 78

**K**

- 85
- 90
- 125
- 155
- 185

The required clearance height: \(H_F = H + 10\text{mm}\) (with 0.1kg/m fill weight)

**easy chain® | Series E04 | Accessories**

Mounting brackets, polymer one-piece | Pivoting

**Part No. full set**

- Part No. full set with tie wrap plates: 040.07.12PZ
- Part No. full set without tie wrap plates: 040.07.12

**A**

- Number of teeth

**Width index**

- 040.07.12PZ

**Part No.**

- 040.07.12PZ

**Order example**

- To indicate option with brackets pre-fitted
- With integrated strain relief tie wrap plates
- Full set

**Series**

- E04

More information ➤ www.igus.co.uk/E04

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/easychain
easy chain® | Series E045-Z045 | Product range
Small pitch, smooth running, simply press cables in

Version E | Series E045 | "easy" design, split crossbar along the outer radius
Version Z | Series Z045 | "easy" design, split crossbar along the inner radius

<table>
<thead>
<tr>
<th>Chamber design</th>
<th>Part No. E045</th>
<th>Part No. Z045</th>
<th>Bi</th>
<th>Sa</th>
<th>R</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E045.10,R.0</td>
<td>Z045.10,R.0</td>
<td>10</td>
<td>16</td>
<td></td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td></td>
<td>E045.16,R.0</td>
<td>Z045.16,R.0</td>
<td>16</td>
<td>23</td>
<td></td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>2-chamber</td>
<td>E045.27,R.0</td>
<td>Z045.27,R.0</td>
<td>77</td>
<td>23</td>
<td></td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td></td>
<td>E045.29,R.0</td>
<td>Z045.29,R.0</td>
<td>99</td>
<td>27</td>
<td></td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>3-chamber</td>
<td>E045.39,R.0</td>
<td>Z045.39,R.0</td>
<td>99</td>
<td>37</td>
<td></td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap. Gap = 2mm

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Mounting bracket without strain relief tiewrap plate only has holes of ø 3mm

Complete Part No. with required radius [R]. Example: E045.16,038,0

Installation dimensions

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>Pitch [mm/fm]</th>
<th>Links/m</th>
<th>Corresponds to</th>
<th>L = \frac{a}{2} + K</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.4</td>
<td>13</td>
<td>77</td>
<td>1,001</td>
<td>e-chain® length</td>
</tr>
</tbody>
</table>

FL ≤ \frac{a}{2} + K

Unassumed length FL, Total L [m]

R = [018, 028, 038]

H = 48.5, 68.5, 88.5

D = 44, 54, 64

K = 85, 115, 190

The required clearance height: H = H + 10mm (with 0.1kg/m fill weight)

Moving end 0450 ... 1(PZ)
Fixed end 0450 ... 2(PZ)


More information on www.igus.co.uk/E045 | www.igus.co.uk/Z045
**easy chain® | Series E06-Z06 | Product range**

Low weight, simply press cables in

---

**Version E | Series E06 | "easy" design, split crossbar along the outer radius**

**Version Z | Series Z06 | "easy" design, split crossbar along the inner radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>E06.10.R0</td>
<td>Z06.10.R0</td>
<td>10</td>
<td>16.5</td>
<td>[018</td>
<td>028</td>
</tr>
<tr>
<td>E06.16.R0</td>
<td>Z06.16.R0</td>
<td>16</td>
<td>22.5</td>
<td>[018</td>
<td>028</td>
</tr>
<tr>
<td>E06.20.R0</td>
<td>Z06.20.R0</td>
<td>20</td>
<td>26.5</td>
<td>[018</td>
<td>028</td>
</tr>
</tbody>
</table>

1) Crossbars do not overlap. Gap = 5.5mm Special solution with opening gap 3.5mm: Part No. E06.10.018.083

Ba: pin dimension approx. 1.5 - 2.0mm wider.

Complete Part No. with required radius (R). Example: E06.10.028.0

---

**Installation dimensions**

- **FL**
- **Bi**
- **Ba**

E06 Inner height [mm]: 10.7
Z06 Inner height [mm]: 10.5
Pitch [mm/link]: 20
Links/m: 50

The required clearance height: H = H + 10mm (with 0.2kg/m fill weight)

---

**easy chain® | Series E06-Z06 | Accessories**

Mounting brackets, polymer one-piece | Locking

---

**Moving end**
060 ... 1P(Z)

**Fixed end**
060 ... 2P(Z)

---

**Width**

<table>
<thead>
<tr>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>060.10.12PZ</td>
<td>060.10.12P</td>
<td>16.5</td>
</tr>
<tr>
<td>16.</td>
<td>060.16.12PZ</td>
<td>060.16.12P</td>
<td>22.5</td>
</tr>
<tr>
<td>20.</td>
<td>060.20.12PZ</td>
<td>060.20.12P</td>
<td>27.0</td>
</tr>
</tbody>
</table>

---

**Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB**

---

**Order example**

060.10.12PZ A1

To indicate option with brackets pre-fitted
With integrated strain relief tiewrap plates
Full set

---

More information ➤ www.igus.co.uk/E06 ➤ www.igus.co.uk/Z06

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/easychain
easy chain® | Series E065-Z065 | Product range

Small pitch, smooth running, simply press cables in

Installation dimensions

<table>
<thead>
<tr>
<th>Chamber design</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi</th>
<th>Ga</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E065.16,R,0</td>
<td>Z065.16,R,0</td>
<td>16</td>
<td>24.8</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>2-chamber</td>
<td>E065.2/9,R,0</td>
<td>Z065.2/9,R,0</td>
<td>9/9</td>
<td>29.3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>3-chamber</td>
<td>E065.3/9,R,0</td>
<td>Z065.3/9,R,0</td>
<td>9/9/9</td>
<td>39.3</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>4-chamber</td>
<td>E065.4/9,R,0</td>
<td>Z065.4/9,R,0</td>
<td>9/9/9/9</td>
<td>49.3</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

Bi: pin dimension approx. 1.0 - 1.6mm wider. *Width available upon request. Please consult igus for delivery time.

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Moving end

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set with tiwrewrap plates</th>
<th>Part No. full set without tiwrewrap plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>16.</td>
<td>0650.16.12PZ 0650.16.12</td>
<td>22.5 2</td>
</tr>
</tbody>
</table>

Hole pattern for part numbers
0650.9/2. = drawing above left
Hole pattern for part numbers
0650.4/9. = drawing below left

Easy chain® | Series E065-Z065 | Accessories

Mounting brackets, polymer one-piece | Locking

**easy chain® **| Series E08-Z08 | **Product range**

Small pitch, simply press cables in

---

**easy chain® **| Series E08-Z08 | **Accessories**

Mounting brackets, polymer one-piece | Locking

---

**Version E **| Series E08 | "easy" design, split crossbar along the outer radius

**Version Z **| Series Z08 | "easy" design, split crossbar along the inner radius

---

**Part No.** | **Bi** | **Ba** | **R** | **Available bend radii** | **Weight** | **[kg/m]**
---|---|---|---|---|---|---
**Version E** | **Version Z** | [mm] | [mm] | [mm] | | 
E08.10,R,0 | Z08.10,R,0 | 10 | 18.2 | 025 | 028 | 038 | 048 | ≈ 0.21
E08.16,R,0 | Z08.16,R,0 | 16 | 24.2 | 025 | 028 | 038 | 048 | ≈ 0.24
E08.20,R,0 | Z08.20,R,0 | 20 | 28.2 | 025 | 028 | 038 | 048 | ≈ 0.25
E08.30,R,0 | Z08.30,R,0 | 30 | 38.2 | 025 | 028 | 038 | 048 | ≈ 0.28
E08.40,R,0 | Z08.40,R,0 | 40 | 48.2 | 025 | 028 | 038 | 048 | ≈ 0.31
E08.50,R,0 | Z08.50,R,0 | 50 | 58.2 | 025 | 028 | 038 | 048 | ≈ 0.37

1) Crossbars do not overlap. Gap = 5.5mm / 2) Crossbars do not overlap. Gap = 4.0mm

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: **E08.10,028,0**

---

**Installation dimensions**

---

**Material mounting bracket - igumid®; temperature: -40° up to +120°C; VDE 0304 IEC UL94-HB**

---

**Width index** | **Part No. full set with tiewrap plates** | **Part No. full set without tiewrap plates** | **A** | **B** | Number of teeth
---|---|---|---|---|---
10. | 080.10.12P | 080.10.12P | – | 18.2 | 1
16. | 080.16.12P | 080.16.12P | – | 24.2 | 2
20. | 080.20.12P | 080.20.12P | – | 28.2 | 2
30. | 080.30.12P | 080.30.12P | 22 | 38.2 | 3
40. | 080.40.12P | 080.40.12P | 32 | 48.2 | 4
50. | 080.50.12P | 080.50.12P | 42 | 58.2 | 5

---


---

**More information** | www.igus.co.uk/E08  | www.igus.co.uk/Z08

---

214  215
**Economical size, simply press cables in**

### Installation dimensions

<table>
<thead>
<tr>
<th>Date</th>
<th>Version</th>
<th>Pitch [mm/link]</th>
<th>Links/m</th>
<th>Corresponds to [mm]</th>
<th>e-chain® length</th>
<th>Inner height [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997</td>
<td>E14 .R.0</td>
<td>30.5</td>
<td>33</td>
<td>1,006.5</td>
<td>$L_e \times \frac{1}{2} + K$</td>
<td>19</td>
</tr>
</tbody>
</table>

The required clearance height: $H_F = H + 10\text{mm}$ (with 0.2kg/m fill weight)

### Accessories

**Mounting brackets, polymer one-piece | Locking**

**Width index**

<table>
<thead>
<tr>
<th>Part No. full set with tie-wrap plates</th>
<th>Part No. full set without tie-wrap plates</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ➤</td>
<td>114.1.12PZ</td>
<td>114.1.12P</td>
<td>–</td>
<td>26.3</td>
</tr>
<tr>
<td>2. ➤</td>
<td>114.2.12PZ</td>
<td>114.2.12P</td>
<td>10</td>
<td>36.3</td>
</tr>
<tr>
<td>3. ➤</td>
<td>114.3.12PZ</td>
<td>114.3.12P</td>
<td>23</td>
<td>49.3</td>
</tr>
<tr>
<td>4. ➤</td>
<td>114.4.12PZ</td>
<td>114.4.12P</td>
<td>35</td>
<td>61.3</td>
</tr>
</tbody>
</table>

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

**Order example**

To indicate option with brackets pre-fitted
With integrated strain relief tie-wrap plates
Full set Series

114.2.12PZ.A1
**easy chain® | Series E200-Z200 | Product range**

Medium size, simply press cables in... 

**easy chain® | Series E200-Z200 | Accessories**

Mounting brackets, polymer | Pivoting | Locking

### Installation dimensions

<table>
<thead>
<tr>
<th>Design</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E200.05.R,0</td>
<td>Z200.05.R,0</td>
<td>57</td>
<td>74.4</td>
<td>055, 075, 100, 150, 200</td>
</tr>
<tr>
<td>2-chamber</td>
<td>E200.35.R,0, Z200.35.R,0</td>
<td>E200.50.R,0, Z200.50.R,0</td>
<td>37/37</td>
<td>94.4</td>
<td>055, 075, 100, 150, 200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50/50</td>
<td>120.4</td>
<td>055, 075, 100, 150, 200</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R), Example: E200.05.150.0

### Moving end

- 2 ... 3PZ(B) / 2 ... 1PZ(B)

### Fixed end

- 2 ... 4PZ(B) / 2 ... 2PZ(B)

### Width

<table>
<thead>
<tr>
<th>Index</th>
<th>Part No. full set pivoting with tiewrap plates</th>
<th>Part No. full set locking without tiewrap plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>2050.34PZB</td>
<td>2050.12PZB</td>
</tr>
<tr>
<td>2/35.</td>
<td>2070.34PZB</td>
<td>2070.12PZB</td>
</tr>
<tr>
<td>2/50.</td>
<td>2100.34PZB</td>
<td>2100.12PZB</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>44.6</td>
</tr>
<tr>
<td>64.8</td>
</tr>
<tr>
<td>90.10</td>
</tr>
</tbody>
</table>

### Material mounting bracket - igumid®: temperature: -40°C up to +120°C, VDE 0341 IC UL94 HB

*Full set with tiewrap plate = 10 cable tiewraps, please add index R. Example: 2050.34PZB1*


### Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

More information ➤ www.igus.co.uk/E200 ➤ www.igus.co.uk/Z200

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/easychain
**easy chain® | Series E16-Z16 | Product range**

Large inner height, simply press cables in

**Version E | Series E16 | "easy" design, split crossbar along the outer radius**

**Version Z | Series Z16 | "easy" design, split crossbar along the inner radius**

### Installation dimensions

**Part No.** | **Bi** | **Ba** | **R** | **Weight**
---|---|---|---|---
**E16. 2. R0** | Z16. 2. R0 | 23 | 37.5 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.51
**E16. 3. R0** | Z16. 3. R0 | 36 | 50.5 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.57
**E16. 4. R0** | Z16. 4. R0 | 48 | 62.5 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.62
**E16. 5. R0** | Z16. 5. R0 | 63 | 78.5 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.75
**E16. 6. R0** | Z16. 6. R0 | 80 | 95.5 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.83
**E16. 7. R0** | Z16. 7. R0 | 100 | 115.3 | 0.040 | 0.60 | 0.075 | 100 | 125° | 0.91

*Radius available upon request. Please consult igus® for delivery time. 1) Radius 040 only for these series available*

Complete Part No. with required radius (R). Example: E16.7.100.0

**Width**

**Part No. full set with tie-wrap plates** | **Part No. full set without tie-wrap plates**
---|---
**A** | **B** | **Number of teeth**
---|---|---
2. | 117.2.12PZ | 117.2.12P
3. | 117.3.12PZ | 117.3.12P
4. | 117.4.12PZ | 117.4.12P
5. | 117.5.12PZ | 117.5.12P
6. | 117.6.12PZ | 117.6.12P
7. | 117.7.12PZ | 117.7.12P

**Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB**

**Order example**

**.A1** | **.A2** | **.A3** | **.A4**
---|---|---|---
117.2.12PZA1 | 117.3.12PZA2 | 117.4.12PZA3 | 117.5.12PZA4

**easy chain® | Series E26-Z26 | Product range**

Large inner height, simply press cables in

---

**Version E** | Series E26 | “easy” design, split crossbar along the outer radius

**Version Z** | Series Z26 | “easy” design, split crossbar along the inner radius

---

### Installation dimensions

- **Inner height [mm]**
  - 1-chamber: 36.5
  - 2 & 3-chamber: 37.1

- **Pitch [mm/lin.]**: 56

- **Links/m** corresponds to [mm/lin.]: 1,008

- **e-chain® length** $L = \frac{H}{2} + K$

---

### Complete Part No. with required radius ($R$)

Example: **E26.07.150.0**

### Moving end

- 26 ... 3PZ(B) / 26 ... 1PZ(B)

### Fixed end

- 26 ... 4PZ(B) / 26 ... 2PZ(B)

---

### Material mounting bracket - igumid G, temperature: -40°C up to +120°C, VDE 0304 IC U94-HB

Full set with tie-wrap plate + 10 cable tie-wrap pairs, please add index K1. Example: **2607.34PZB11**

---

### 3D CAD, configurators, service life calculation and more

[www.igus.co.uk/easychain]
### easy chain® | E300-Z300 | Product range
Large inner height, simply press cables in

#### Version E | Series E300
"easy" design, split crossbar along the outer radius

#### Version Z | Series Z300
"easy" design, split crossbar along the inner radius

<table>
<thead>
<tr>
<th>Chamber design</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-chamber</td>
<td>E300.075,R.0</td>
<td>Z300.075,R.0</td>
<td>75</td>
<td>95</td>
<td></td>
<td>075</td>
<td>125</td>
</tr>
<tr>
<td>2-chamber</td>
<td>E300.2/45,R.0 / Z300.2/45,R.0</td>
<td>48/48</td>
<td>120</td>
<td></td>
<td></td>
<td>075</td>
<td>125</td>
</tr>
<tr>
<td>3-chamber</td>
<td>E300.3/45,R.0 / Z300.3/45,R.0</td>
<td>47/46/47</td>
<td>170</td>
<td></td>
<td></td>
<td>075</td>
<td>125</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: E300.075.150.0

#### Installation dimensions

**Inner height** [mm] 48.5
**Pitch** [mm/mm] 67
**Links/m** 15
**Corresponds to** [mm] 1,005
**e-chain² length** \( L = \frac{H}{2} + K \)

<table>
<thead>
<tr>
<th>R</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>H²</td>
<td>214</td>
<td>264</td>
<td>314</td>
<td>364</td>
<td>464</td>
<td>564</td>
<td>664</td>
</tr>
<tr>
<td>D</td>
<td>208</td>
<td>233</td>
<td>258</td>
<td>283</td>
<td>333</td>
<td>383</td>
<td>433</td>
</tr>
<tr>
<td>K</td>
<td>370</td>
<td>450</td>
<td>530</td>
<td>610</td>
<td>766</td>
<td>920</td>
<td>1,080</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_s = H + 40\)mm (with 2.5kg/m fill weight)

---

### easy chain® | Series E300-Z300 | Accessories
Mounting brackets, polymer | Pivoting | Locking

#### Moving end
E3 ... 3PZ(B) / E3 ... 1PZ(B)

#### Fixed end
3 ... 4PZ(B) / 3 ... 2PZ(B)

#### Width index

<table>
<thead>
<tr>
<th>Part No. full set pivoting with tiewrap plates</th>
<th>Without tiewrap plate</th>
<th>Part No. full set locking with tiewrap plates</th>
<th>Without tiewrap plate</th>
<th>A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3075.34PZB</td>
<td>E3075.34PZ</td>
<td>E3100.34PZB</td>
<td>E3100.12PZB</td>
<td>E3150.12PZB</td>
<td>E3150.12PZB</td>
</tr>
<tr>
<td>075.</td>
<td>128</td>
<td>125</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/45.</td>
<td>78</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/45.</td>
<td>75</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: E3075.34PZB-K1

#### Strain relief
E.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options from page 1300

#### Interior separation

**Modular shelf**
For additional horizontal subdivision of the inner space, shelves are available for e-chains® series E300.3/45 and Z300.3/45. They can be fitted at 7 different heights.

**3D CAD, configurators, service life calculation and more**

---

More information at www.igus.co.uk/E300, www.igus.co.uk/Z300

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225
zipper
Zip fastening e-chains® and e-tubes

Advantages of the zipper series:
- zipper-like design for quick opening and closing of lids
- zipper e-chains® can be lengthened and shortened at any point
- Small pitch for low noise, smooth running
- Interior separation possible

When to use another e-chain® series:
- When an easy filling without opening and closing of the chain is required
  - easy chain®, page 198
- When an easy-to-open and cost-effective e-chain® is required
  - E2.1 micro, page 320
- When openable crossbars are not necessary
  - E2 micro, page 260
Zip fastening e-chains® and e-tubes - zipper

Igus® "zipper" e-chains® and e-tubes deliver in terms of practicality and performance. The *zipper* function makes them a very useful product to reduce assembly time. The small pitch, the tough-elastic zipper-band, and the sturdy link work well in high acceleration applications. The "zipper" series is one of the most popular igus® e-chain® series for demanding applications.

- zipper-like design for quick opening and closing of lids
- zipper e-chains® can be lengthened and shortened at any point
- Small pitch for low noise, smooth running
- High accelerations: 100 m/s² and more

### Typical industries and applications
- Pick & place robots
- Semi-conductor machines
- Linear motors, actuators
- Measuring equipment
- Machine tools (zipper e-tube)
- General machinery, etc.

### Keep order:
- Interior separation possible (series 09, 15/R15, 17/R17)

### Dynamic:
- High accelerations are possible

### Strong:
- Double stop-dog for long unsupported travels (series 15/R15, 17/R17)

### Fast opening:
- Zip-open along the outer radius

### Smooth running:
- Small pitch for low noise, smooth running

### Flexible:
- Can be lengthened and shortened at any point

### Universal connection:
- Mounting bracket with integrated strain relief

---

**Zipper - e-chains®**

Crossbars on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height H</th>
<th>Inner width B1</th>
<th>Outer width B4</th>
<th>Outer height Ha</th>
<th>Bend radius R</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>047</td>
<td>9</td>
<td>10 - 16</td>
<td>16 - 22</td>
<td>12.5</td>
<td>018 - 038</td>
<td>0.40</td>
<td>232</td>
</tr>
<tr>
<td>07</td>
<td>10.3</td>
<td>06 - 64</td>
<td>12.5 - 71</td>
<td>15</td>
<td>018 - 048</td>
<td>0.55</td>
<td>234</td>
</tr>
<tr>
<td>09</td>
<td>15</td>
<td>10 - 64</td>
<td>18.2 - 72.2</td>
<td>19.3</td>
<td>028 - 048</td>
<td>1.00</td>
<td>238</td>
</tr>
<tr>
<td>15</td>
<td>17</td>
<td>15 - 100</td>
<td>26 - 113</td>
<td>24</td>
<td>038 - 180</td>
<td>1.20</td>
<td>244</td>
</tr>
<tr>
<td>17</td>
<td>32</td>
<td>15 - 100</td>
<td>25.5 - 113</td>
<td>39</td>
<td>063 - 125</td>
<td>1.00</td>
<td>252</td>
</tr>
</tbody>
</table>

**Zipper - e-tubes - protection against dirt and swarf**

Lids on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height H</th>
<th>Inner width B1</th>
<th>Outer width B4</th>
<th>Outer height Ha</th>
<th>Bend radius R</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R07</td>
<td>10.3</td>
<td>06 - 64</td>
<td>12.5 - 71</td>
<td>15</td>
<td>038 - 048</td>
<td>0.55</td>
<td>236</td>
</tr>
<tr>
<td>R09</td>
<td>15</td>
<td>10 - 50</td>
<td>18.2 - 58.2</td>
<td>19.3</td>
<td>048 - 100</td>
<td>1.00</td>
<td>242</td>
</tr>
<tr>
<td>R15</td>
<td>17</td>
<td>25 - 80</td>
<td>36 - 94</td>
<td>24</td>
<td>063 - 180</td>
<td>1.20</td>
<td>248</td>
</tr>
<tr>
<td>R17</td>
<td>32</td>
<td>15 - 63</td>
<td>26 - 74</td>
<td>39</td>
<td>063 - 125</td>
<td>1.20</td>
<td>256</td>
</tr>
</tbody>
</table>

---

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

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More information - www.igus.co.uk/zipper
zipper | Technical data | Overview

### Technical data

- **Speed gliding / acceleration gliding**: ≤ 10 [m/s] / ≤ 50 [m/s²]
- **Speed FLₐ / acceleration FLₐ**: ≤ 20 [m/s] / ≤ 200 [m/s²]
- **Speed FLₙ / acceleration FLₙ**: ≤ 3 [m/s] / ≤ 6 [m/s²]
- **Material lower part - permitted temperature °C**, igumid G: -40°C / +120°C
- **Material lid - permitted temperature °C**, igumid TE: -40°C / +70°C
- **Flammability class**, igumid G: VDE 0304 IIC UL94-HB

**Note**: FLₙ = unsupported with straight upper run, FLₐ = unsupported with permitted sag

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>047</td>
<td>≤ 0.80m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>07 / R07</td>
<td>≤ 1.10m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>09 / R09</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>15 / R15</td>
<td>≤ 2.40m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>17 / R17</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

### Options with order keys | Examples based on series 15

#### Options with order keys

- **Standard**: NC version - (No Camber) without pretension
- **ESD - electrically conductive material**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Order key example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>15.025.R.0</td>
</tr>
<tr>
<td>NC-Version</td>
<td>15.025.R.0.NC</td>
</tr>
<tr>
<td>igumid ESD</td>
<td>15.025.R.0.ESD</td>
</tr>
</tbody>
</table>

#### Installation types, maximum travels

- **Standard** (NC Version - (No Camber) without pretension)
- **ESD - electrically conductive material**

**Delivery time**: several series from stock

#### Order example | Order key and colour examples | Examples based on series 15

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation**:

- **e-chain® (1.0m)**: Please indicate e-chain® length or number of links: 1.0m or 33 links
- **1.0m**: 15.025.075.0
- **Mounting brackets**: 1 set (with tiewrap plates)
- **Interior separation**: with 2 separators assembled every 2nd link
- **Order text**: 1 m 15.025.075.0 + 1025.34PZ + 2 x 154

#### Order key

- **e-chain® zip-open along the outer radius**
- **e-tube zip-open along the outer radius**

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard .0</td>
<td>Orange</td>
<td>Special colour .2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour .31</td>
<td>Yellow</td>
<td>Special colour .4</td>
</tr>
<tr>
<td>White</td>
<td>Special colour .1</td>
<td>Light grey</td>
<td>Special colour .14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour .1S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock. Above special colours available upon request.

More information ➤ www.igus.co.uk/zipper

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/zipper
zipper | e-chains® | Series 047 | Product range
Fast opening, small pitch, smooth running

e-chains® | Series 047 | Crossbars on a strip - zip-open along the outer radius

Part No. | Bi | Ba | R Available bend radii | Weight
--- | --- | --- | --- | ---
e-chains® | [mm] | [mm] | [mm] | [kg/m]
047.10.R.0 | 10 | 16 | | 0.10
047.16.R.0 | 16 | 22 | | 0.11

Complete Part No. with required radius (R). Example: 047.10.038.0

Installation dimensions

<table>
<thead>
<tr>
<th>FLG</th>
<th>FLB</th>
<th>FLS</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤7.0 mm</td>
<td>Inner height [mm]</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Pitch [mm/link]</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>Links/m</td>
<td>77</td>
</tr>
<tr>
<td></td>
<td>corresponds to</td>
<td>1,001</td>
</tr>
</tbody>
</table>

- e-chain® length \( L = \frac{R}{2} + K \)
- Unsupported length \( FL \) in m
- Travel \( B \) in m

R | 018 | 028 | 038
--- | --- | --- | ---
H | 48.5 | 68.5 | 88.5
D | 44 | 54 | 64
K | 85 | 115 | 192

The required clearance height: \( H_F = H + 10 \text{mm} \) (with 0.2kg/m fill weight)

zipper | e-chains® | Series 047 | Accessories
Mounting brackets, polymer one-piece | Pivoting

Moving end
0450 ... 1(PZ)

Fixed end
0450 ... 2(PZ)

Width
Part No. full set with tie wrap plates
Part No. full set without tie wrap plates
A | B | Number of teeth
--- | --- | ---
10 | | 1
16 | | 2

Mounting bracket with strain tie wrap plate has reductions of \( ø 3 \text{mm} / ø 6 \text{mm} \) 90°.
Mounting bracket without strain tie wrap plate only has holes of \( ø 3 \text{mm} \)

Complete Part No. with required radius (R). Example: 047.10.038.0

0450.10.12PZ | Order example
0450.16.12PZ

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index .A2 or .A4.
Installation dimensions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>07.06.R0</td>
<td>06</td>
<td>12.5</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.10.R0(1)</td>
<td>10</td>
<td>16.5</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.16.R0(1)</td>
<td>16</td>
<td>22.5</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.20.R0(1)</td>
<td>20</td>
<td>27</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.30.R0(1)</td>
<td>30</td>
<td>37</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.40.R0(1)</td>
<td>40</td>
<td>47</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.50.R0(1)</td>
<td>50</td>
<td>57</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>07.64.R0(1)</td>
<td>64</td>
<td>71</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

*Radius 048 only for series 07.64 - for other widths radii available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: 07.40.038.0

Inner height [mm] 10.3
Pitch [mm/ln] 20
Links/m 50
1,000 e-chain® length \( L_x = \frac{R}{4} + K \)

Unsupported length \( F_{L_n} = F_{L_n} + (L_x \times 2) \) mm

\( F_{L_n} \) mm

Hole pattern for part numbers 060.06. - 060.20.
- drawing above left
Hole pattern for part numbers 060.30. - 060.64.
- drawing below left

ESD - many sizes from stock
- ESD material tested with over 10 million cycles for the toughest requirements
- Standardised product made from igumid ESD
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information ► www.igus.co.uk/zipper
### e-tube Series R07 | Lids on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>R07.06.R0</td>
<td>06</td>
<td>12.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.10.R0</td>
<td>10</td>
<td>16.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.16.R0</td>
<td>16</td>
<td>22.5</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.20.R0</td>
<td>20</td>
<td>27</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.30.R0</td>
<td>30</td>
<td>37</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.40.R0</td>
<td>40</td>
<td>47</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.50.R0</td>
<td>50</td>
<td>57</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>R07.64.R0</td>
<td>64</td>
<td>71</td>
<td>038</td>
<td>048</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: R07.40.038.R

### Installation dimensions

- **Inner height [mm]:** 10.3
- **Pitch [mm/ln]:** 20
- **Links/m:** 50
- **Corresponds to [mm]:** 1,000
- **e-chain® length:** \( L + 15.2 + K \)

### Hole pattern for part numbers

- **Moving end:** 060.06 .. 060.20
  - Drawing above left
- **Fixed end:** 060 .. 060.20
  - Drawing below left

### 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/zipper
e-chains® | Series 09 | Crossbars on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>09.10.R0</td>
<td>10</td>
<td>18.2</td>
<td>028 038 048</td>
<td>0.21</td>
</tr>
<tr>
<td>09.16.R0</td>
<td>16</td>
<td>24.2</td>
<td>028 038 048</td>
<td>0.24</td>
</tr>
<tr>
<td>09.20.R0</td>
<td>20</td>
<td>28.2</td>
<td>028 038 048</td>
<td>0.25</td>
</tr>
<tr>
<td>09.30.R0</td>
<td>30</td>
<td>38.2</td>
<td>028 038 048</td>
<td>0.28</td>
</tr>
<tr>
<td>09.40.R0</td>
<td>40</td>
<td>48.2</td>
<td>028 038 048</td>
<td>0.31</td>
</tr>
<tr>
<td>09.50.R0</td>
<td>50</td>
<td>58.2</td>
<td>028 038 048</td>
<td>0.34</td>
</tr>
<tr>
<td>09.64.R0</td>
<td>64</td>
<td>72.2</td>
<td>028 038 048</td>
<td>0.39</td>
</tr>
</tbody>
</table>

Available as ESD version from stock

Complete Part No. with required radius (R). Example: 09.40.038.0

Installation dimensions

- e-chains®
- Series 09
- Crossbars on a strip - zip-open along the outer radius

Available as ESD version from stock

More information

www.igus.co.uk/09
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

Slotted separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

<table>
<thead>
<tr>
<th>Full-width shelves Width X [mm]</th>
<th>X [mm] un assembled</th>
<th>assembled</th>
<th>X [mm] un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>016</td>
<td>110.16</td>
<td>111.16</td>
<td>030</td>
<td>110.30</td>
</tr>
<tr>
<td>020</td>
<td>110.20</td>
<td>111.20</td>
<td>040</td>
<td>110.40</td>
</tr>
<tr>
<td></td>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
<td></td>
</tr>
</tbody>
</table>
zipper | e-tubes | Series R09 | Product range
Fast opening, enclosed zipper-band

---

### e-tube | Series R09 | Lids on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R09.10.R.0</td>
<td>10</td>
<td>18.2</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>R09.16.R.0</td>
<td>16</td>
<td>24.2</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>R09.20.R.0</td>
<td>20</td>
<td>28.2</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>R09.30.R.0</td>
<td>30</td>
<td>38.2</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>R09.50.R.0</td>
<td>50</td>
<td>58.2</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: R09.40.048.0

### Installation dimensions

- Inner height [mm]: 15
- Pitch [mm/ln]: 20
- Links/m: 50
- Corresponds to [mm]: 1,000
- e-chain® length: L + 12.5

<table>
<thead>
<tr>
<th>Weight</th>
<th>Bi</th>
<th>Ba</th>
</tr>
</thead>
<tbody>
<tr>
<td>[kg/m]</td>
<td>[mm]</td>
<td>[mm]</td>
</tr>
<tr>
<td>0.23</td>
<td>10</td>
<td>18.2</td>
</tr>
<tr>
<td>0.26</td>
<td>16</td>
<td>24.2</td>
</tr>
<tr>
<td>0.27</td>
<td>20</td>
<td>28.2</td>
</tr>
<tr>
<td>0.30</td>
<td>30</td>
<td>38.2</td>
</tr>
<tr>
<td>0.36</td>
<td>50</td>
<td>58.2</td>
</tr>
</tbody>
</table>

---

### Accessories
Mounting brackets, polymer one-piece | Locking

- Moving end 080 ... 1P(Z)
- Fixed end 080 ... 2P(Z)

### Hole pattern for part numbers

- 080.10. - 080.20. = drawing above left
- 080.30. - 080.50. = drawing below left


- .A1
- .A2
- .A3
- .A4

---

More information ► [www.igus.co.uk/R09](http://www.igus.co.uk/R09)

---

The required clearance height: \( H_F = H + 15 \text{mm} \) (with 0.3 kg/m fill weight)
E-chains® | Series 15 | Product range
Fast opening, high strength

E-chains® | Series 15 | Crossbars on a strip - zip-open along the outer radius

Part No. \( R \) \( B_i \) \( B_a \) \( R \) Available bend radii Weight
--- | --- | --- | --- | --- | --- | --- | ---
e-chains® | | | | | | |
15.015.R.0 | 15 | 26 | 038 048 075 100 110 125 145 180 | 0.25 | | |
15.025.R.0 | 25 | 36 | 038 048 075 100 110 125 145 180 | 0.30 | | |
15.038.R.0 | 38 | 49 | 038 048 075 100 110 125 145 180 | 0.35 | | |
15.050.R.0 | 50 | 61 | 038 048 075 100 110 125 145 180 | 0.40 | | |
15.063.R.0 | 63 | 76 | 038 048 075 100 110 125 145 180 | 0.45 | | |
15.090.R.0 | 80 | 94 | 038 048 075 100 110 125 145 180 | 0.50 | | |
15.113.R.0 | 100 | 113 | 038 048 075 100 110 125 145 180 | 0.55 | | |

Before using this series on long travels please consult igus®

Complete Part No. with required radius \( R \). Example: 15.025.038.0

Installation dimensions

Inner height \( [mm] \) 17
Pitch \( [mm/links] \) 30.5
Links/m 33

\( L_{e-chain} \) length \( L_x = \frac{1}{2} R + K \)

Hole pattern for part numbers 1015. - 1050.
= drawing above left
Hole pattern for part numbers 105. - 107.
= drawing below left

Before using this series on long travels please consult igus®

More information | www.igus.co.uk/15

Order example 1025.34P.Z | to indicate option with brackets pre-fitted
With integrated strain relief tiewrap plates
Full set
Series
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Slotted separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

### Full-width shelves

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
<td>050</td>
<td>110.50</td>
<td>111.50</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
<td>063</td>
<td>110.63</td>
<td>111.63</td>
</tr>
<tr>
<td>038</td>
<td>110.38</td>
<td>111.38</td>
<td>080</td>
<td>110.80</td>
<td>111.80</td>
</tr>
</tbody>
</table>

### Slotted separator

$$X \, [\text{mm}]$$

$$\begin{array}{|c|c|c|}
\hline
015 & 110.15 & 111.15 \\
025 & 110.25 & 111.25 \\
038 & 110.38 & 111.38 \\
050 & 110.50 & 111.50 \\
063 & 110.63 & 111.63 \\
080 & 110.80 & 111.80 \\
\hline
\end{array}$$
**zipper | e-tubes | Series R15 | Accessories**

Montaging brackets, polymer one-piece | Pivoting | Locking

---

**Installation dimensions**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-tubes</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>R15.015 , .R,0</td>
<td>15</td>
<td>26</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.025 , .R,0</td>
<td>25</td>
<td>36</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.038 , .R,0</td>
<td>38</td>
<td>49</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.050 , .R,0</td>
<td>50</td>
<td>61</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.063 , .R,0</td>
<td>63</td>
<td>76</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.080 , .R,0</td>
<td>80</td>
<td>94</td>
<td>063</td>
<td>075</td>
</tr>
<tr>
<td>R15.100 , .R,0</td>
<td>100</td>
<td>113</td>
<td>063</td>
<td>075</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult [igus](https://www.igus.co.uk/R15) for delivery time. Before using this series on long travels please consult igus®.*

Complete Part No. with required radius (R). Example: R15.025 , 063 , 0

---

**More information**

- [www.igus.co.uk/R15](https://www.igus.co.uk/R15)
- [3D CAD](https://www.igus.co.uk/zipper)
- Configurators, service life calculation and more
**zipper | e-tubes | Series R15 | Accessories**

**Interior separation**

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

**Slotted separator**
Vertical separation in e-tubes. The slot allows basic vertical/horizontal shelving arrangements.

**Full-width shelf**
This option is for applications with many small cables with similar diameters. For full width separation.

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
<td>063</td>
<td>110.63</td>
<td>111.63</td>
<td></td>
</tr>
<tr>
<td>038</td>
<td>110.38</td>
<td>111.38</td>
<td>080</td>
<td>110.80</td>
<td>111.80</td>
<td></td>
</tr>
</tbody>
</table>

Series 15 on a pick and place machine. Acceleration: 100 m/s², yet smooth running

More information ➤ www.igus.co.uk/R15

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/zipper
Installation dimensions

Part No. | Series 17 | Crossbars on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Bi</th>
<th>Bb</th>
<th>R Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>17.1.R.0</td>
<td>15</td>
<td>25.5</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.1.R.0</td>
<td>25</td>
<td>35.5</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.3.R.0</td>
<td>38</td>
<td>48.5</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.4.R.0</td>
<td>50</td>
<td>60.5</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.5.R.0</td>
<td>63</td>
<td>76</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.6.R.0</td>
<td>80</td>
<td>93</td>
</tr>
<tr>
<td>e-chains®</td>
<td>17.7.R.0</td>
<td>100</td>
<td>113</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 17.2.075.0

The required clearance height: \( H = H + 25 \text{mm} \) (with 1.5kg/m fill weight)

---

### Mounting brackets, polymer one-piece | Locking

**Order example**
1. → 117.1.12PZ 117.1.12P
2. → 117.2.12PZ 117.2.12P
3. → 117.3.12PZ 117.3.12P
4. → 117.4.12PZ 117.4.12P
5. → 117.5.12PZ 117.5.12P
6. → 117.6.12PZ 117.6.12P
7. → 117.7.12PZ 117.7.12P

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chains® link!

For width index 17.1 up to 17.4
Slot separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

For width index 17.5 up to 17.7
Slot separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

For all widths
Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.
zipper | e-tubes | Series R17 | Product range
Fast opening, enclosed zipper-band

e-tube | Series R17 | Lids on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>FL [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R17.015 .R.0</td>
<td>15</td>
<td>26</td>
<td>0.063</td>
<td>0.075</td>
</tr>
<tr>
<td>R17.025 .R.0</td>
<td>25</td>
<td>36</td>
<td>0.063</td>
<td>0.075</td>
</tr>
<tr>
<td>R17.063 .R.0</td>
<td>63</td>
<td>74</td>
<td>0.063</td>
<td>0.075</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: R17.015.063.0

Installation dimensions

- **Fixed end**
  - FL ≤ 2L ≤ 2
  - FL ≤ 2L ≤ 2

- **Moving end**
  - FL ≤ 2L ≤ 2

**Inner height [mm]**: 32
**Pitch [mm/link]**: 30.5
**Links/m**: 33
**corresponds to [mm]**: 1,006.5
**e-chain® length**: Lx ≥ 1/2 + K

**The required clearance height**: H_F = H + 30mm (with 1.0kg/m fill weight)

**Part No.**
- **e-tubes**
- **Complete Part No. with required radius (R). Example: R17.015.063.0**

**Weight**
- **Available bend radii**

**Width index**
- **Part No. full set with tiewrap plates**
- **Part No. full set without tiewrap plates**

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>015.</td>
<td>117.015.12PZ</td>
<td>117.015.12P</td>
<td>–</td>
<td>25.7</td>
<td>2</td>
</tr>
<tr>
<td>025.</td>
<td>117.025.12PZ</td>
<td>117.025.12P</td>
<td>12</td>
<td>35.7</td>
<td>3</td>
</tr>
<tr>
<td>063.</td>
<td>117.063.12PZ</td>
<td>117.063.12P</td>
<td>48</td>
<td>73.7</td>
<td>6</td>
</tr>
</tbody>
</table>

**Order example**
- **With integrated strain relief tiewrap plates**
- **Full set Series**

**Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index .A1, .A2, .A3 or .A4.**

More information ➤ www.igus.co.uk/R17

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/zipper
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

Slotted separator
Vertical separation in e-tubes. The slot allows basic vertical/horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

<table>
<thead>
<tr>
<th>Full-width shelves</th>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
<tr>
<td></td>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
</tbody>
</table>
E2 micro
Smallest inner heights and bend radii

Advantages of the E2 micro series:
- For the smallest applications
- Lightweight and cost-effective
- Quiet operation due to small pitch
- Ideal for applications with low inertia
- Variety of options - E2 micro as non-openable or openable along the inner or outer radius

When to use another e-chain® series:
- When openable crossbars are required
  - E2.1 micro, page 320
  - zipper, page 226
- When easy filling with connectorised cables is required
  - easy chain®, page 198
Smallest inner heights and bend radii - E2 micro

E2 micro e-chains® are very small, one- and two-piece (B07/B09) e-chains® with low weight, making them ideal for highly dynamic applications. E2 micro e-chains® are optimal for the smallest installation spaces, and are available in many versions. igus® also offers a range of accessories and fixation options. Upgrades of the openable versions are available for many types; different types are interchangeable and can therefore be used as, spare parts for existing applications, for example.

**Typical industries and applications**
- Models (micro e-chain®)
- Automatic doors
- Vehicles
- Measuring machines
- Electronic engineering
- Handling
- Pick and place robots
- General machinery, etc.

**Universal connection:** mounting bracket with strain relief option

**Cost-efficient:** very lightweight, low price

**Smooth Design:** dirt-repellent outer contour

**Smooth running:** small pitch for low-noise, smooth running

**Cost-effective:** one-piece design, non-openable

**Series 074 /094:** moulded crossbar, openable along the inner radius with film hinge

**Series B07/B09:** openable along the outer radius

**Cleanroom test** upon request

**UL94-V2 classification - for series**
- 03, 074, 094 (UL94-V0 upon request)

**IF product design award**
- 1989 igus® series 05

---

**Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (N) [mm]</th>
<th>Inner width (B_i) [mm]</th>
<th>Outer width (B_a) [mm]</th>
<th>Outer height (h_a) [mm]</th>
<th>Bend radius (R) [mm]</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>5</td>
<td>5 - 10</td>
<td>8.70 - 13.7</td>
<td>8</td>
<td>010 - 028</td>
<td>0.40</td>
<td>266</td>
</tr>
<tr>
<td>04</td>
<td>7</td>
<td>7 - 30</td>
<td>12 - 35</td>
<td>10</td>
<td>015 - 048</td>
<td>0.50</td>
<td>268</td>
</tr>
<tr>
<td>05</td>
<td>10</td>
<td>6 - 64</td>
<td>10 - 68</td>
<td>12</td>
<td>018 - 038</td>
<td>0.55</td>
<td>270</td>
</tr>
<tr>
<td>045</td>
<td>10.3</td>
<td>6 - 64</td>
<td>12 - 70</td>
<td>12.5</td>
<td>018 - 083</td>
<td>0.50</td>
<td>272</td>
</tr>
<tr>
<td>06 ()</td>
<td>10.5</td>
<td>6 - 64</td>
<td>12.5 - 71</td>
<td>15</td>
<td>018 - 038</td>
<td>0.60</td>
<td>276</td>
</tr>
<tr>
<td>08 ()</td>
<td>15</td>
<td>10 - 50</td>
<td>18.2 - 58.2</td>
<td>19.3</td>
<td>025 - 048</td>
<td>1.00</td>
<td>286</td>
</tr>
</tbody>
</table>

**E2 micro - one-piece design**
- non-openable

**E2 micro - one-piece design**
- openable along the inner radius with film hinge

**E2 micro - two-piece design**
- openable along the outer radius

---

For new designs we recommend E2.1 system, series: 1) E2C.10, 2) E2C.15, 3) E2.10, 4) E2.15

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Available from stock. Ready to ship in 24 - 48hrs.*
E2 micro | Technical data | Overview

Technical data

| Speed gliding / acceleration gliding | ≤ 3 [m/s] / ≤ 10 [m/s²] |
| Speed FL0 / acceleration FL0 | ≤ 20 [m/s²] / ≤ 200 [m/s²] |
| Speed FLb / acceleration FLb | ≤ 3 [m/s] / ≤ 6 [m/s²] |

Material - permitted temperature °C, igumid G
-40°C / +120°C

Material - permitted temperature °C, igumid NB (only series 03, 074, 094)
-40°C / +80°C

Material lower part - permitted temperature °C, igumid G (only series B07, B09)
-40°C / +120°C

Material crossbar - permitted temperature °C, igumid NB (only series 03, 074, 094)
-40°C / +80°C

Flammability class
- igumid G = VDE 0304 IIC UL94-HB / igumid NB = VDE 0304 IIC UL94-V2

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zip-zag</th>
</tr>
</thead>
<tbody>
<tr>
<td>03</td>
<td>≤ 0.80m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>04</td>
<td>≤ 1.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>05</td>
<td>≤ 1.10m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>045</td>
<td>≤ 1.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>B07 1)</td>
<td>≤ 1.10m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>06 1)</td>
<td>≤ 1.20m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>074</td>
<td>≤ 1.10m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>094</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>B09 1)</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>08 1)</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

For new designs we recommend E2.1 system, series: 1) E2.10, 2) E2.15, 3) E2.10, 4) E2.15 | From page 320

E2 micro | Options and order keys | Examples based on series 08

Options with order keys

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td>Standard</td>
<td>NC version</td>
<td>RBR</td>
<td>igumid ESD</td>
</tr>
<tr>
<td>08.50.R.0</td>
<td>08.50.R.0.NC</td>
<td>08.50.R1/R2.0</td>
<td>08.50.R.0.ESD</td>
</tr>
</tbody>
</table>

Order example | Order key and colour examples | Examples based on series 08

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:

e-chain® (1.0m) Please indicate e-chain® length or number of links: 1.0m or 50 links 08.50.038.0

+ Mounting brackets 1 set (with tie-wrap plates) 08.50.12PZ

Interior separation with 2 separators assembled every 2nd link 2 x B09.2.1

Order text: 1 m 08.50.038.0 + 08.50.12PZ + 2 x B09.2.1

Order key

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index for colour options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>08.50.038.0</td>
</tr>
<tr>
<td>Orange</td>
<td>Special colour .0</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>.31</td>
</tr>
<tr>
<td>White</td>
<td>Special colour .1</td>
</tr>
<tr>
<td>Grey-white</td>
<td>.1S</td>
</tr>
</tbody>
</table>

3D CAD, service life calculation, configurators and more | www.igus.co.uk/E2micro

More information | www.igus.co.uk/E2micro
**E2 micro | Series 03 | Product range**

Smallest applications

---

**e-chains® | Series 03 | One-piece, non-openable**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>03.05 .R.0</td>
<td>5</td>
<td>8.7</td>
<td>010</td>
<td>012</td>
</tr>
<tr>
<td>03.07 .R.0</td>
<td>7</td>
<td>10.7</td>
<td>010</td>
<td>012</td>
</tr>
<tr>
<td>03.10 .R.0</td>
<td>10</td>
<td>13.7</td>
<td>010</td>
<td>012</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: **03.05.028.0**

---

**Installation dimensions**

![Diagram showing installation dimensions](image)

- **Inner height [mm]**: 5
- **Pitch [mm/lin]**: 10
- **Links/m**: 100
- **Corresponds to [mm]**: 1,000
- **e-chain® length**: \(L = \frac{R}{2} + K\)

---

**E2 micro | Series 03 | Accessories**

Mounting brackets, polymer one-piece | Pivoting

---

**Moving end**

03 ... 1Z

**Fixed end**

03 ... 2Z

Illustration shows mounting bracket with optional adapter plate

**Width**

<table>
<thead>
<tr>
<th>index</th>
<th>Part No.</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>03.05.12Z</td>
<td>8.7</td>
</tr>
<tr>
<td>07.</td>
<td>03.07.12Z</td>
<td>10.7</td>
</tr>
<tr>
<td>10.</td>
<td>03.10.12Z</td>
<td>13.7</td>
</tr>
</tbody>
</table>

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

---

**Complete Part No. with required radius (R). Example:**

**03.05.028.0**

---

**Adapter plate for rapid installation**

For all sizes, Part No. **03.10.0F**

The adapter has scored lines so that it can be adapted to the respective e-chain® width. It is not always necessary when attaching the mounting brackets. The mounting brackets can also be screwed on without the adapter plate.

---

**Optional adapter plate**

---

**3D CAD, service life calculation, configurators and more**

[www.igus.co.uk/E2micro](http://www.igus.co.uk/E2micro)

---

More information ▶ [www.igus.co.uk/03](http://www.igus.co.uk/03)
e-chains® | Series 04 | One-piece, non-openable

<table>
<thead>
<tr>
<th>Part No. e-chains®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>04.07.R0</td>
<td>7</td>
<td>12</td>
<td>015, 018, 028, 038, 048</td>
<td>0.07</td>
</tr>
<tr>
<td>04.10.R0</td>
<td>10</td>
<td>15</td>
<td>015, 018, 028, 038, 048</td>
<td>0.08</td>
</tr>
<tr>
<td>04.16.R0</td>
<td>16</td>
<td>21</td>
<td>015, 018, 028, 038, 048</td>
<td>0.09</td>
</tr>
<tr>
<td>04.20.R0</td>
<td>20</td>
<td>25</td>
<td>015, 018, 028, 038, 048</td>
<td>0.10</td>
</tr>
<tr>
<td>04.30.R0</td>
<td>30</td>
<td>35</td>
<td>015, 018, 028, 038, 048</td>
<td>0.11</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 04.10.028.0

Installation dimensions

The required clearance height: \( H_F = H + 5 \text{ mm} \) (with 0.1 kg/m fill weight)

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

E2 micro | Series 04 | Accessories

Mounting brackets, polymer one-piece | Pivoting

Moving end
040...1(PZ)

Fixed end
040...2(PZ)

Material hole pattern for part numbers 040.07...040.20.

= drawing above left

Hole pattern for part numbers 040.30.

= drawing below left

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index .A2 or .A4.

Order example 040.07.12PZ .A2, to indicate option with brackets pre-fitted with integrated strain relief tiewrap plates Full set Series

More information ► www.igus.co.uk/04
**E2 micro | Series 05 | Product range**

Low weight, high dynamics, cost-effective

---

**e-chains® | Series 05 | One-piece, non-openable**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>05.06 .R0</td>
<td>6</td>
<td>10</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>05.10 .R0</td>
<td>10</td>
<td>14</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>05.16 .R0</td>
<td>16</td>
<td>20</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>05.20 .R0</td>
<td>20</td>
<td>24</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>05.30 .R0</td>
<td>30</td>
<td>34</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>05.64 .R0</td>
<td>64</td>
<td>68</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R), Example: 05.10.028.0

**Installation dimensions**

![Diagram](image_url)

- Inner height [mm]: 10
- Pitch [mm/link]: 20
- Links/m: 50
- Corresponds to [mm]: 1,000
- e-chain® length $L_a = \frac{x}{2} + K$

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

**E2 micro | Series 05 | Accessories**

**Mounting brackets, polymer one-piece | One end pivoting**

![Diagram](image_url)

- Moving end
- Fixed end

**Width | Part No. full set**

<table>
<thead>
<tr>
<th>Without tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>05.06.12</td>
<td>–</td>
<td>10.7</td>
</tr>
<tr>
<td>10.</td>
<td>05.10.12</td>
<td>–</td>
<td>14.7</td>
</tr>
<tr>
<td>16.</td>
<td>05.16.12</td>
<td>–</td>
<td>20.7</td>
</tr>
<tr>
<td>20.</td>
<td>05.20.12</td>
<td>–</td>
<td>24.7</td>
</tr>
<tr>
<td>30.</td>
<td>05.30.12</td>
<td>22</td>
<td>34.7</td>
</tr>
<tr>
<td>64.</td>
<td>05.64.12</td>
<td>56</td>
<td>68.7</td>
</tr>
</tbody>
</table>

Order example 050.10.12.A2 to indicate option with brackets pre-fitted

---

**More information** ► [www.igus.co.uk/05](http://www.igus.co.uk/05)

---

**The required clearance height: $H_F = H + 10$mm (with 0.2kg/m fill weight)**
Radii for several widths available upon request (please see product range table above).

**e-chains® | Series 045 | One-piece, non-openable**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>045.06...</td>
<td>6</td>
<td>12</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.09</td>
</tr>
<tr>
<td>045.10...</td>
<td>10</td>
<td>16</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.10</td>
</tr>
<tr>
<td>045.16...</td>
<td>16</td>
<td>22</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.11</td>
</tr>
<tr>
<td>045.20...</td>
<td>20</td>
<td>26</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.13</td>
</tr>
<tr>
<td>045.30...</td>
<td>30</td>
<td>36</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.16</td>
</tr>
<tr>
<td>045.64...</td>
<td>64</td>
<td>70</td>
<td>018, 028, 038, 083*</td>
<td>≈ 0.19</td>
</tr>
</tbody>
</table>

*Radius 083 only for Part No. 045.20. For other widths available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: 045.10.028.0

**Installation dimensions**

- Inner height [mm]: 10.3
- Pitch [mm/ln]: 13
- Links/m: 77

*corresponds to [mm]: 1,001

e-chain® length: L = +15° + K

**Moving end**

<table>
<thead>
<tr>
<th>Fixed end</th>
<th>Moving end</th>
</tr>
</thead>
<tbody>
<tr>
<td>0450...1(PZ)</td>
<td>0450...2(PZ)</td>
</tr>
</tbody>
</table>

**Width index**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>0450.06.12PZ</td>
<td>0450.06.12</td>
<td>–</td>
<td>12</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>0450.10.12PZ</td>
<td>0450.10.12</td>
<td>–</td>
<td>16</td>
<td>–</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>0450.16.12PZ</td>
<td>0450.16.12</td>
<td>–</td>
<td>22</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>0450.20.12PZ</td>
<td>0450.20.12</td>
<td>–</td>
<td>26</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>0450.30.12PZ</td>
<td>0450.30.12</td>
<td>22</td>
<td>36</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>64.</td>
<td>0450.64.12PZ</td>
<td>0450.64.12</td>
<td>56</td>
<td>70</td>
<td>50</td>
<td>6</td>
</tr>
</tbody>
</table>

Material mounting bracket: igumid® G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Mounting bracket with integrated strain relief tiewrap plate has reductions of ø 3mm / ø 6mm 90°

Mounting bracket without strain relief tiewrap plate only has holes of ø 3mm

**Order example**

0450.10.12PZ | A2 | Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A2 or A4.
e-chains® | Series B07 | Openable along the outer radius, from one side

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B07.16.R.0</td>
<td>16</td>
<td>22.5</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>B07.20.R.0</td>
<td>20</td>
<td>27</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>B07.30.R.0</td>
<td>30</td>
<td>37</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>B07.40.R.0</td>
<td>40</td>
<td>47</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

For new designs we recommend E2.1 system, series E2.10 ▶ From page 328

Complete Part No. with required radius (R). Example: B07.40.038.0

Installation dimensions

<table>
<thead>
<tr>
<th>R</th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>51</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>D</td>
<td>56</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>K</td>
<td>100</td>
<td>130</td>
<td>180</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 10 \text{mm} \) (with 0.2kg/m fill weight)

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

For more information, visit www.igus.co.uk/B07

E2 micro | Series B07 | Accessories

Mounting brackets, polymer one-piece | Locking

Moving end 060 ... 1P(Z)

Fixed end 060 ... 2P(Z)

Hole pattern for part numbers 060.16. - 060.20. = drawing above left
Hole pattern for part numbers 060.30. - 060.40. = drawing below left

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Order example 060.40.12PZ A1


For new designs we recommend E2.1 system, series E2.10 From page 328

Complete Part No. with required radius (R). Example: B07.40.038.0

E2 micro | Series B07 | Accessories

Mounting brackets, polymer one-piece | Locking

Moving end 060 ... 1P(Z)

Fixed end 060 ... 2P(Z)

Hole pattern for part numbers 060.16. - 060.20. = drawing above left
Hole pattern for part numbers 060.30. - 060.40. = drawing below left

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Order example 060.40.12PZ A1


For new designs we recommend E2.1 system, series E2.10 From page 328

Complete Part No. with required radius (R). Example: B07.40.038.0
E2 micro | Series 06 | Product range
Low weight, high dynamics

e-chains® | Series 06 | One-piece, non-openable

Part No.  Bi  Ba  R  Available bend radii  Weight
---  ---  ---  ---  ---
e-chains°  |  |  |  |
06.06.R0  6  12.5 | 018 | 028 | 038 | = 0.13
06.10.R0  10  16.5 | 018 | 028 | 038 | = 0.14
06.16.R0  16  22.5 | 018 | 028 | 038 | = 0.16
06.20.R0  20  27  | 018 | 028 | 038 | = 0.17
06.30.R0  30  37  | 018 | 028 | 038 | = 0.20
06.40.R0  40  47  | 018 | 028 | 038 | = 0.23
06.50.R0  50  57  | 018 | 028 | 038 | = 0.26
06.64.R0  64  71  | 018 | 028 | 038 | = 0.30

For new designs we recommend E2.1 system, series E2 micro. From page 326

Complete Part No. with required radius (R). Example: 06.10.028.0

Installation dimensions

[Diagram showing installation dimensions]

<table>
<thead>
<tr>
<th>R</th>
<th>018</th>
<th>028</th>
<th>038</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>51</td>
<td>71</td>
<td>91</td>
</tr>
<tr>
<td>D</td>
<td>56</td>
<td>66</td>
<td>76</td>
</tr>
<tr>
<td>K</td>
<td>100</td>
<td>130</td>
<td>180</td>
</tr>
</tbody>
</table>

The required clearance height: H_r = H + 10mm (with 0.2kg/m fill weight)

E2 micro | Series 06 | Accessories
Mounting brackets, polymer one-piece | Locking

Moving end 060 ... 1P(Z)
Fixed end 060 ... 2P(Z)

Hole pattern for part numbers 060.06 - 060.20.
= drawing above left
Hole pattern for part numbers 060.30 - 060.64.
= drawing below left

For new designs we recommend E2.1 system, series E2 micro. From page 326

Complete Part No. with required radius (R). Example: 06.10.028.0

Installation dimensions

[Diagram showing installation dimensions]

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>060.06.12P2</td>
<td>060.06.12P</td>
<td>–</td>
<td>12.5</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>060.10.12P2</td>
<td>060.10.12P</td>
<td>–</td>
<td>16.5</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>060.16.12P2</td>
<td>060.16.12P</td>
<td>–</td>
<td>22.5</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>060.20.12P2</td>
<td>060.20.12P</td>
<td>–</td>
<td>27.0</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>060.30.12P2</td>
<td>060.30.12P</td>
<td>22</td>
<td>37.0</td>
<td>3</td>
</tr>
<tr>
<td>40.</td>
<td>060.40.12P2</td>
<td>060.40.12P</td>
<td>32</td>
<td>47.0</td>
<td>4</td>
</tr>
<tr>
<td>50.</td>
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<td>060.50.12P</td>
<td>42</td>
<td>57.0</td>
<td>5</td>
</tr>
<tr>
<td>64.</td>
<td>060.64.12P2</td>
<td>060.64.12P</td>
<td>56</td>
<td>71.0</td>
<td>6</td>
</tr>
</tbody>
</table>

Material mounting bracket - gummid/°, temperature: -40° up to +120°C, VDE 0341 4 C, UL94-HB

Order example
A - to indicate option with brackets pre-fitted
With integrated strain relief tiewrap plates
Full set

Series

060.10-12P2.A1

Installation dimensions

Part No. | Bi [mm] | Ba [mm] | R Available bend radii | Weight [kg/m]
--- | --- | --- | --- | ---
074. 06.R0 | 06 | 12.3 | 018 | 028 | 038 | ≈0.14
074. 10.R0 | 10 | 16.3 | 018 | 028 | 038 | ≈0.15
074. 16.R0 | 16 | 22.3 | 018 | 028 | 038 | ≈0.16
074. 20.R0 | 20 | 26.3 | 018 | 028 | 038 | ≈0.17
074. 30.R0* | 30 | 36.3 | 018 | 028 | 038 | ≈0.20
074. 40.R0* | 40 | 46.3 | 018 | 028 | 038 | ≈0.23

**Available bend radii

---

**Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: 074.10.018.0

---

Moving end
060 ... 1P(Z)

Fixed end
060 ... 2P(Z)

Hole pattern for part numbers
060.10. - 060.20
= drawing above left
Hole pattern for part numbers
060.30. - 060.40.
= drawing below left

---

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

---

Order example
060.10.12PZ A1


---

**Width available upon request. Please consult igus® for delivery time.

---

Part No. full set with tiewrap plates
Part No. full set without tiewrap plates

<table>
<thead>
<tr>
<th>Width</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>060.06.12PZ</td>
<td>12.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>060.10.12PZ</td>
<td>16.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>060.16.12PZ</td>
<td>22.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>060.20.12PZ</td>
<td>27.7</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

---

Mounting brackets, polymer one-piece

---

3D CAD, service life calculation, configurators and more

---

More information ➤ www.igus.co.uk/074

---

3D CAD, service life calculation, configurators and more ➤ www.igus.co.uk/E2micro

---

**Width available upon request. Please consult igus® for delivery time.

---

Part No. full set relief tiewrap plates
Part No. full set with brackets pre-fitted

<table>
<thead>
<tr>
<th>Width</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>060.06.12PZ**</td>
<td>22</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>060.06.12PZ**</td>
<td>32</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

---

**Width available upon request. Please consult igus® for delivery time.

---

Part No. full set without relief tiewrap plates
Part No. full set with integrated strain relief tiewrap plates

<table>
<thead>
<tr>
<th>Width</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>060.06.12PZ</td>
<td>12.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>060.10.12PZ</td>
<td>16.5</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>060.16.12PZ</td>
<td>22.5</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>060.20.12PZ</td>
<td>27.7</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

---

**Width available upon request. Please consult igus® for delivery time.

---

Moving end
060 ... 1P(Z)

Fixed end
060 ... 2P(Z)

---

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

---

Order example
060.10.12PZ A1


---

**Width available upon request. Please consult igus® for delivery time.
**Installation dimensions**

- **Part No.**
  - 094.10 \_R,0
  - 094.16 \_R,0
  - 094.20 \_R,0
  - 094.30 \_R,0
  - 094.40 \_R,0

- **Available bend radii**:
  - Bi: [mm]
  - Ba: [mm]
  - R: [mm]

- **Weight**: [kg/m]
  - 0.23
  - 0.24
  - 0.25
  - 0.28
  - 0.31

**Width available upon request. Please consult igus e-chains index for delivery time.**

Complete Part No. with required radius (R). Example: 094.10.028.0

**Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB**

**Moving end**

- 080 ... 1P(Z)

**Fixed end**

- 080 ... 2P(Z)

**Width**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>080.10.12PZ</td>
<td>080.10.12P</td>
<td>-</td>
<td>18.2</td>
<td>1</td>
</tr>
<tr>
<td>16.</td>
<td>080.16.12PZ</td>
<td>080.16.12P</td>
<td>-</td>
<td>24.2</td>
<td>2</td>
</tr>
<tr>
<td>20.</td>
<td>080.20.12PZ</td>
<td>080.20.12P</td>
<td>-</td>
<td>28.2</td>
<td>2</td>
</tr>
<tr>
<td>30.</td>
<td>080.30.12PZ**</td>
<td>080.30.12P</td>
<td>-</td>
<td>38.2</td>
<td>3</td>
</tr>
<tr>
<td>40.</td>
<td>080.40.12PZ</td>
<td>080.40.12P</td>
<td>-</td>
<td>48.2</td>
<td>4</td>
</tr>
</tbody>
</table>

**Order example**

- 080.10-12PZ: A1
- 080.20-12PZ: A2
- 080.30-12PZ: A3
- 080.40-12PZ: A4

**Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.**

**More information**

- www.igus.co.uk/094
- 3D CAD, service life calculation, configurators and more - www.igus.co.uk/E2micro

**Part No.**

- 028
- 038
- 048

**H** | 75 | 95 | 115
**D** | 68 | 78 | 88
**K** | 130 | 160 | 195

The required clearance height: \( H = H + 15 \text{mm} \) (with 0.3kg/m fill weight)
E2 micro | Series B09 | Openable along the outer radius, cost-effective

### e-chains® | Series B09 | Openable along the outer radius, from one side

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>B09.16,R.0</td>
<td>16 24.2</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td></td>
<td>B09.20,R.0</td>
<td>20 28.2</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td></td>
<td>B09.30,R.0</td>
<td>30 38.2</td>
<td>028</td>
<td>038</td>
</tr>
<tr>
<td></td>
<td>B09.40,R.0</td>
<td>40 48.2</td>
<td>028</td>
<td>038</td>
</tr>
</tbody>
</table>

For new designs we recommend E2.1 system, series E2.15 ➔ From page 330

Complete Part No. with required radius (R). Example: B09.40,038,0

### Installation dimensions

- **Inner height [mm]**: 14.3
- **Pitch [mm/link]**: 20
- **Links/m**
  - 50 corresponds to [mm]: 1,000
- **e-chain® length**: \( L_e + \frac{16}{3} + K \)

---

**Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB**

**Width index**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. ➔</td>
<td>080.16.12PZ</td>
<td>080.16.12P</td>
<td>–</td>
<td>24.2</td>
<td>2</td>
</tr>
<tr>
<td>20. ➔</td>
<td>080.20.12PZ</td>
<td>080.20.12P</td>
<td>–</td>
<td>28.2</td>
<td>2</td>
</tr>
<tr>
<td>30. ➔</td>
<td>080.30.12PZ</td>
<td>080.30.12P</td>
<td>22</td>
<td>38.2</td>
<td>3</td>
</tr>
<tr>
<td>40. ➔</td>
<td>080.40.12PZ</td>
<td>080.40.12P</td>
<td>32</td>
<td>48.2</td>
<td>4</td>
</tr>
</tbody>
</table>

**R** 028 038 048

**H** 75 95 115

**D** 68 78 88

**K** 130 160 195

The required clearance height: \( H_F = H + 15 \text{mm} \) (with 0.3kg/m fill weight)

---

**E2 micro | Series B09 | Accessories**

Mounting brackets, polymer one-piece | Locking

Moving end

80 ... 1P(2)

Fixed end

80 ... 2P(2)

---

**More information** ➔ www.igus.co.uk/B09

282
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain ® link!

Slotted separator
For easy vertical separation. The slot allows basic vertical/ horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

Full-width shelves
Width = X [mm]
For new designs we recommend E2.1 system, series 08.

Installation dimensions

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB


Order example

080.50.12P .A1

with brackets pre-fitted with integrated strain relief tiewrap plates

Full set

Series

080.10. - 080.20.

= drawing above left

Hole pattern for part numbers 080.30. - 080.50.

= drawing below left

For new designs we recommend E2.1 system, series 08.12P. From page 330

Complete Part No. with required radius (R). Example: 08.50.038.0
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Slotted separator
For easy vertical separation. The slot allows basic vertical/horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

<table>
<thead>
<tr>
<th>Full-width shelves</th>
<th>Width = X [mm]</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
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<tbody>
<tr>
<td></td>
<td></td>
<td>010</td>
<td>110.10</td>
<td>111.10</td>
<td>010</td>
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<tr>
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<td>013</td>
<td>110.13</td>
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<td>110.50</td>
<td>111.50</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Series 03 - extremely small installation space on a paint-spraying machine
**E2 mini**

Small and medium sizes

**Advantages of the E2 mini series:**
- If a small, but extremely strong e-chain® is required
- Quiet operation due to small pitch
- For highly dynamic applications
- Variety of options - E2 mini as non-openable or openable along the inner or outer radius

**When to use another e-chain® series:**
- When openable crossbars are required
  - E2.1 micro, page 320
  - zipper, page 226
- When easy filling with connectorised cables is required
  - easy chain®, page 198
Small and medium sizes - E2 mini

E2 mini are small one- or two-piece e-chains®, recommended for highly dynamic applications. igus® also offers a range of accessories and fixation options. Upgrades to openable versions are available for many types. Different types are interchangeable and can also serve as replacements.

Typical industries and applications
- Construction machinery
- Handling
- Furniture
- Packaging machines
- Textile machines
- Vehicle applications
- Woodworking machines
- Glass machines
- Automation
- General machinery, etc.

Flexible use:
- One-piece e-chains®, openable along the inner radius with film hinge (series 14/F17)
- Two-piece e-chains®, openable along the outer radius (series B15/B17)
- One-piece e-chains®, openable along the inner radius (series 14/F17i)
- Two-piece e-chains®, openable along the inner radius (series B15i/B17i)

UL94-V2 classification - for series 14 and F17 (UL94-V0 upon request)

Electrically conductive ESD e-chains® upon request

More information ▶ www.igus.co.uk/E2mini

E2 mini | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height hi [mm]</th>
<th>Inner width Bi [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Outer height ha [mm]</th>
<th>Bend radius R [mm]</th>
<th>Unsupported length l [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18</td>
<td>15 - 100</td>
<td>26 - 113</td>
<td>23</td>
<td>028 - 180</td>
<td>1.20</td>
<td>296</td>
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<tr>
<td>11.031</td>
<td>23</td>
<td>31</td>
<td>41.2</td>
<td>28</td>
<td>045 - 070</td>
<td>=1.35</td>
<td>300</td>
</tr>
<tr>
<td>11.080</td>
<td>28</td>
<td>80</td>
<td>93</td>
<td>33.4</td>
<td>038 - 065</td>
<td>1.50</td>
<td>302</td>
</tr>
<tr>
<td>11.1/11.2</td>
<td>41</td>
<td>15 - 25</td>
<td>25.5 - 35.5</td>
<td>46</td>
<td>040 - 100</td>
<td>=1.35</td>
<td>304</td>
</tr>
<tr>
<td>14</td>
<td>20</td>
<td>15 - 50</td>
<td>26 - 61</td>
<td>25</td>
<td>028 - 125</td>
<td>0.65</td>
<td>306</td>
</tr>
<tr>
<td>F17</td>
<td>32</td>
<td>15</td>
<td>26</td>
<td>39</td>
<td>048</td>
<td>1.20</td>
<td>316</td>
</tr>
</tbody>
</table>

E2 mini - one-piece e-chains® non-openable

E2 mini - one-piece e-chains® openable along the inner radius with film hinge

E2 mini - two-piece e-chains® openable along the outer radius

E2 mini - two-piece e-chains® openable along the inner radius

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
**E2 mini | Technical data | Overview**

### Technical data

- **Speed gliding / acceleration gliding**: ≤ 3 [m/s] / ≤ 10 [m/s²]
- **Speed FL₁₀ / acceleration FL₁₀**: ≤ 20 [m/s] / ≤ 200 [m/s²]
- **Speed FL₁₅ / acceleration FL₁₅**: ≤ 3 [m/s] / ≤ 6 [m/s²]

- **Material - permitted temperature °C, igumid G**: -40°C / +120°C
- **Material - permitted temperature °C, igumid NB (only Series 14)**: -40°C / +80°C
- **Material lower part - permitted temperature °C, igumid G (only Series B15/B15i, B17/B17i, F17)**: -40°C / +80°C
- **Material crossbar - permitted temperature °C, igumid NB (only Series B15/B15i, B17/B17i, F17)**: -40°C / +80°C

- **Rammibility class**: igumid G = VDE 0304 IIC UL94-HB / igumid NB = VDE 0304 IIC UL94-V2

#### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zip-zag</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>≤ 2.40m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>11.031</td>
<td>≤ 2.70m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>—</td>
<td>upon request</td>
</tr>
<tr>
<td>11.080</td>
<td>≤ 3.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>—</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>11.1/11.2</td>
<td>≤ 2.70m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>14</td>
<td>≤ 1.30m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>B15i / B15</td>
<td>≤ 2.40m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>B17i / B17</td>
<td>≤ 2.00m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
</tr>
<tr>
<td>F17</td>
<td>≤ 2.40m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

FL₁₀ = unsupported with straight upper run
FL₁₅ = unsupported with permitted sag

---

**E2 mini | Options and order keys**

### Options with order keys | Examples based on series B15

- **Standard**: NC version - (No Camber) without pretension
- **Reverse Bend Radius (RBR) for circular movements**: Unsupported lengths +25% possible
- **ESD - electrically conductive material**: ESD

#### Part No.

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC version (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>Unsupported lengths +25% possible</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15.025.R.0</td>
<td>B15.025.R.0.NC</td>
<td>B15.025.R1/2.R.0</td>
<td>B15.025.R.0.XXL</td>
<td>B15.025.R.0.ESD</td>
</tr>
</tbody>
</table>

- **Ready to ship**: in 24 - 48 hrs.
- **Delivery time**: several series from stock
- **Delivery time**: 5 business days
- **Delivery time**: 10 business days

#### Order example | Order key and colour examples | Examples based on series B15

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**

- **e-chain® (1.0m)**: Please indicate e-chain® length or number of links: 1.0m or 33 links
- **B15.025.038.0**

**+ Mounting brackets**: 1 set (with tiewrap plates)

**Interior separation**: with 2 separators assembled every 2nd link

**Order text**: 1 m B15.025.038.0 + 1025.34PZ + 2 x 154

#### Order index for colour options

<table>
<thead>
<tr>
<th>Colour</th>
<th>Colour index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>.0</td>
<td>Orange</td>
<td>.2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>.31</td>
<td>Yellow</td>
<td>.4</td>
</tr>
<tr>
<td>White</td>
<td>.1</td>
<td>Light Grey</td>
<td>.14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>.15</td>
<td>Special Colour</td>
<td>.1S</td>
</tr>
</tbody>
</table>

**Black e-chains® available from stock.**

Above special colours upon request.
Part No. | Complete Part No. with required radius (mm)
---|---
10.015.R.0 | 10.015.R.015
10.025.R.0 | 10.025.R.026
10.038.R.0 | 10.038.R.049
10.050.R.0 | 10.050.R.061
10.5.R.0 | 10.5.R.076
10.6.R.0 | 10.6.R.094
10.7.R.0 | 10.7.R.113

Installation dimensions:

- Inner height: 18 mm
- Pitch: 30.5 mm
- Links/m: 33 corresponds to 1,006.5 mm


Order example:

- 1025.34PZ A1: To indicate option with brackets pre-fitted with integrated strain relief tiewrap plates.
- Full set series
Interior separation

No lateral gap to side links necessary.
As standard separators are fitted every 2ᵈ e-chain® link!

Separator
For easy vertical separation in e-chains®. Separators can be arranged in any position in the e-chain® cross-section.
Interior separation is not possible for series 10.015.R.0.

Options | With moulded-in vertical separation

<table>
<thead>
<tr>
<th>Part No.</th>
<th>B</th>
<th>A</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>10.038.R.0.5</td>
<td>38</td>
<td>49</td>
<td>075</td>
<td>0.79</td>
</tr>
<tr>
<td>10.050.R.0.6</td>
<td>50</td>
<td>61</td>
<td>075</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Separator, for e-chains® unassembled 101
assembled 111

Cost-effective cable guidance with E2 mini in a moving monitor application

Complete Part No. with required radius (R). Example: 10.038.075.0.3 or 10.050.075.0.3
E2 mini | Series 11.031 | Product range

Large inner height, asymmetric design

e-chains® | Series 11.031 | One-piece, non-openable

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>11.031.R.0</td>
<td>31</td>
<td>41.2</td>
<td>0.43</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R); Example: 11.031.R.045

Installation dimensions

- Inner height [mm]: 23
- Pitch [mm/link]: 30.5
- Links/m: 33
- Corresponds to [mm]: 1,006.5
- e-chain® length: \( L_e = \frac{1}{2} + K \)

Fill weight [kg/m]:

- FLG

Moving end

- Fixed end

Moving end 11 ... 1P(Z)

Fixed end 11 ... 2P(Z)

E2 mini | Series 11.031 | Accessories

Mounting brackets, polymer one-piece | Pivoting

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>42</td>
<td>3</td>
</tr>
</tbody>
</table>

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index (.A2 or .A4).

Order example:

- 11.031.12PZ.A2
- To indicate option with brackets pre-fitted.
- With integrated strain relief tiewrap plates.
- Full set.
- Series.

More information ► www.igus.co.uk/11.031
E2 mini | Series 11.080 | Product range
Large inner height, asymmetric design

e-chains® | Series 11.080 | Non-openable. With moulded-in vertical separation

<table>
<thead>
<tr>
<th>Part No.</th>
<th>B1</th>
<th>B3</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td>11.080.R0</td>
<td>80</td>
<td>93</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chamber design</th>
<th>A</th>
<th>B</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mm</td>
<td>mm</td>
<td>kg/m</td>
</tr>
<tr>
<td></td>
<td>46</td>
<td>32</td>
<td>0.73</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 11.080.038.0

Installation dimensions

- Inner height [mm]: 28
- Pitch [mm/link]: 30.5
- Links/m: 33
- Corresponds to [mm]: 1,006.5
- e-chain length (e-chain® length): \( L_e + \frac{1}{2} \cdot R \)

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>index</td>
<td>11.080.12PZ</td>
<td>11.080.12P</td>
</tr>
<tr>
<td>A</td>
<td>65</td>
<td>93</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Number of teeth</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Order example

11.080.12PZ.A2

- To indicate option with brackets pre-fitted
- With integrated strain relief tiewrap plates
- Full set
- Series

Possible orientation for assembled mounting brackets. To receive brackets pre-fitted please add index A2.

The required clearance height: \( H_F = H + 20 \text{mm} \) (with 0.5kg/m fill weight)
E2 mini | Series 11.1 11.2 | Product range
Very large inner height, small outer width, asymmetric design

### e-chains® | Series 11.1 11.2 | One-piece, non-openable

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.1.R0</td>
<td>15</td>
<td>25.5</td>
<td>040</td>
<td>063</td>
</tr>
<tr>
<td>11.2.R0</td>
<td>25</td>
<td>35.5</td>
<td>040</td>
<td>063</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 11.1.040.0

### Installation dimensions

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>0</th>
<th>1.5</th>
<th>3.0</th>
<th>4.5</th>
<th>6.0</th>
<th>7.5</th>
<th>9.0</th>
<th>10.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>0.0</td>
<td>0.5</td>
<td>1.0</td>
<td>1.5</td>
<td>2.0</td>
<td>2.5</td>
<td>3.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

- **FLg**
- **FLB**
- **FLG**

The required clearance height: \( H_F = H + 20 \text{mm} \) (with 0.5kg/m fill weight)

### E2 mini | Series 11.1 11.2 | Accessories
Mounting brackets, polymer one-piece | Locking

#### Moving end

<table>
<thead>
<tr>
<th>11 ... 1P(Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
</tr>
<tr>
<td>16.5</td>
</tr>
</tbody>
</table>

#### Fixed end

<table>
<thead>
<tr>
<th>11 ... 2P(Z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.5</td>
</tr>
<tr>
<td>16.5</td>
</tr>
</tbody>
</table>

#### Width index

<table>
<thead>
<tr>
<th>Part No. full set with tiwrap plates</th>
<th>Part No. full set without tiwrap plates</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>101.12PZ</td>
<td>101.12P</td>
<td>–</td>
<td>26</td>
<td>2</td>
</tr>
<tr>
<td>102.12PZ</td>
<td>102.12P</td>
<td>10</td>
<td>36</td>
<td>3</td>
</tr>
</tbody>
</table>

#### Possible orientation for assembled mounting brackets.
To receive brackets pre-fitted please add index A4.

#### Order example

101.12PZA4

To indicate option with brackets pre-fitted
With integrated strain relief tiwrap plates
Full set Series
E2 mini | Series 14 | Product range
Openable along the inner radius, enclosed outer radius

e-chains® | Series 14 | Openable along the inner radius from one side with film hinge

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg/m]</td>
</tr>
<tr>
<td>14.1 .R,0</td>
<td>15</td>
<td>26</td>
<td>[028</td>
<td>038</td>
</tr>
<tr>
<td>14.2 .R,0</td>
<td>25</td>
<td>36</td>
<td>[028</td>
<td>038</td>
</tr>
<tr>
<td>14.3 .R,0</td>
<td>38</td>
<td>49</td>
<td>[028</td>
<td>038</td>
</tr>
<tr>
<td>14.4 .R,0</td>
<td>50</td>
<td>61</td>
<td>[028</td>
<td>038</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 14.2.038.0

Installation dimensions

The required clearance height: \( H_F = H + 20 \text{mm} \) (with 0.5kg/m fill weight)

E2 mini | Series 14 | Accessories
Mounting brackets, polymer one-piece | Locking

Moving end

Fixed end

Width

<table>
<thead>
<tr>
<th>Part No. full set with tie-wrap plates</th>
<th>Part No. full set without tie-wrap plates</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>114.1.12PZ</td>
<td>114.1.12P</td>
<td>–</td>
<td>26.3</td>
<td>2</td>
</tr>
<tr>
<td>2.038.0</td>
<td>36.3</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.048.0</td>
<td>49.3</td>
<td>4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.075.0</td>
<td>61.3</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Material mounting bracket - igumid G, temperature: -40° up to +120°C, VDE 0304 IIC UL94-HB

Order example 114.2.12PZ.A1 to indicate option with brackets pre-fitted.


3D CAD, service life calculation, configurators and more www.igus.co.uk/E2mini
E2 mini | Series B15 | Product range
Openable along the inner or outer radius

e-chains® | Series B15i
Openable along the inner radius, from one side
Openable along the outer radius, from one side

<table>
<thead>
<tr>
<th>Part No. e-chains®</th>
<th>B15i</th>
<th>B15</th>
<th>Available bend radii</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>B15i.015.R.0</td>
<td>15</td>
<td>26</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.025.R.0</td>
<td>25</td>
<td>36</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.038.R.0</td>
<td>38</td>
<td>49</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.050.R.0</td>
<td>50</td>
<td>61</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.5.R.0</td>
<td>63</td>
<td>76</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.6.R.0</td>
<td>80</td>
<td>94</td>
<td>038</td>
<td>048</td>
</tr>
<tr>
<td>B15i.7.R.0</td>
<td>100</td>
<td>113</td>
<td>038</td>
<td>048</td>
</tr>
</tbody>
</table>

Before using this series on long travels please consult igus®

Part No. with required radius (R): Example: B15.025.038.0

Installation dimensions

Moving end

Fixed end

Moving end

Fixed end

- A1
- A2
- A3
- A4


Order example
... 4P(Z) / 10 ... 2P(Z)

Hole pattern for part numbers 1015. - 1050. = drawing above left
Hole pattern for part numbers 105. - 107. = drawing below left

Part No. full set pivoting with tiewrap plates
Part No. full set locking with tiewrap plates

Weight (kg/m)

Width

Index

Part No. full set pivoting with tiewrap plates
Part No. full set locking with tiewrap plates

A

B

Number of teeth

1015.34PZ
1015.34P
1015.12PZ
1015.12P

–
25.5
2

1025.34PZ
1025.34P
1025.12PZ
1025.12P

10
35.5
3

1038.34PZ
1038.34P
1038.12PZ
1038.12P

23
48.5
4

1050.34PZ
1050.34P
1050.12PZ
1050.12P

35
60.5
5

105.34PZ
105.34P
105.12PZ
105.12P

48
75.0
6

106.34PZ
106.34P
106.12PZ
106.12P

65
92.0
8

107.34PZ
107.34P
107.12PZ
107.12P

85
112.0
10

Order example

- A1 to indicate option with brackets pre-fitted
- With integrated strain relief tiewrap plates
- Full set
- Series
E2 mini | Series B15i-B15 | Application example

E2 mini is a space-saving, reliable cable guide, here supplying power to lift doors.

---

**Interior separation**

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

![Diagram of interior separation](image)

**Slotted separator**
For easy vertical separation. The slot allows basic vertical/ horizontal shelving arrangements.

**Slotted side plate**
Allows modular shelving right up to the side links. No clearance required!

**Full-width shelf**
This option is for applications with many small cables with similar diameters. For full width separation.

---

**Full-width shelves**
Width = X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
<tr>
<td>038</td>
<td>110.38</td>
<td>111.38</td>
</tr>
</tbody>
</table>

---

More information ► www.igus.co.uk/B15i ► www.igus.co.uk/B15

3D CAD, service life calculation, configurators and more ► www.igus.co.uk/E2mini
Part No. e-chains

Part No. full set

Width

Index

with tiwraps plates

without tiwraps plates

A

B

1. 117.1.12PZ

117.1.12P

25.5

2

2. 117.2.12PZ

117.2.12P

35.5

3

3. 117.3.12PZ

117.3.12P

48.5

4

4. 117.4.12PZ

117.4.12P

60.5

5

5. 117.5.12PZ

117.5.12P

76

6

6. 117.6.12PZ

117.6.12P

93

7

7. 117.7.12PZ

117.7.12P

113

10

Order example

A1 to indicate option with brackets pre-fitted with integrated strain relief tiwraps plates.

Empty Series

More information ► www.igus.co.uk/B17i | www.igus.co.uk/B17

<table>
<thead>
<tr>
<th>Part No. e-chain(s) openable along the inner radius</th>
<th>B17.1.R** R Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>B17.1.R.0 15 25.5</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.2.R.0 25 35.5</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.3.R.0 38 48.5</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.4.R.0 50 60.5</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.5.R.0 63 76</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.6.R.0 80 93</td>
<td>[048]</td>
<td>063</td>
</tr>
<tr>
<td>B17.7.R.0 100 113</td>
<td>[048]</td>
<td>063</td>
</tr>
</tbody>
</table>

Installation dimensions

Inner height [mm] 32
Pitch [mm/6 links] 30.5
Links/m 33
Corresponds to [mm] 1,006.5
E-chain length Lx = K + H

The required clearance height: H = H + 25mm (with 1.5kg/m fill weight)

Hole pattern for part numbers 117.1.

Order example

A1 to indicate option with brackets pre-fitted with integrated strain relief tiwraps plates.

Empty Series

More information ► www.igus.co.uk/B17i | www.igus.co.uk/B17

3D CAD, service life calculation, configurators and more ► www.igus.co.uk/E2mini
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain link!

For width index B17.1 up to B17.4
Slotted separator
For easy vertical separation. The slot allows basic vertical/horizontal shelving arrangements.

Slotted side plate, left
Allows modular shelving right up to the side links. No clearance required!

Slotted side plate, right
Allows modular shelving right up to the side links. No clearance required!

For width index B17.5 up to B17.7
Slotted separator
For easy vertical separation. The slot allows basic vertical/horizontal shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

For all widths
Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

Full-width shelves
<table>
<thead>
<tr>
<th>Width = X [mm]</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unassembled</td>
<td>Assembled</td>
<td>Unassembled</td>
</tr>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
<tr>
<td>025</td>
<td>110.25</td>
<td>111.25</td>
</tr>
</tbody>
</table>
E2 mini | Series F17 | Product range
Large inner height, small outer width, enclosed outer radius

E2 mini | Series F17 | Accessories
Mounting brackets, polymer one-piece | Locking

### Installation dimensions

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>048</td>
<td>063*</td>
<td>075</td>
<td>100°</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: F17.015.048.0

- Radius available upon request. Please consult igus® for delivery time.
- Complete Part No. with required radius (R). Example: F17.015.048.0

### Part No.

- **F17.015…**
  - **Part No. full set with tiewrap plates:** 117.015.12PZ
  - **Part No. full set without tiewrap plates:** 117.015.12P

### Width index

- **A:** 015
- **B:** 27.7
- **Number of teeth:** 2

### Order example

- **117.015.12PZ A1**
  - Indicates option with brackets pre-fitted.
  - With integrated strain relief tiewrap plates.
  - Full set.
  - Series.

### Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.

### e-chains® | Series F17 | Openable along the inner radius from one side with film hinge

### Complete Part No. with required radius (R). Example: F17.015.048.0

- Radius available upon request. Please consult igus® for delivery time.

### Material mounting bracket - igumid® G, temperature: -40° up to +120°C, VDE 0304 IC UL94-HB

### 3D CAD, service life calculation, configurators and more

- More information: www.igus.co.uk/E2mini

### The required clearance height:

\[ H_F = H + 30 \text{mm} \]

(with 0.5kg/m fill weight)

*Radius available upon request. Please consult igus® for delivery time.

---

more information | www.igus.co.uk/F17
**E2 mini | Series F17 | Accessories**

**Interior separation**

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

**Slotted separator**
Vertical separation in e-tubes. The slot allows basic vertical/horizontal shelving arrangements.

**Full-width shelf**
This option is for applications with many small cables with similar diameters. For full width separation.

**Full-width shelves**

<table>
<thead>
<tr>
<th>Width = X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>110.15</td>
<td>111.15</td>
</tr>
</tbody>
</table>

---

**E2 mini | Application example**

E2 mini e-chain® with Reverse Bend Radius RBR
E2.1 micro
the new "small"
E2 micro standard

+ Advantage of the E2.1 micro series:
  ● More usable installation space*
  ● 25% more unsupported length*
  ● 100% more fill weight*
  ● 10% weight saving*
  ● Chain opener for opening long sections of chain quickly.
  Provided free of charge with the first delivery
  ● Cable friendly interior separation range
  ● Openable from both sides (left or right)
  ● Available in 2 sizes, from stock
  ● Version with electrically conductive ESD material, tested with over 10 million cycles for the most demanding applications

* in comparison to equivalent igus® series

When to use another e-chain® series:
  ● When a quicker fitting of cables is required
    ► easy chain®, page 308
  ● When an e-chain® that is suitable for cleanrooms is needed
    ► E3 system, page 732
  ● When an openable e-chain® is not necessary
    ► E2 micro, page 260
The new "small" E2 micro standard - E2.1

E2.1 micro e-chains® are very small, one- and two-piece e-chains® with low weight, making them ideal for highly dynamic applications. E2.1 micro e-chains® are optimal for smallest installation spaces, and are available in many versions. They feature a strong stop-dog system for up to 25% longer unsupported travels as well as 100% higher fill weights (compared to similar igus® types). They are lightweight, robust and easy to open. An e-chain® opener is included in order to open the e-chain® in one go. Many accessories like interior separation and fixation options are also available.

Typical industries and applications
- Models (micro e-chain®) ● Automatic doors
- Vehicles ● Measuring machines ● Electronic engineering ● Handling ● Pick und place robots ● General machinery, etc.

UL94-V0 classification upon request

Electrically conductive ESD e-chains® - several series available from stock

For a quick and easy opening, an e-chain® opener is included with every first order of openable E2.1 micro from igus®

E2.1 micro - two-piece design
openable along the inner radius

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.10</td>
<td>10.1</td>
<td>6 - 50</td>
<td>13.4 - 57.4</td>
<td>15</td>
<td>018 - 038</td>
<td>0.75</td>
<td>326</td>
</tr>
<tr>
<td>E2.15</td>
<td>14.4</td>
<td>10 - 50</td>
<td>17.8 - 57.8</td>
<td>19.3</td>
<td>028 - 075</td>
<td>1.30</td>
<td>330</td>
</tr>
</tbody>
</table>

E2.1 micro - two-piece design
openable along the outer radius

| E2.10  | 10.1         | 6 - 50      | 13.4 - 57.4 | 15           | 018 - 038   | 0.75                | 326  |
| E2.15  | 14.4         | 10 - 50     | 17.8 - 57.8 | 19.3         | 028 - 075   | 1.30                | 330  |

E2.1 micro - one-piece design
non-openable

| E2C.10 | 10.6         | 6 - 50      | 13.4 - 57.4 | 15           | 018 - 038   | 0.75                | 326  |
| E2C.15 | 14.9         | 10 - 50     | 17.8 - 57.8 | 19.3         | 028 - 075   | 1.30                | 330  |

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➪ www.igus.co.uk/E2.1micro

3D CAD, service life calculation, configurators and more ➪ www.igus.co.uk/E2.1micro
E2 micro | Technical data | Overview

### Technical data

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.10/E2.10/E2C.10</td>
<td>≤ 1.50m</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E2.15/E2.15/E2C.15</td>
<td>≤ 2.60m</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

### Material - permitted temperature °C, igumid G
- -40°C / +120°C

### Flammability class, igumid G
- VDE 0304 IIC UL94-HB

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.10/E2.10/E2C.10</td>
<td>≤ 1.50m</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E2.15/E2.15/E2C.15</td>
<td>≤ 2.60m</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

### E2 micro special | ice-chain New

- In order to prevent e-chains® from freezing at very low temperature in an inclined lift, two "nubs" have been injection-moulded onto the e-chain®.
- Closed link for maximum holding strength
- High strength for large unsupported lengths

More information ➤ www.igus.co.uk/icechain

---

E2.1 micro | Options and order keys

### Options with order keys

- **Part No.**
  - Standard
  - NC version - (No Camber) without pretension
  - Reverse Bend Radius (RBR) for circular movements
  - ESD - electrically conductive material

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.10</td>
<td>E2i.10</td>
<td>E2i.10</td>
<td>E2i.10</td>
<td></td>
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<tr>
<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
<td></td>
</tr>
<tr>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td></td>
</tr>
</tbody>
</table>

### Order example

E2i.10 1 m E2.10.2.1 + E2C.10 1 m E2C.10

### Order key and colour examples

- **Part No.**
  - Standard
  - NC version - (No Camber) without pretension
  - Reverse Bend Radius (RBR) for circular movements
  - ESD - electrically conductive material

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.10</td>
<td>E2i.10</td>
<td>E2i.10</td>
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<td></td>
</tr>
<tr>
<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
<td></td>
</tr>
<tr>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td></td>
</tr>
</tbody>
</table>

### Order index

- **Part No.**
  - Standard
  - NC version - (No Camber) without pretension
  - Reverse Bend Radius (RBR) for circular movements
  - ESD - electrically conductive material

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
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</tr>
</thead>
<tbody>
<tr>
<td>E2i.10</td>
<td>E2i.10</td>
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<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
<td></td>
</tr>
<tr>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td></td>
</tr>
</tbody>
</table>

### Delivery time

- Ready to ship* in 24 - 48 hrs.
- Delivery time* 2-5 business days
- Delivery time* several series from stock

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

---

### Order example for complete e-chain (1.0m), colour black, with mounting brackets and interior separation:

- e-chain® (1.0m)
- Please indicate e-chain® length or number of links: 1.0m or 50 links

E2.10.20.0 + Mounting brackets 1 set (with tiewrap plates) = E2.10.20.34PZ

- Interior separation with 2 separators assembled every 2m link

E2.10.2.1

---

### Options with order keys

- **Part No.**
  - Standard
  - NC version - (No Camber) without pretension
  - Reverse Bend Radius (RBR) for circular movements
  - ESD - electrically conductive material

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.10</td>
<td>E2i.10</td>
<td>E2i.10</td>
<td>E2i.10</td>
<td></td>
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<tr>
<td>E2.10</td>
<td>E2.10</td>
<td>E2.10</td>
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</tr>
<tr>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td></td>
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</tbody>
</table>

### Order key

- **Part No.**
  - Standard
  - NC version - (No Camber) without pretension
  - Reverse Bend Radius (RBR) for circular movements
  - ESD - electrically conductive material

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.10</td>
<td>E2i.10</td>
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<td>E2.10</td>
<td></td>
</tr>
<tr>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td>E2C.10</td>
<td></td>
</tr>
</tbody>
</table>

### Order index for colour options

- **Colour**
  - Black
  - Silver-grey
  - Orange
  - Light grey
  - Yellow
  - Grey-white

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>0</td>
<td>Orange</td>
<td>Special colour 0.2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>0.31</td>
<td>Yellow</td>
<td>Special colour 0.4</td>
</tr>
<tr>
<td>Grey-white</td>
<td>0.15</td>
<td>Grey-white</td>
<td>Special colour 0.15</td>
</tr>
</tbody>
</table>

Black e-chains® available from stock.
Above special colours upon request.

---

### Flammability class, igumid G
- igumid G

### Material - permitted temperature °C, igumid G
- -40°C / +120°C

### Speed

- Speed gliding / acceleration gliding
  - ≤ 10 [m/s] / ≤ 50 [m/s]
  - ≤ 20 [m/s] / ≤ 200 [m/s]
  - ≤ 3 [m/s] / ≤ 6 [m/s]

### Delivery time

- Delivery time* several series from stock

---

### More information ➤ www.igus.co.uk/icechain

---

E2.1 micro technical data | Overview

- Speed gliding / acceleration gliding
  - ≤ 10 [m/s] / ≤ 50 [m/s]
- Speed FL0 / acceleration FL0
  - ≤ 20 [m/s] / ≤ 200 [m/s]
- Speed FL1 / acceleration FL1
  - ≤ 3 [m/s] / ≤ 6 [m/s]
- Material - permitted temperature °C, igumid G
  - -40°C / +120°C
- Flammability class, igumid G
  - VDE 0304 IIC UL94-HB

---

E2.1 micro | Technical data | Overview

### Technical data

- Speed gliding / acceleration gliding
  - ≤ 10 [m/s] / ≤ 50 [m/s]
- Speed FL0 / acceleration FL0
  - ≤ 20 [m/s] / ≤ 200 [m/s]
- Speed FL1 / acceleration FL1
  - ≤ 3 [m/s] / ≤ 6 [m/s]
- Material - permitted temperature °C, igumid G
  - -40°C / +120°C
- Flammability class, igumid G
  - VDE 0304 IIC UL94-HB

### Flammability class, igumid G
- igumid G

### Material - permitted temperature °C, igumid G
- -40°C / +120°C

### Speed

- Speed gliding / acceleration gliding
  - ≤ 10 [m/s] / ≤ 50 [m/s]
- Speed FL0 / acceleration FL0
  - ≤ 20 [m/s] / ≤ 200 [m/s]
- Speed FL1 / acceleration FL1
  - ≤ 3 [m/s] / ≤ 6 [m/s]
- Material - permitted temperature °C, igumid G
  - -40°C / +120°C
- Flammability class, igumid G
  - VDE 0304 IIC UL94-HB

### More information ➤ www.igus.co.uk/icechain
E2.10 | Series E2.10 | Product range

Next generation, strong, low noise, fast opening

---

**e-chains®** Series E2.10
Openable along the inner radius, from both sides

---

**e-chains®** Series E2.10
Openable along the outer radius, from both sides

---

**e-chains®** Series E2C.10
One-piece, non-openable

---

<table>
<thead>
<tr>
<th>Part No. e-chains® openable along the inner radius</th>
<th>Part No. e-chains® openable along the outer radius</th>
<th>Part No. e-chains® one-piece, non-openable</th>
<th>( R ) Available bend radii</th>
<th>( E2.10 )</th>
<th>( E2.10 )</th>
<th>( E2.10 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.10.06.R.O</td>
<td>E2C.10.06.R.O</td>
<td>E2C.10.06.R.O</td>
<td>6</td>
<td>13.4</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>E2.10.10.R.O</td>
<td>E2C.10.10.R.O</td>
<td>E2C.10.10.R.O</td>
<td>10</td>
<td>17.4</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>E2.10.40.R.O</td>
<td>E2C.10.40.R.O</td>
<td>E2C.10.40.R.O</td>
<td>40</td>
<td>47.4</td>
<td>018</td>
<td>028</td>
</tr>
<tr>
<td>E2.10.50.R.O</td>
<td>E2C.10.50.R.O</td>
<td>E2C.10.50.R.O</td>
<td>50</td>
<td>57.4</td>
<td>018</td>
<td>028</td>
</tr>
</tbody>
</table>

1) Available as ESD version from stock

Complete Part No. with required radius (\( R \)). Example: E2.10.20.038.0

---

**ESD - many sizes from stock**

- Standardised product made from sintered ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information | www.igus.co.uk/esd

---

**E2.10 | Series E2.10 | Installation dimensions**

Unsupported applications | Short travels

---

**Reduce assembly time - E2.1 micro e-chain® opener**

- For a quick and easy opening, an e-chain® opener is included
- With every first order of openable E2.1 micro from igus®
- Reduce opening times from 33 to 2 seconds
- Open a long chain section in one go

More information | www.igus.co.uk/E2.1open

---

**ESD material tested with over 10 million cycles for the toughest requirements**

More information | www.igus.co.uk/esd
**E2.1 micro | Series E2.10 | Accessories**

**Mounting brackets, polymer one-piece | Pivoting | Locking**

**Moving end**
- E2.100 ... 3PZ
- E2.100 ... 5PZ
- E2.100 ... 1PZ

**Fixed end**
- both ends pivoting
- one end* pivoting
- both ends locking

---

**Additional features**
- The quickflange can be clipped in to all mounting brackets. Contains a housing for hexagonal nut and socket cap bolt M3. Single Part No.: E2.150.QF or Part No. incl. mounting bracket: E2.100.20.34PZQF

---

**Interior separation | Increase cable service life**

**Width index**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set with tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>06. ▶</td>
<td>E2.100.06.34PZ</td>
<td>E2.100.06.56PZ</td>
<td>E2.100.06.12PZ</td>
<td>13.4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10. ▶</td>
<td>E2.100.10.34PZ</td>
<td>E2.100.10.56PZ</td>
<td>E2.100.10.12PZ</td>
<td>17.4</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>16. ▶</td>
<td>E2.100.16.34PZ</td>
<td>E2.100.16.56PZ</td>
<td>E2.100.16.12PZ</td>
<td>23.4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>20. ▶</td>
<td>E2.100.20.34PZ</td>
<td>E2.100.20.56PZ</td>
<td>E2.100.20.12PZ</td>
<td>27.4</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>30. ▶</td>
<td>E2.100.30.34PZ</td>
<td>E2.100.30.56PZ</td>
<td>E2.100.30.12PZ</td>
<td>37.4</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>40. ▶</td>
<td>E2.100.40.34PZ</td>
<td>E2.100.40.56PZ</td>
<td>E2.100.40.12PZ</td>
<td>47.4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>50. ▶</td>
<td>E2.100.50.34PZ</td>
<td>E2.100.50.56PZ</td>
<td>E2.100.50.12PZ</td>
<td>57.4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

---

**E2.1 micro | Series E2.10 | Accessories**

**Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.**

**Locks securely in preset increments**

**75% less wear**
- igus® separators increase the service life of the cables by a factor of 4
- Separators with a rounded design for less cable wear and abrasion
- Optimised for easier and faster assembly

More information: www.igus.co.uk/E2.10open

---

**Interior separation assembly tool for the E2.1 micro**

- Easy fitting of separators and shelves
- Significant assembly time reduction
- Grip and tool tip can be ordered separately and are easy to change

More information: www.igus.co.uk/E2.1open
### E2C.15 | E2i.15

Next generation, strong, low noise, fast opening

---

#### E2.1 micro | Series E2.15 | Product range

- **E2.1 micro**
- **Series E2.15**
- **Series E2C.15**

- **Openable along the e-chains**
- **Openable along the inner radius, from both sides**
- **Openable along the outer radius, from both sides**
- **One-piece, non-openable**

**Part No. e-chains| Openable along the inner radius**

<table>
<thead>
<tr>
<th>E2.15.10,R,0</th>
<th>E2.15.10,R,0</th>
<th>E2C.15.10,R,0</th>
<th>10</th>
<th>17.8</th>
<th>028</th>
<th>038</th>
<th>048</th>
<th>075*</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.15.13,R,0</td>
<td>E2.15.13,R,0</td>
<td>E2C.15.13,R,0</td>
<td>13</td>
<td>20.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
<tr>
<td>E2.15.16,R,0</td>
<td>E2.15.16,R,0</td>
<td>E2C.15.16,R,0</td>
<td>16</td>
<td>23.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
<tr>
<td>E2.15.20,R,0</td>
<td>E2.15.20,R,0</td>
<td>E2C.15.20,R,0</td>
<td>20</td>
<td>27.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
<tr>
<td>E2.15.30,R,0</td>
<td>E2.15.30,R,0</td>
<td>E2C.15.30,R,0</td>
<td>30</td>
<td>37.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
<tr>
<td>E2.15.40,R,0</td>
<td>E2.15.40,R,0</td>
<td>E2C.15.40,R,0</td>
<td>40</td>
<td>47.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
<tr>
<td>E2.15.50,R,0</td>
<td>E2.15.50,R,0</td>
<td>E2C.15.50,R,0</td>
<td>50</td>
<td>57.8</td>
<td>028</td>
<td>038</td>
<td>048</td>
<td>075*</td>
</tr>
</tbody>
</table>

*Radius 075 only for series E2C.15.40

---

#### E2.1 micro | Series E2.15 | Installation dimensions

- **Unsupported applications**
- **Short travels**

---

#### E2.1 micro | Series E2.15 | Installation dimensions

- **Part No. e-chains| Openable along the outer radius**
- **Part No. e-chains| One-piece, non-openable**

- **Available bend radii**

<table>
<thead>
<tr>
<th>E2.15</th>
<th>E2.15</th>
<th>E2C.15</th>
</tr>
</thead>
<tbody>
<tr>
<td>028</td>
<td>038</td>
<td>048</td>
</tr>
</tbody>
</table>

**Reduction of assembly time - E2.1 micro e-chain® opener**

- For a quick and easy opening, an e-chain® opener is included with every first order of openable E2.1 micro from igus®
- ESD material tested with over 10 million cycles for the toughest requirements
- Reduce opening times from 33 to 2 seconds
- Open a long chain section in one go

---

**More information**: [www.igus.co.uk/3d](http://www.igus.co.uk/3d)

---

**ESD - many sizes from stock**

- Standardised product made from igumid ESD
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock
- More information: [www.igus.co.uk/esd](http://www.igus.co.uk/esd)

---

**More information**: [www.igus.co.uk/E2.15](http://www.igus.co.uk/E2.15)
E2.1 micro | Series E2.15 | Accessories

Mounting brackets, polymer one-piece | Pivoting | Locking

Moving end
- E2.150 ... 3PZ: both ends pivoting
- E2.150 ... 5PZ: one end* pivoting
- E2.150 ... 1PZ: both ends locking

Fixed end
- E2.150 ... 6PZ: both ends pivoting
- E2.150 ... 2PZ: both ends locking

Width = X (mm) shelves
- Full-width
- Unassembled


Additional features
- The quickflange can be clipped in to all mounting brackets. Contains a housing for hexagonal nut and socket cap bolt M3. Single Part No.: E2.150QF or Part No. incl. mounting bracket: E2.150.20.34PZQF

E2.1 micro | Series E2.15 | Accessories

Interior separation | Increase cable service life

Not for one-piece, non-openable e-chain® links please assemble the interior separation before fitting the e-chain®!
As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
For easy vertical separation in e-chains®. Separators can be arranged in any position in the e-chain® cross-section.
Without notches, freely movable.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

Order example
A1: to indicate option with brackets pre-fitted
B1: with integrated chain relief tie wrap plates
C1: Full set
D1: Width
E1: Series

75% less wear
- igus® separators increase the service life of the cables by a factor of 4
- Separators with a rounded design for less cable wear and abrasion
- Optimised for easier and faster assembly

More information: www.igus.co.uk/E2.1open

E2.1 micro | Series E2.15 | Accessories

Interior separation assembly tool for the E2.1 micro
- Easy fitting of separators and shelves
- Significant assembly time reduction
- Grip and tool tip can be ordered separately and are easy to change

More information: www.igus.co.uk/E2.1open

3D CAD, service life calculation, configurators and more: www.igus.co.uk/E2.1micro
E2.1
New generation E2/000 e-chains® New

Advantages of the E2.1 series:
- More usable interior space with inner heights of 26, 38 and 48mm while the outer height is the same as the E2/000 e-chains®
- Easy to open - openable along the inner and outer radius, from both sides (left or right)
- Greater strength for unsupported applications
- Longer service life for gliding applications
- Integrated grid for interior separation in 2.5mm steps
- Cable-friendly due to smooth interior
- Quiet operation due to integrated brake
- igus® e-chain® opener for rapid opening in seconds, available for Series E2.38
- Complete interior separation range

When to use another e-chain® series:
- When a light, cost-effective e-chain®/e-tube with higher dynamics is needed  ➤ E4.1L, from page 524
- When even higher strength is required  ➤ E4.1L, from page 524
- For very simple applications with fast filling  ➤ easy chain®, page 198
**New generation E2/000 e-chains® - E2.1**

The proven e-chain system® E2/000 has been the worldwide standard in machinery since the year 2000. Continuous improvements over many years have now been combined in the new generation E2.1 and a new standard has been set. More usable filling space with the same outer dimensions and lower noise with increased service life and strength.

- More usable interior space while the outer height is the same as the E2/000 e-chains®
- Easy to open - openable along the inner and outer radius, from both sides (left or right)
- Quiet operation due to optimised brake
- Greater strength for unsupported applications
- Longer service life for gliding applications
- Notched crossbar with 2.5mm spacing
- Complete interior separation range

**Typical industries and applications**

- Machine tools
- Wood processing machines
- General mechanical engineering and all other areas

**Universal connection:**
Many mounting options with or without strain relief

**Easy to open:**
Openable along the inner and outer radius, from both sides (left or right)

**Cable-friendly:**
Very smooth contours ensure the longest cable life

**Economical:**
E2.1 is lighter and offers more inner height than the E2/000 system with the same outer dimensions

**Quiet operation:**
Integrated brake reduces noise

**Long service life:**
Due to integrated gliding surfaces even on long travels

**High strength:**
Large pin/bore and crossbar with high locking force

**Open 1m e-chain® in 2 seconds. igus® e-chain® opener for rapid opening in seconds, available for Series E2.38**

**Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.26**</td>
<td>26</td>
<td>upon request</td>
<td>upon request</td>
<td>35</td>
<td>048 - 250</td>
<td>2.25</td>
<td>342</td>
</tr>
<tr>
<td>E2.38**</td>
<td>38</td>
<td>upon request</td>
<td>upon request</td>
<td>50</td>
<td>063 - 250</td>
<td>2.75</td>
<td>348</td>
</tr>
<tr>
<td>E2.48**</td>
<td>48</td>
<td>upon request</td>
<td>upon request</td>
<td>64</td>
<td>075 - 300</td>
<td>3.00</td>
<td>354</td>
</tr>
</tbody>
</table>

**E2.1**
Crossbars operable along the inner radius, from both sides

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.26 New</td>
<td>26</td>
<td>38 - 77</td>
<td>55 - 94</td>
<td>35</td>
<td>048 - 250</td>
<td>2.25</td>
<td>342</td>
</tr>
<tr>
<td>E2.38 New</td>
<td>38</td>
<td>50 - 100</td>
<td>67 - 117</td>
<td>50</td>
<td>063 - 250</td>
<td>2.75</td>
<td>348</td>
</tr>
<tr>
<td>E2.48 New</td>
<td>48</td>
<td>75 - 150</td>
<td>97 - 172</td>
<td>64</td>
<td>075 - 300</td>
<td>3.00</td>
<td>354</td>
</tr>
</tbody>
</table>

**More useable filling space, quiet operation due to integrated brake - the new generation E2 e-chains®**

*Available upon request. Please consult igus® for delivery time.

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
E2.1 | Technical data | Overview

### Technical data

<table>
<thead>
<tr>
<th>Speed gliding</th>
<th>≤ 10 [m/s]</th>
<th>≤ 50 [m/s²]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed FLₐ / acceleration FLₐ</td>
<td>≤ 20 [m/s]</td>
<td>≤ 200 [m/s²]</td>
</tr>
<tr>
<td>Speed FLₖ / acceleration FLₖ</td>
<td>≤ 3 [m/s]</td>
<td>≤ 6 [m/s²]</td>
</tr>
</tbody>
</table>

- **Material - permitted temperature °C, igumid G**: -40°C / +120°C
- **Flammability class, igumid G**: VDE 0304 IIC UL94-HB

1) For openable series along the inner radius in gliding applications, please consult igus®

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
<th>Unsupported</th>
<th>Lower run</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.26</td>
<td>E2.26</td>
<td>≤ 4.25m</td>
<td>≤ 100m</td>
<td>≤ 40m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E2.38</td>
<td>E2.38</td>
<td>≤ 5.5m</td>
<td>≤ 120m</td>
<td>≤ 50m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E2.48</td>
<td>E2.48</td>
<td>≤ 6.0m</td>
<td>≤ 150m</td>
<td>≤ 80m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

1) For openable series along the inner radius in gliding applications, please consult igus®

### Reduce assembly time - E2.1 e-chain® opener

- igus® e-chain® opener for rapid opening in seconds, available for Series E2.38
- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go

More information: [www.igus.co.uk/E2.1opener](http://www.igus.co.uk/E2.1opener)
## Options with order keys | Examples based on series E2i.38/E2.38

<table>
<thead>
<tr>
<th>Standard</th>
<th>Optional noise dampers</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td>E2i.38.065.R.0</td>
<td>E2i.38.065.R.0</td>
<td>E2i.38.065.R.0.NC</td>
<td>E2i.38.065.R1/R2.0</td>
</tr>
<tr>
<td>e-chain® openable along inner radius</td>
<td>e-chain® openable along inner radius</td>
<td>e-chain® openable along inner radius</td>
<td>e-chain® openable along the outer radius</td>
</tr>
<tr>
<td>E2.38.065.R.0</td>
<td>–</td>
<td>E2.38.065.R.0.NC</td>
<td>E2.38.065.R1/R2.0</td>
</tr>
<tr>
<td>e-chain® openable along the outer radius</td>
<td>e-chain® openable along the outer radius</td>
<td>e-chain® openable along the outer radius</td>
<td></td>
</tr>
</tbody>
</table>

*Ready to ship* in 24 - 48hrs. | Available upon request | Delivery time* 2-5 business days | Available upon request |
|-------------------------------|------------------------|-----------------------------|------------------------|

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

1) For openable series along the inner radius in gliding applications, please consult igus®

## Order example | Examples based on series E2.38

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**

e-chain® (1.0m) Please indicate e-chain® length or number of links: 1.0m or 22 links E2.38.065.100.0

+ Mounting brackets 1 set (with tie-wrap plates) 2606.34PZB

Interior separation with 2 separators assembled every 2nd link 2 x 38.1.1

Order text: 1 m E2.38.065.100.0 + 2606.34PZB + 2 x 38.1.1

## Options with order keys | Examples based on series E2i.38/E2.38

<table>
<thead>
<tr>
<th>Unsupported lengths</th>
<th>ESD - electrically conductive material</th>
<th>Magnetically detectable plastic e-chains®</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td>E2i.38.065.R.0.XXL</td>
<td>E2i.38.065.R.0.ESD</td>
<td>E2i.38.065.R.0.DT</td>
</tr>
<tr>
<td>e-chain® openable along inner radius</td>
<td>e-chain® openable along inner radius</td>
<td>e-chain® openable along inner radius</td>
</tr>
<tr>
<td>E2i.38.065.R.0.XXL</td>
<td>E2i.38.065.R.0.ESD</td>
<td>E2i.38.065.R.0.DT</td>
</tr>
<tr>
<td>e-chain® openable along the outer radius</td>
<td>e-chain® openable along the outer radius</td>
<td>e-chain® openable along the outer radius</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Available upon request</th>
<th>Available upon request</th>
<th>Available upon request</th>
</tr>
</thead>
</table>

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

1) For openable series along the inner radius in gliding applications, please consult igus®

2) Bottom part made from XXL material

## Order key and colour examples | Examples based on series E2i.38/E2.38

**Order key**
e-chain® openable along the inner radius
e-chain® openable along the outer radius

**Order index for colour options**

<table>
<thead>
<tr>
<th>Series / Type</th>
<th>Inner height</th>
<th>Width index (depends on Bi)</th>
<th>Bend radius R</th>
<th>Colour index (standard black)</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.38.065.100.0</td>
<td>E2i.38.065.100.0</td>
<td>E2.28.065.100.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard .0</td>
<td>Orange</td>
<td>Special colour .2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour .31</td>
<td>Yellow</td>
<td>Special colour .4</td>
</tr>
<tr>
<td>White</td>
<td>Special colour .1</td>
<td>Light grey</td>
<td>Special colour .14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour .15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock.
Above special colours available upon request.
**E2.26**

**E2i.26**

*New*

**Product range**

Quiet operation, stronger and quicker to open

**E2.26**

**E2i.26**

**Crossbars openable along the outer radius, from both sides**

**e-chains®**

**Series E2.26**

**Crossbars openable along the inner radius, from both sides**

**Part No. e-chains**

Complete Part No. with required radius (mm).

- Example: E2i.26.025

**E2i.26**

*Width available upon request. Please consult igus for delivery times.

**More information**

**Aluminium support tray**

- Corrosion-resistant and seawater-resistant aluminium rail with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

**Installation dimensions**

**Unsupported applications**

**Short travels**

**Gliding applications**

**For long travels from 10m to max. 100m**

**More information**

*From page 1270*

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**Table:**

<table>
<thead>
<tr>
<th>Part No. e-chains</th>
<th>E2.26 Available bend radii</th>
<th>E2.26 Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.26.025_R0</td>
<td>25 [mm] 42 [mm]</td>
<td>E2.26.025_R0</td>
</tr>
<tr>
<td>E2.26.038_R0</td>
<td>38 [mm] 55 [mm]</td>
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</tr>
<tr>
<td>E2.26.057_R0</td>
<td>57 [mm] 74 [mm]</td>
<td>E2.26.057_R0</td>
</tr>
<tr>
<td>E2.26.077_R0</td>
<td>77 [mm] 94 [mm]</td>
<td>E2.26.077_R0</td>
</tr>
<tr>
<td>E2.26.089_R0</td>
<td>89 [mm] 106 [mm]</td>
<td>E2.26.089_R0</td>
</tr>
<tr>
<td>E2.26.103_R0</td>
<td>103 [mm] 120 [mm]</td>
<td>E2.26.103_R0</td>
</tr>
<tr>
<td>E2.26.125_R0</td>
<td>125 [mm] 142 [mm]</td>
<td>E2.26.125_R0</td>
</tr>
</tbody>
</table>

*Before using series E2.26 on long travels please consult igus®.*

**Notes:**

**Before using series E2.26 openable along the outer radius.**

In case of travels between 4 and 10m we recommend an e-chain® with a longer unsupported length.

**More information**

*From page 1270*

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**3D CAD, configurators, service life calculation and more**

www.igus.co.uk/E2i.26
Polymer pivoting | Recommended for unsupported and gliding applications
Polymer locking | Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting with tiereap plates without tiereap plate</th>
<th>Part No. full set locking with tiereap plates without tiereap plate</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>025. ▶</td>
<td>2020.34PZB*</td>
<td>2020.34PZB</td>
<td>41</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>038. ▶</td>
<td>2030.34PZB</td>
<td>2030.12PZB</td>
<td>54</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>057. ▶</td>
<td>2050.34PZB</td>
<td>2050.12PZB</td>
<td>73</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>077. ▶</td>
<td>2070.34PZB</td>
<td>2070.12PZB</td>
<td>93</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>089. ▶</td>
<td>2090.34PZB</td>
<td>2090.12PZB</td>
<td>105</td>
<td>77</td>
<td>9</td>
</tr>
<tr>
<td>103. ▶</td>
<td>2100.34PZB</td>
<td>2100.12PZB</td>
<td>119</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>125. ▶</td>
<td>2125.34PZB</td>
<td>2125.12PZB</td>
<td>141</td>
<td>112</td>
<td>12</td>
</tr>
</tbody>
</table>

Full set with tiereap plate + 10 cable tiereaps, please add index K1. Example: 2020.34PZB(K1+)

KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA with tiereap plates both ends pivoting 2</th>
<th>Part No. full set KMA with tiereap plates one end pivoting 3</th>
<th>Part No. full set KMA with tiereap plates both ends locking 4</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Bi [mm]</th>
<th>Number of teeth</th>
</tr>
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<tbody>
<tr>
<td>038. ▶</td>
<td>E2.260.038.34ZB*</td>
<td>E2.260.038.56ZB</td>
<td>E2.260.038.12ZB</td>
<td>49</td>
<td>56</td>
<td>38</td>
<td>4</td>
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<tr>
<td>057. ▶</td>
<td>E2.260.057.34ZB*</td>
<td>E2.260.057.56ZB</td>
<td>E2.260.057.12ZB</td>
<td>68</td>
<td>77</td>
<td>57</td>
<td>6</td>
</tr>
<tr>
<td>103. ▶</td>
<td>E2.260.103.34ZB*</td>
<td>E2.260.103.56ZB</td>
<td>E2.260.103.12ZB</td>
<td>114</td>
<td>123</td>
<td>103</td>
<td>10</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time. 1) One end pivoting only to the inner radius
Optional strain relief: without tiereap plates, please state part number without index ZB (KMA = plastic-metal mounting bracket)

E2.26 | E2i.26 | E2.26

E2i.26

Polymer locking | Width index | Part No. full set locking without index ZB | A [mm] | B [mm] | Number of teeth |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>025. ▶</td>
<td>2020.12PZB</td>
<td>41</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>038. ▶</td>
<td>2030.12PZB</td>
<td>54</td>
<td>25</td>
<td>4</td>
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<td>057. ▶</td>
<td>2050.12PZB</td>
<td>73</td>
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<tr>
<td>077. ▶</td>
<td>2070.12PZB</td>
<td>93</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>089. ▶</td>
<td>2090.12PZB</td>
<td>105</td>
<td>77</td>
<td>9</td>
</tr>
<tr>
<td>103. ▶</td>
<td>2100.12PZB</td>
<td>119</td>
<td>90</td>
<td>10</td>
</tr>
<tr>
<td>125. ▶</td>
<td>2125.12PZB</td>
<td>141</td>
<td>112</td>
<td>12</td>
</tr>
</tbody>
</table>

Fixed end
Moving end
2 ... 3PZ(B)/2 ... 1PZ(B+)
2 ... 4PZ(B)/2 ... 2PZ(B)

Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

More information ➤ www.igus.co.uk/E2.26 ➤ www.igus.co.uk/E2.26

Strain relief e.g. clamps, tiereap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

344 More information ➤ www.igus.co.uk/E2.26 ➤ www.igus.co.uk/E2.26

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2.1

345
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves
Width = X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
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</thead>
<tbody>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
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<tr>
<td>025</td>
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<td>030</td>
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<tr>
<td>050</td>
<td>2300.050</td>
<td>2310.050</td>
</tr>
<tr>
<td>057</td>
<td>2300.057</td>
<td>2310.057</td>
</tr>
</tbody>
</table>

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

More information from page 1326

E2.26 | E2i.26-E2.26 | Accessories
Interior separation | Increase cable service life

E2.1 e-chain® with extender crossbars
Guidance for hydraulic hoses

Guidance for hydraulic hoses New
- Safe, space-saving guidance of two hydraulic hoses
- Special solution for heavy machinery, e.g. for elevating work platforms
- Very hose-friendly guidance due to optimised inner contours of the e-chain®

More information: www.igus.co.uk/hydraulicchain

E2.1 e-chain® with extender crossbars - guidance for hydraulic hoses - can be fitted along supporting legs

More information: www.igus.co.uk/hydraulicchain
e-chains® | Series E2.38 | Crossbars openable along the inner radius, from both sides
e-chains® | Series E2.38 | Crossbars openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No. e-chains®</th>
<th>B</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>E2.38</th>
<th>E2.38</th>
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<tr>
<td>E2.38, 050_R.0°</td>
<td>50</td>
<td>67</td>
<td>063</td>
<td>075</td>
<td>100</td>
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<tr>
<td>E2.38, 065_R.0°</td>
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<td>82</td>
<td>063</td>
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<td>E2.38, 075_R.0°</td>
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<td>063</td>
<td>075</td>
<td>100</td>
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<tr>
<td>E2.38, 090_R.0°</td>
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<td>107</td>
<td>063</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>E2.38, 100_R.0°</td>
<td>100</td>
<td>117</td>
<td>063</td>
<td>075</td>
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</tr>
<tr>
<td>E2.38, 125_R.0°</td>
<td>125</td>
<td>142</td>
<td>063</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>E2.38, 150_R.0°</td>
<td>150</td>
<td>167</td>
<td>063</td>
<td>075</td>
<td>100</td>
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<tr>
<td>E2.38, 175_R.0°</td>
<td>175</td>
<td>192</td>
<td>063</td>
<td>075</td>
<td>100</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery times.

Complete Part No. with required radius (R). Example: E2.38.065.100.0

Reduce assembly time - E2.1 e-chain® opener

• igus® e-chain® opener for rapid opening in seconds, available for Series E2.38
• Reduce opening times from 33 to 2 seconds
• Open a long e-chain® section in one go

More information ▶ www.igus.co.uk/E2.1.opener

Aluminium support tray

• Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
• Noise-reducing glide strip integrated as standard
• Easy installation and connection of the e-chain®
• Open design - dirt and debris fall through

More information ▶ From page 1270

E2.1 | E2i.38-E2.38 | Installation dimensions
Unsupported applications | Short travels

Gliding applications | For long travels from 10m to max. 120m

\[ L_k = \frac{S}{2} + K \]

Moving end

Fixed end

Total length of guide trough

\[ H_F = H + 35 \text{mm} \] (with 2.0kg/m fill weight)

The required clearance height: \( H_F = \frac{S}{2} + K \)

Before using series E2.38 on long travels please consult igus®.

Note: Before using series E2.38 on long travels please consult igus®.

For long travels, igus® recommends series E2.38 openable along the outer radius.

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

More information ▶ www.igus.co.uk/E2.1

<table>
<thead>
<tr>
<th>R</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
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<td>176</td>
<td>200</td>
<td>250</td>
<td>300</td>
<td>350</td>
<td>400</td>
<td>450</td>
<td>550</td>
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<tr>
<td>D</td>
<td>172</td>
<td>184</td>
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<td>234</td>
<td>259</td>
<td>284</td>
<td>309</td>
<td>359</td>
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<tr>
<td>K</td>
<td>310</td>
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<td>430</td>
<td>505</td>
<td>585</td>
<td>665</td>
<td>745</td>
<td>900</td>
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</table>

Before using series E2.38 on long travels please consult igus®.
Polymer pivoting | Recommended for unsupported and gliding applications

Polymer locking | Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>Part No.</th>
<th>full set</th>
<th>without tie wrap plate</th>
<th>without tie wrap plate</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>050.5</td>
<td>2605.34PZB</td>
<td>2605.34PZB</td>
<td>2605.13PZB</td>
<td>2605.13PZB</td>
<td>68</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>065.5</td>
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<td>2606.34PZB</td>
<td>2606.12PZB</td>
<td>2606.12PZB</td>
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<td>5</td>
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<tr>
<td>075.5</td>
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<td>2607.34PZB</td>
<td>2607.12PZB</td>
<td>2607.12PZB</td>
<td>93</td>
<td>55</td>
<td>7</td>
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<tr>
<td>090.5</td>
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<td>2609.34PZB</td>
<td>2609.12PZB</td>
<td>2609.12PZB</td>
<td>108</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>100.5</td>
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<td>2610.34PZB</td>
<td>2610.12PZB</td>
<td>2610.12PZB</td>
<td>118</td>
<td>80</td>
<td>10</td>
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<tr>
<td>125.5</td>
<td>2612.34PZB</td>
<td>2612.34PZB</td>
<td>2612.12PZB</td>
<td>2612.12PZB</td>
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<td>105</td>
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<tr>
<td>150.5</td>
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<td>2615.34PZB</td>
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<td>2615.12PZB</td>
<td>168</td>
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<tr>
<td>175.5</td>
<td>2617.34PZB</td>
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<td>2617.12PZB</td>
<td>2617.12PZB</td>
<td>193</td>
<td>155</td>
<td>17</td>
</tr>
</tbody>
</table>

*Full set with tie wrap plate + 10 cable tie wraps, please add index K1. Example: 2606.34PZB K1*

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.

Strain relief e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

- **Standard - for any application**
  - Separator with a wide base for maximum holding force in the e-chain®.

- **For even faster installation**
  - Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

- **For small cables**
  - Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

- **Locks securely in preset increments**
  - Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

- **Horizontal separation**
  - Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.
**E2.1 | E2i.38-E2.38 | Accessories**

**Interior separation | To allow faster filling** New

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

**Split separators**
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

**Lean separators**
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory."

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**More information** ▶️ [www.igus.co.uk/E2.38](http://www.igus.co.uk/E2.38) ▶️ [www.igus.co.uk/E2i.38](http://www.igus.co.uk/E2i.38)

3D CAD, configurators, service life calculation and more ▶️ [www.igus.co.uk/E2.1](http://www.igus.co.uk/E2.1)
Quiet operation, stronger and quicker to open

Series E2i.48 | Crossbars openable along the inner radius, from both sides
Series E2.48 | Crossbars openable along the outer radius, from both sides

Part No. e-chains 
openable along inner radius

| Part No. e-chains 
openable along outer radius | Bi [mm] | Ba [mm] | R Available bend radii | E2.48 [kg/m] | E2i.48 [kg/m] |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E2i.48, 050 R0' R0'</td>
<td>50</td>
<td>72</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.60</td>
<td>≈2.48</td>
</tr>
<tr>
<td>E2.48, 075 R0' R0'</td>
<td>75</td>
<td>97</td>
<td>075 100 125 150 200 250 300</td>
<td>≈1.86</td>
<td>≈1.86</td>
</tr>
<tr>
<td>E2i.48, 100 R0' R0'</td>
<td>100</td>
<td>122</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.00</td>
<td>≈2.00</td>
</tr>
<tr>
<td>E2.48, 115 R0' R0'</td>
<td>115</td>
<td>137</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.06</td>
<td>≈2.06</td>
</tr>
<tr>
<td>E2i.48, 125 R0' R0'</td>
<td>125</td>
<td>147</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.12</td>
<td>≈2.12</td>
</tr>
<tr>
<td>E2.48, 150 R0' R0'</td>
<td>150</td>
<td>172</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.24</td>
<td>≈2.24</td>
</tr>
<tr>
<td>E2i.48, 175 R0' R0'</td>
<td>175</td>
<td>197</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.36</td>
<td>≈2.36</td>
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<tr>
<td>E2.48, 200 R0' R0'</td>
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<td>222</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.48</td>
<td>≈2.48</td>
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<tr>
<td>E2i.48, 225 R0' R0'</td>
<td>225</td>
<td>247</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.60</td>
<td>≈2.60</td>
</tr>
<tr>
<td>E2.48, 250 R0' R0'</td>
<td>250</td>
<td>272</td>
<td>075 100 125 150 200 250 300</td>
<td>≈2.72</td>
<td>≈2.72</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery times.

Complete Part No. with required radius (R). Example: E2.48.075.075.0

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

More information ▶ From page 1264

Unsupported applications | Short travels

Before using series E2i.48 on long travels please consult igus®.

For long travels, igus® recommends series E2.48 openable along the outer radius.

In case of travels between 6 and 10m we recommend an e-chain® with a longer unsupported length.

The required clearance height: \( H_r = H + 40 \text{mm} \) (with 2.5kg/m fill weight)

Before using series E2.48 on long travels please consult igus®.

Gliding applications | For long travels from 10m to max. 150m

Note: Before using series E2.48 on long travels please consult igus®.

For long travels, igus® recommends series E2.48 openable along the outer radius.

In case of travels between 6 and 10m we recommend an e-chain® with a longer unsupported length.

Before using series E2.48 on long travels please consult igus®.
Polymer locking
Polymer pivoting
Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
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<tr>
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<td>3050.34PZB</td>
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<td>075.</td>
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<td>7</td>
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<td>100.</td>
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<td>25</td>
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</tbody>
</table>

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 3275.34PZBK1

Order example
3075.34PZB-A1

A1: to indicate option with brackets pre-fitted with integrated strain relief tiewrap plates
A2: to indicate option with integrated strain relief tiewrap plates Full set
A3: to indicate option with brackets pre-fitted
A4: to indicate option with integrated strain relief tiewrap plates

As standard separators are fitted every 2\text{nd} e-chain link!

- Standard - for any application
  Separator with a wide base for maximum holding force in the e-chain®.

- For even faster installation
  Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

- For small cables
  Separator with a narrow base for a large number of small cables side by side. Serves space in the e-chain®.

- Locks securely in preset increments
  Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

- Horizontal separation
  Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

More information ➤ www.igus.co.uk/E2.48 ➤ www.igus.co.uk/E2i.48
Split separators
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

(*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)
E2/000

All-rounder for a wide range of applications

Advantages of the E2/000 series:
- When a medium-sized, strong system (e-chains®, half e-tubes, completely enclosed e-tubes) is required
- For unsupported lengths up to 3.0m and fill weights up to 13kg/m
- For long travels up to 150m
- If an openable system is required to quickly open from either the left or right
- Various fastening options

When to use another e-chain® series:
- When a stronger, light, cost-effective e-chain®/e-tube is required ▶ E4.1L, page 524
- For very simple applications with fast filling
  ▶ easy chain®, page 198
- When very sealed e-tubes are required
  ▶ E2 R100 e-tube, page 428
  ▶ E2 R e-tube, page 454
  ▶ R2.1 e-tube, page 478
  ▶ RX e-tube, page 502
The all-rounder for a wide range of applications - E2/000

Series E2/000 is the fourth generation in this size. All past experience went into this series: easy and versatile assembly combined with ruggedness - high strength paired with quieter motion - long cable life and many mounting options. The design is consistent across all E2/000 variants. It is the standard product for machinery around the world.

Typical industries and applications
- Material handling
- Construction machinery
- Woodworking machines
- Machine tools
- Glass machines
- Plastic machinery
- Long travel applications in many industries
- Semiconductors
- Theatre, entertainment and amusement parks, etc.
- Vehicles
- General machinery, etc.

Easy assembly: e-chain® links openable on left or right

Long service life: lateral gliding surfaces

For long unsupported lengths: double stop-dog system

Variety of options: e-chain® openable along inner or outer radius from both sides, e-tubes and half e-tubes openable along inner radius from both sides

Electr. conductive ESD e-chains® - several series available from stock

66dB(A) - level determined at the igus® test-lab, v = 1.0m/s unsupported, e.g. series 2600.05.075.0

UL94-V0 classifications upon request

IPA Qualification Certificate - Report IG 1303-640-1: ISO Class 2, according to DIN EN ISO 14644-1 for System E2/000, Series 1500.050.038.0, at v = 0.5 / 1.0 / 2.0m/s

IPA Qualification Certificate - Report IG 0308-295: ISO Class 3, according to DIN EN ISO 14644-1 for System E2/000, Series 2500.05.035.0, at v = 2.0m/s

Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height hi [mm]</th>
<th>Inner width Bi [mm]</th>
<th>Outer width Ba [mm]</th>
<th>Outer height ha [mm]</th>
<th>Bend radius R [mm]</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400</td>
<td>21</td>
<td>15 - 125</td>
<td>28.5 - 138.5</td>
<td>28</td>
<td>035 - 180</td>
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<td>41 - 141</td>
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<td>28</td>
<td>035 - 180</td>
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<td>075 - 180</td>
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<td>41 - 141</td>
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<td>055 - 250</td>
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<td>2.25</td>
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<td>2.75</td>
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<td>70 - 270</td>
<td>64</td>
<td>125 - 300</td>
<td>3.00</td>
<td>416</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.
E2/000 | Features | Accessories

Openable mechanism, openable along the left or right and to 180°

Lean separators enable extremely fast cable filling in several layers

Separators are secure even when e-chain® is open

Half e-tube - fully enclosed along the outer radius. Openable along the inner radius on left or right

Fast closing by hand - secure without additional locking devices

Mechanical opening from the top - rapid opening with a screwdriver or the e-chain® opener

Open E2/000 in a flash with the e-chain® opener ► www.igus.co.uk/E2opener

Strain relief e.g. clamps, tie-wrap plates, nuggets, etc. ► From page 1300

e-chains® with extender crossbars - large increase of the interior space

Aluminium SuperTrough - the standard igus® guide trough ► From page 1208

rot e-chain® E2/000 - rolling instead of gliding. Reduce driving force

Aluminium and steel support tray for support of the lower run ► From page 1264

E2/000 | Technical data | Overview

Technical data

- Speed gliding\(^1\)/acceleration gliding\(^1\) ≤ 10 [m/s] / ≤ 50 [m/s\(^2\)]
- Speed FL\(_G\)/acceleration FL\(_G\) ≤ 20 [m/s] / ≤ 200 [m/s\(^2\)]
- Speed FL\(_B\)/acceleration FL\(_B\) ≤ 3 [m/s] / ≤ 6 [m/s\(^2\)]

Material - permitted temperature °C, igumid G
-40°C / +120°C

Flammability class, igumid G VDE 0304 IIC UL94-HB

FL\(_G\) = unsupported with straight upper run
FL\(_B\) = unsupported with permitted sag

1) For openable series along the inner radius in gliding applications, please consult igus®

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gilding(^1)</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
<th>Unsupported length lower run</th>
</tr>
</thead>
<tbody>
<tr>
<td>1400 / 1500 / 1450 / 1480</td>
<td>≤ 3.9m</td>
<td>≤ 75m</td>
<td>≤ 20m</td>
<td>≤ 2.0m</td>
<td>≤ 0.7m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>2400 / 2500 / 2450 / 2480</td>
<td>≤ 4.25m</td>
<td>≤ 100m</td>
<td>≤ 40m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>2600 / 2700 / 2650 / 2680</td>
<td>≤ 5.5m</td>
<td>≤ 120m</td>
<td>≤ 50m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>3400 / 3500 / 3450 / 3480</td>
<td>≤ 6.0m</td>
<td>≤ 150m</td>
<td>≤ 80m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
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<td>255</td>
<td>≤ 3.6m</td>
<td>≤ 100m</td>
<td>≤ 40m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

1) For openable series along the inner radius in gliding applications, please consult igus®

More information ► www.igus.co.uk/E2000

364

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2000 365
Options with order keys | Examples based on series 2400/2500/2450/2480

<table>
<thead>
<tr>
<th>Standard</th>
<th>Optional noise dampers</th>
<th>NC version - (No Camber) without pretension</th>
<th>Reverse Bend Radius (RBR) for circular movements</th>
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<tbody>
<tr>
<td>2400.03.R.0</td>
<td>2400.03.R.0</td>
<td>2400.03.R.0</td>
<td>2400.03.R1/R2.0</td>
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<tr>
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<td>2500.03.R.0,NC</td>
<td>2500.03.R1/R2.0</td>
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<tr>
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<td>2450.03.R.0,NC</td>
<td>RBR for e-tubes - please consult igumid</td>
<td></td>
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<tr>
<td>2480.03.R.0</td>
<td>2480.03.R.0,NC</td>
<td>RBR for e-tubes - please consult igumid</td>
<td></td>
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<tr>
<td>2500.03.R.0,XXL</td>
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<td>e-chain® operable along the outer radius</td>
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<tr>
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<td>e-tube openable along the inner radius</td>
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Ready to ship* in 24 - 48 hrs. Delivery time* 3-5 business days Delivery time* 2-5 business days Delivery time* several series from stock

Order example | Examples based on series 2500

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:
e-chain® (1.0m) Please indicate e-chain® length or number of links: 1.0m or 22 links 2500.03.100.0
+ Mounting brackets 1 set (with tie-wrap plates) 2030.34PZB+
Interior separation with 2 separators assembled every 21 m link 2 x 25.1.1
Order text: 1 m 2500.03.100.0 + 2030.34PZB+ + 2 x 25.1.1

Order key and colour examples | Examples based on series 2400/2500/2450/2480

Order key

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
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<tr>
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<td>0</td>
<td>Silver</td>
<td>.31</td>
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<tr>
<td>White</td>
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<td>Grey-white</td>
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</tr>
<tr>
<td>Orange</td>
<td>2</td>
<td>Yellow</td>
<td>.14</td>
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</tbody>
</table>

Black e-chains® available from stock. Above special colours upon request.

Magetically detectable plastic e-chains® for the food and tobacco industry

- Igumid DT - automatic detection by all common metal detection systems
- Fragments as small as 1.0mm can be recognised for fragments passing at speeds of 20m/min

More information: www.igus.co.uk/detectable-chain

3D CAD, configurators, service life calculation and more: www.igus.co.uk/E2000
e-chains® 1400 | e-chains® 1400-1500 | Product range

Small pitch, high strength

e-chains® | Series 1400
Crossbars openable along the inner radius, from both sides

Part No. e-chains®
Available bend radii

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
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<th>1500</th>
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<td>1500.020, R0</td>
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<td>33.5</td>
<td>035 038 048 075 100 125 145 180</td>
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<tr>
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<td>1500.025, R0</td>
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<td>138.5</td>
<td>035 038 048 075 100 125 145 180</td>
</tr>
</tbody>
</table>

1) Available as ESD version from stock.
Half-e-tubes, series 1400 and full-e-tube series 1480 ► From page 374

Complete Part No. with required radius (R). Example: 1500.038,100,0

Reduce assembly time - E2/000 e-chain® opener

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi (mm): 20, 30, 50, 60, 80, 100
- Part No. 908.254,1400 for series 1400/1500

More information ► www.igus.co.uk/E2000

ESD - many sizes from stock

- Standardised product made from gummed ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information ► www.igus.co.uk/esd

For long travels, igus® recommends series 1500 openable along the outer radius.

In case of travels between 4 and 10m we recommend an e-chain® with a longer unsupported length.

More information ► www.igus.co.uk/E2000
Polymer locking

Recommended for unsupported and gliding applications

Polymer pivoting

Recommended for unsupported and gliding applications

For vertical hanging and standing applications

For tight installation spaces

Width
<table>
<thead>
<tr>
<th>Part No. full set pivoting with tiewrap plates</th>
<th>Part No. full set locking with tiewrap plates</th>
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<th>B [mm]</th>
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<tr>
<td>080.</td>
<td>14080.12PZ</td>
<td>90.5</td>
<td>8</td>
<td></td>
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<tr>
<td>100.</td>
<td>14100.12PZ</td>
<td>113.5</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>125.</td>
<td>14125.12PZ</td>
<td>138.5</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

Order example

A1 to indicate option with brackets pre-fitted with integrated strain relief tiewrap plates

Part No. full set | A | B | Number of teeth |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>14015.12PZ</td>
<td>28.5</td>
<td>2</td>
</tr>
<tr>
<td>A2</td>
<td>14020.12PZ</td>
<td>33.5</td>
<td>2</td>
</tr>
<tr>
<td>A3</td>
<td>14025.12PZ</td>
<td>36.5</td>
<td>2</td>
</tr>
<tr>
<td>A4</td>
<td>14031.12PZ</td>
<td>41.5</td>
<td>4</td>
</tr>
</tbody>
</table>

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Option: steel mounting bracket, locking. For e-chains® and e-tubes, Part No. 1400.12

- Locking connections
- One part (2-piece) for all e-chain® widths
- Electrically conductive

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2000

More information ► www.igus.co.uk/1400 ► www.igus.co.uk/1500
**E2/000 | e-chains® 1400-1500 | Accessories**

**Interior separation | Increase cable service life**

Previous generation of interior separation with other options ➤ www.igus.co.uk/1400 ➤ www.igus.co.uk/1500

---

**Separator with integrated strain relief teeth**
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 21.1.2. More information ➤ From page 1326

---

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®

Easy installation and connection of the e-chain®

---

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
<td>2300.060</td>
<td>2310.060</td>
</tr>
<tr>
<td>025</td>
<td>2300.025</td>
<td>2310.025</td>
<td>2300.062</td>
<td>2310.062</td>
</tr>
<tr>
<td>035</td>
<td>2300.035</td>
<td>2310.035</td>
<td>2300.065</td>
<td>2310.065</td>
</tr>
<tr>
<td>040</td>
<td>2300.040</td>
<td>2310.040</td>
<td>2300.070</td>
<td>2310.070</td>
</tr>
<tr>
<td>050</td>
<td>2300.050</td>
<td>2310.050</td>
<td>2300.075</td>
<td>2310.075</td>
</tr>
<tr>
<td>057</td>
<td>2300.057</td>
<td>2310.057</td>
<td>2300.080</td>
<td>2310.080</td>
</tr>
</tbody>
</table>

---

**E2/000 series 1400 in aircraft refuelling truck - telescopic crane with six sections**

---

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

---

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

---

**Standard - for any application**
Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

**For side-mounted applications**
Asymmetrical separator, for defined gap distance. No additional spacers required.

**Locks securely in preset increments**
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.
Note: For this series notches only on fixed crossbars, not on openable crossbars

**Horizontal separation**
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2000
**E2/000 | e-tubes 1450-1480 | Product range**

Protection against dirt and swarf

---

**Half e-tubes | Series 1450**
- Crossbars openable along inner radius from both sides, closed along outer radius
- Lids openable along inner radius from both sides, fully enclosed

**Full e-tubes | Series 1480**
- Crossbars openable along inner radius from both sides, closed along outer radius
- Lids openable along inner radius from both sides, fully enclosed

---

<table>
<thead>
<tr>
<th>Part No. half e-tubes openable along the inner radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii [mm]</th>
<th>1450</th>
<th>1480</th>
</tr>
</thead>
<tbody>
<tr>
<td>1450.015.R0</td>
<td>15</td>
<td>28.5</td>
<td>15</td>
<td>1450.015.R0</td>
<td>20</td>
</tr>
</tbody>
</table>

---

**Available bend radii**
- R = 035, 038, 045, 075, 100, 125, 145, 180

---

**Reduce assembly time - E2/000 e-chain® opener**
- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi [mm]: 20, 30, 40, 60, 100
- Part No. 906.254.1400 for series 1400/1500

More information ➤ www.igus.co.uk/E2opener

---

**E2/000 | e-tubes 1450-1480 | Installation dimensions**

Unsupported applications | Short travels

---

**Part No. 908.254.1400**
- Open a long e-chain
- Reduce opening times from 33 to 2 seconds

---

**Protection against dirt and swarf**

- E2/000 series
- Full e-tubes
- Series 1450
- Half e-tubes
- Series 1480

---

**Available bend radii**
- R = 035, 038, 045, 075, 100, 125, 145, 180

---

**The required clearance height:** H = H + 25mm (with 0.5kg/m fill weight)

---

**If a gliding application is required for a long travel, please consult igus®.**

---

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2000

---

More information ➤ www.igus.co.uk/1450 ➤ www.igus.co.uk/1480

---

374
**Polymer pivoting** | Recommended for unsupported applications

**Polymer locking** | Recommended for vertical hanging and standing applications

### Mounting brackets, polymer | Pivoting

#### Width | Part No. full set pivoting with tiewrap plates | Part No. full set locking with tiewrap plates | A (mm) | B (mm) | Number of teeth
--- | --- | --- | --- | --- | ---
015. | 14015.34PZ | 14015.34PZ | – | – | 28.5
020. | 14020.34PZ | 14020.12PZ | – | – | 33.5
025. | 14025.34PZ | 14025.12PZ | – | – | 38.5
038. | 14038.34PZ | 14038.12PZ | – | – | 51.5
050. | 14050.34PZ | 14050.12PZ | – | – | 63.5
068. | 14068.34PZ | 14068.12PZ | – | – | 81.5
080. | 14080.34PZ | 14080.12PZ | – | – | 93.5
100. | 14100.34PZ | 14100.12PZ | – | – | 113.5
125. | 14125.34PZ | 14125.12PZ | – | – | 138.5

#### Order example

**A1** 14038.34PZ

**A2** To include option with brackets pre-fitted. With integrated strain relief tiewrap plates.

**A3** Full set

**A4** Series

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index **A1**, **A2**, **A3** or **A4**.

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options | From page 1300

---

**Option: steel mounting bracket, locking, For e-chains® and e-tubes, Part No. 14000.12**

- **locking connections**
- One part (2-piece) for all e-chain® widths
- Electrically conductive

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options | From page 1300
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Slotted separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

Notch separator for notched crossbar
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Full-width shelf for e-tubes
This option is for applications with many small cables with similar diameters. For full width separation.

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ From page 1270
e-chains® | Series 2400 | Crossbars openable along the inner radius, from both sides

Part No. e-chains® | Crossbars openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No. e-chains®</th>
<th>Bi [mm]</th>
<th>Bå [mm]</th>
<th>R Available bend radii</th>
<th>2400</th>
<th>2500</th>
</tr>
</thead>
<tbody>
<tr>
<td>2400.02.R.0</td>
<td>±25</td>
<td>±41</td>
<td>±0.77</td>
<td>±0.77</td>
<td></td>
</tr>
<tr>
<td>2400.03.R.0</td>
<td>±38</td>
<td>±54</td>
<td>±0.83</td>
<td>±0.83</td>
<td></td>
</tr>
<tr>
<td>2400.05.R.0</td>
<td>±57</td>
<td>±73</td>
<td>±0.91</td>
<td>±0.91</td>
<td></td>
</tr>
<tr>
<td>2400.07.R.0</td>
<td>±77</td>
<td>±93</td>
<td>±1.01</td>
<td>±1.01</td>
<td></td>
</tr>
<tr>
<td>2400.09.R.0</td>
<td>±89</td>
<td>±105</td>
<td>±1.08</td>
<td>±1.08</td>
<td></td>
</tr>
<tr>
<td>2400.10.R.0</td>
<td>±103</td>
<td>±119</td>
<td>±1.15</td>
<td>±1.15</td>
<td></td>
</tr>
<tr>
<td>2400.12.R.0</td>
<td>±125</td>
<td>±141</td>
<td>±1.22</td>
<td>±1.22</td>
<td></td>
</tr>
</tbody>
</table>

Before using series 2400 on long travels please consult igus®.

The required clearance height: \( H_e = H + 25 \text{mm} \) (with 1.5kg/m fill weight)

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 100m**

\[ L_e = S/2 + K_2 \]

Note: before using series 2400/2450/2480 on long travels please consult igus®.

For long travels, igus® recommends series 2500 openable along the outer radius.

In case of travels between 4 and 10m we recommend an e-chain® with a longer unsupported length.

<table>
<thead>
<tr>
<th>R</th>
<th>055</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>225</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>( H_e )</td>
<td>110</td>
<td>150</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>( D_e )</td>
<td>142</td>
<td>162</td>
<td>380</td>
<td>440</td>
<td>590</td>
<td>755</td>
<td>950</td>
<td>1,040</td>
<td>1,130</td>
</tr>
<tr>
<td>( K_2 )</td>
<td>265</td>
<td>330</td>
<td>644</td>
<td>736</td>
<td>1,012</td>
<td>1,242</td>
<td>1,472</td>
<td>1,610</td>
<td>1,794</td>
</tr>
<tr>
<td>( \Delta C_L )</td>
<td>–</td>
<td>–</td>
<td>204</td>
<td>244</td>
<td>364</td>
<td>504</td>
<td>674</td>
<td>754</td>
<td>804</td>
</tr>
</tbody>
</table>

Before using series 2400 on long travels please consult igus®.
Polymer pivoting
Recommended for unsupported and gliding applications

Polymer locking
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting with/without tiewrap plate</th>
<th>Part No. full set locking with/without tiewrap plate</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>07.</td>
<td>2070.34PZB+ 2070.34PZ+ 2070.12PZB+ 2070.12PZ</td>
<td>2070.34PZ+ 2070.12PZ+ 2070.12PZ+ 2070.12PZ+</td>
<td>64 8</td>
</tr>
<tr>
<td>09.</td>
<td>2090.34PZB+ 2090.34PZ+ 2090.12PZB+ 2090.12PZ</td>
<td>2090.34PZ+ 2090.12PZ+ 2090.12PZ+ 2090.12PZ+</td>
<td>77 9</td>
</tr>
<tr>
<td>10.</td>
<td>2100.34PZB+ 2100.34PZ+ 2100.12PZB+ 2100.12PZ</td>
<td>2100.34PZ+ 2100.12PZ+ 2100.12PZ+ 2100.12PZ+</td>
<td>90 10</td>
</tr>
<tr>
<td>12.</td>
<td>2125.34PZB+ 2125.34PZ+ 2125.12PZB+ 2125.12PZ</td>
<td>2125.34PZ+ 2125.12PZ+ 2125.12PZ+ 2125.12PZ+</td>
<td>112 12</td>
</tr>
</tbody>
</table>

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 2020.34PZBK1+

---

KMA pivoting
Recommended for unsupported and gliding applications

KMA locking
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting with/without tiewrap plate</th>
<th>Part No. full set KMA locking with/without tiewrap plate</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>02.</td>
<td>24001.02.12ZB 24001.02.12 24101.02.12ZB 24101.02.12</td>
<td>24001.02.12ZB 24001.02.12 24101.02.12ZB 24101.02.12</td>
<td>36 44 2</td>
</tr>
<tr>
<td>03.</td>
<td>24001.03.12ZB 24001.03.12 24101.03.12ZB 24101.03.12</td>
<td>24001.03.12ZB 24001.03.12 24101.03.12ZB 24101.03.12</td>
<td>49 57 4</td>
</tr>
<tr>
<td>05.</td>
<td>24001.05.12ZB 24001.05.12 24101.05.12ZB 24101.05.12</td>
<td>24001.05.12ZB 24001.05.12 24101.05.12ZB 24101.05.12</td>
<td>68 76 6</td>
</tr>
<tr>
<td>07.</td>
<td>24001.07.12ZB 24001.07.12 24101.07.12ZB 24101.07.12</td>
<td>24001.07.12ZB 24001.07.12 24101.07.12ZB 24101.07.12</td>
<td>88 96 7</td>
</tr>
<tr>
<td>09.</td>
<td>24001.09.12ZB 24001.09.12 24101.09.12ZB 24101.09.12</td>
<td>24001.09.12ZB 24001.09.12 24101.09.12ZB 24101.09.12</td>
<td>100 108 9</td>
</tr>
<tr>
<td>10.</td>
<td>24001.10.12ZB 24001.10.12 24101.10.12ZB 24101.10.12</td>
<td>24001.10.12ZB 24001.10.12 24101.10.12ZB 24101.10.12</td>
<td>114 122 10</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

---

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/2400 ► www.igus.co.uk/2500
E2/000 | e-chains® 2400-2500 | Accessories

Interior separation | Increase cable service life

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

- **Standard separator, wide base**
  - Unassembled: 25.1
  - Assembled: 25.1.1

- **Separator, narrow top**
  - Unassembled: 25.2
  - Assembled: 25.2.1

- **Separator, asymmetrical**
  - Unassembled: 25.3
  - Assembled: 25.3.1

- **Notch separator for notched crossbar**
  - Unassembled: 25.5
  - Assembled: 25.5.1

- **Shelf, lockable**
  - Unassembled: 2310.X
  - Assembled: 2310.X

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**

Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

**For side-mounted applications**

Asymmetrical separator, for defined gap distance. No additional spacers required.

**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications. Note: for this series notches only on fixed crossbars, not on openable crossbars.

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Increase cable service life**

e-chain® with extender crossbars - large increase of the interior space for the smooth guiding of large hoses. Suitable for hoses with a maximum outer diameter of 36mm.

**Separator with integrated strain relief teeth**

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. e-chains® separator crossbars
- Operable along inner radius
- Operable along outer radius

For further information please visit www.igus.co.uk/E2000
The inner radius openable along 
Part No. half e-tubes
For the 055 radius the e-tube is not completely enclosed. Please consult igus
*Radius available upon request. Please consult igus

| Half e-tubes | Series 2450 | Crossbars openable along inner radius from both sides, closed along outer radius |
| Full e-tubes | Series 2480 | Lids openable along inner radius from both sides, fully enclosed |

<table>
<thead>
<tr>
<th>Part No. half e-tubes openable along the inner radius</th>
<th></th>
<th>Available bend radii</th>
<th>2450</th>
<th>2480</th>
</tr>
</thead>
<tbody>
<tr>
<td>2450.02..R.0</td>
<td>Bi [mm]</td>
<td>Ba [mm]</td>
<td>R</td>
<td>[mm]</td>
</tr>
<tr>
<td>2460.02..R.0</td>
<td>25</td>
<td>41</td>
<td>055</td>
<td>075</td>
</tr>
<tr>
<td>2450.03..R.0</td>
<td>2460.03..R.0</td>
<td>38</td>
<td>54</td>
<td>055</td>
</tr>
<tr>
<td>2450.05..R.0</td>
<td>2460.05..R.0</td>
<td>57</td>
<td>73</td>
<td>055</td>
</tr>
<tr>
<td>2450.07..R.0</td>
<td>2460.07..R.0</td>
<td>77</td>
<td>93</td>
<td>055</td>
</tr>
<tr>
<td>2450.09..R.0</td>
<td>2460.09..R.0</td>
<td>89</td>
<td>105</td>
<td>055</td>
</tr>
<tr>
<td>2450.10..R.0</td>
<td>2460.10..R.0</td>
<td>103</td>
<td>119</td>
<td>055</td>
</tr>
<tr>
<td>2450.12..R.0</td>
<td>2460.12..R.0</td>
<td>125</td>
<td>141</td>
<td>055</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for price and delivery time. 
For the 055 radius the e-tube is not completely enclosed. Please consult igus®. 
Complete Part No. with required radius (R). Example: 2450.03.100.0

Reduce assembly time - E2/000 e-chain® opener
- Reduce opening times from 33 to 2 seconds 
- Open a long e-chain® section in one go 
- For widths Bi (mm): 05, 07, 09 
- Part No. 906.254.2400 for series 2450 
More information ► www.igus.co.uk/E2opener

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2000

If a gliding application is required for a long travel, please consult igus®.
Polymer locking
Polymer pivoting
Full set with tiewrap plate + 10 cable tiewraps, please add index 02.

Recommended for unsupported applications
Recommended for vertical hanging and standing applications

Width | Part No. full set pivoting with tiewrap plates | Part No. full set pivoting without tiewrap plate | A | Number of teeth
--- | --- | --- | --- | ---
03. | 2020.34PZB+ | 2020.12PZB+ | 2030.12PZB+ | 25 | 4
05. | 2050.34PZB+ | 2050.12PZB+ | 2050.12PZB+ | 44 | 6
07. | 2070.34PZB+ | 2070.12PZB+ | 2070.12PZB+ | 64 | 8
09. | 2090.34PZB+ | 2090.12PZB+ | 2090.12PZB+ | 77 | 9
10. | 2100.34PZB+ | 2100.12PZB+ | 2100.12PZB+ | 90 | 10
12. | 2125.34PZB+ | 2125.12PZB+ | 2125.12PZB+ | 112 | 12

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 2020.34PZBK+.

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.

![Diagram of polymer pivoting and locking](image)

KMA pivoting
KMA locking
Recommended for unsupported applications
Recommended for vertical hanging and standing applications

Width | Part No. full set KMA pivoting with tiewrap plate | Part No. full set KMA pivoting without tiewrap plate | A | Number of teeth
--- | --- | --- | --- | ---
02. | 24501.00.12ZB | 24501.00.12ZB | 49 | 11
03. | 24501.03.12ZB | 24501.03.12ZB | 66 | 14
05. | 24501.05.12ZB | 24501.05.12ZB | 83 | 17
07. | 24501.07.12ZB | 24501.07.12ZB | 100 | 20
09. | 24501.09.12ZB | 24501.09.12ZB | 117 | 23
10. | 24501.10.12ZB | 24501.10.12ZB | 134 | 26
12. | 24501.12.12ZB | 24501.12.12ZB | 151 | 29

![Diagram of KMA mounting brackets](image)

KMA mounting brackets | Attachment from any side | Pivoting | Locking

Option: steel mounting bracket, pivoting. For e-chains® and e-tubes, Part No. 2000.32

- Pivoting connections
- One part (2-piece) for all e-chain® widths
- Electrically conductive

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options is available from page 1300.
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

### Slotted separator
Vertical separation in e-chains®. The slot allows basic vertical/horizontal shelving arrangements.

### Notch separator for notched crossbar
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications. Note: For this series notches only on fixed crossbars, not on openable crossbars/lids.

### Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

### Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

### Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

**Part No. half e-tubes extender crossbar openable along the inner radius**

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2450.05</td>
<td>2450.10</td>
<td>75  100  125  150  175  200  225  250</td>
</tr>
</tbody>
</table>

**Complete Part No. with required radius (R). Example:** 2450.05D36.100.0

**More information** From page 1326

---

**Full-width shelves**

| Width = X [mm] | X [mm] un assembled | X [mm] assembled | }
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>025</td>
<td>220.25</td>
<td>221.25</td>
</tr>
<tr>
<td>038</td>
<td>220.38</td>
<td>221.38</td>
</tr>
<tr>
<td>057</td>
<td>220.57</td>
<td>221.57</td>
</tr>
</tbody>
</table>
e-chains® Series 2600  
Crossbars openable along the inner radius, from both sides

- Part No. e-chains® openable along inner radius
  - 2600.05.R,0
  - 2700.05.R,0

- Part No. e-chains® openable along outer radius
  - 2600.06.R,0
  - 2700.06.R,0

- Available bend radii
  - Bi, Ba (in mm)

**Part No. e-chains®**

- 2600.05.R,0
- 2700.05.R,0
- 2600.06.R,0
- 2700.06.R,0
- 2600.07.R,0
- 2700.07.R,0
- 2600.09.R,0
- 2700.09.R,0
- 2600.10.R,0
- 2700.10.R,0
- 2600.12.R,0
- 2700.12.R,0
- 2600.15.R,0
- 2700.15.R,0
- 2600.17.R,0
- 2700.17.R,0

**Bi, Ba Available bend radii**

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>66</td>
</tr>
<tr>
<td>65</td>
<td>81</td>
</tr>
<tr>
<td>75</td>
<td>91</td>
</tr>
<tr>
<td>90</td>
<td>106</td>
</tr>
<tr>
<td>100</td>
<td>116</td>
</tr>
<tr>
<td>125</td>
<td>141</td>
</tr>
<tr>
<td>150</td>
<td>166</td>
</tr>
<tr>
<td>175</td>
<td>194</td>
</tr>
</tbody>
</table>

**Available as ESD version from stock**

- Before using series 2600 on long travels please consult igus®

**Reduce assembly time - E2/000 e-chain® opener**

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi (in mm): 06, 07, 09, 10
- Part No. 908.254.2600 for series 2600/2700

**ESD - many sizes from stock**

- Standardised product made from igumid® ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

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**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

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**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

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In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

**E2/000 | e-chains® 2600-2700 | Product range**

**Medium inner height, high strength**

**e-chains® 2600-2700 | Installation dimensions**

**Unsupported applications | Short travels**

**Gliding applications | For long travels from 10m to max. 120m**

**Notes:** before using series 2600/2650/2680 on long travels please consult igus®

**For long travels, igus® recommends series 2700 openable along the outer radius.**

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.
E2/000 | e-chains® 2600-2700 | Accessories

Mounting brackets, polymer | Pivoting | Locking

**Polymer pivoting**
Recommended for unsupported and gliding applications

**Polymer locking**
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting</th>
<th>Part No. full set locking</th>
<th>A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.92</td>
<td>2605.34PZB</td>
<td>2605.13PZB</td>
<td>30</td>
<td>5</td>
</tr>
<tr>
<td>06.92</td>
<td>2606.34PZB</td>
<td>2606.12PZB</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>07.92</td>
<td>2607.34PZB</td>
<td>2607.12PZB</td>
<td>55</td>
<td>7</td>
</tr>
<tr>
<td>09.92</td>
<td>2609.34PZB</td>
<td>2609.12PZB</td>
<td>70</td>
<td>9</td>
</tr>
<tr>
<td>10.92</td>
<td>2610.34PZB</td>
<td>2610.12PZB</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>12.92</td>
<td>2612.34PZB</td>
<td>2612.12PZB</td>
<td>105</td>
<td>15</td>
</tr>
<tr>
<td>15.92</td>
<td>2615.34PZB</td>
<td>2615.12PZB</td>
<td>130</td>
<td>15</td>
</tr>
<tr>
<td>17.92</td>
<td>2617.34PZB</td>
<td>2617.12PZB</td>
<td>155</td>
<td>17</td>
</tr>
</tbody>
</table>

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 2605.34PZBK1

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.92</td>
<td>2601.05.12.C</td>
<td>2601.05.12.C</td>
<td>58</td>
<td>69</td>
</tr>
<tr>
<td>06.92</td>
<td>2601.06.12.C</td>
<td>2601.06.12.C</td>
<td>73</td>
<td>84</td>
</tr>
<tr>
<td>15.92</td>
<td>2601.15.12.C</td>
<td>2601.15.12.C</td>
<td>158</td>
<td>169</td>
</tr>
</tbody>
</table>

KMA pivoting to one end: moving end 26101...3 / fixed end 26101...4

**KMA mounting brackets**
Recommended for unsupported and gliding applications

**KMA locking**
Recommended for vertical hanging and standing applications

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/2600 ► www.igus.co.uk/2700
Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time
("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!
e-chains® with extender crossbars - large increase of the interior space for the smooth guiding of large hoses.

Suitable for hoses with a maximum outer diameter of 58mm.

<table>
<thead>
<tr>
<th>Part No. e-chains® extender crossbars openable along inner radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2600.07 D58 ,R.0</td>
<td>75</td>
<td>91</td>
<td>063*</td>
</tr>
<tr>
<td>2600.12 D58 ,R.0</td>
<td>125</td>
<td>141</td>
<td>063*</td>
</tr>
<tr>
<td>2600.15 D58 ,R.0</td>
<td>150</td>
<td>166</td>
<td>063*</td>
</tr>
</tbody>
</table>

*Radius 063 and 075 only possible with e-chains® series 2700, openable along outer radius

Complete Part No. with required radius (R). Example: 2700.15D58.100,0

---

**Separator with integrated strain relief teeth**
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 262.Z. More information ★ From page 1326

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ★ From page 1270

---

**Interior separation for e-chains® with extender crossbars**

Separator e-chain® with extender crossbars unassembled 35/62.1 assembled 35/62.1.1

Shelf, lockable unassembled 3200.X assembled 3210.X

**Standard separator, wide base**
Separator with a wide base for maximum holding force in the e-chain®. As standard separators are fitted every 2nd e-chain® link!

**Horizontal separation**
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

Telescopic loader - an E2/000 e-chain® guides the hydraulic hoses via the telescopic mast to the attachment
**Protection against dirt and swarf**

| Part No. half e-tubes operable along the inner radius | Bi [mm] | Ba [mm] | R Available bend radii
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2650.05.R.0</td>
<td>50</td>
<td>66</td>
<td>063°</td>
</tr>
<tr>
<td>2650.06.R.0</td>
<td>65</td>
<td>81</td>
<td>063°</td>
</tr>
<tr>
<td>2650.07.R.0</td>
<td>75</td>
<td>91</td>
<td>063°</td>
</tr>
<tr>
<td>2650.09.R.0</td>
<td>90</td>
<td>106</td>
<td>063°</td>
</tr>
<tr>
<td>2650.10.R.0</td>
<td>100</td>
<td>116</td>
<td>063°</td>
</tr>
<tr>
<td>2650.12.R.0</td>
<td>125</td>
<td>141</td>
<td>063°</td>
</tr>
<tr>
<td>2650.15.R.0</td>
<td>150</td>
<td>166</td>
<td>063°</td>
</tr>
<tr>
<td>2650.17.R.0</td>
<td>175</td>
<td>194</td>
<td>063°</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus®.

---

**Unsupported length**

\[ L_g = L + K \]

![Image](image-url)

**Reduce assembly time - E2/000 e-chain® opener**

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi [mm]: 06, 07, 09, 10
- Part No. 908.254.2600 for series 2650

More information [www.igus.co.uk/E2opener](http://www.igus.co.uk/E2opener)

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**More information**

- [www.igus.co.uk/2650](http://www.igus.co.uk/2650)
- [www.igus.co.uk/2680](http://www.igus.co.uk/2680)

---

**Installation dimensions**

**Unsupported applications**

- Short travels

---

**If a gliding application is required for a long travel, please consult igus®.**
Polymer pivoting  
Polymer locking

**Recommended for unsupported applications**

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set pivoting</th>
<th>Part No. full set locking</th>
<th>A</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>with tiewrap plates</td>
<td>without tiewrap plate</td>
<td>with tiewrap plates</td>
<td>without tiewrap plate</td>
</tr>
<tr>
<td>05.</td>
<td>2605.34PZB</td>
<td>2605.34PZ</td>
<td>2605.13PZB</td>
<td>2605.13PZ</td>
</tr>
<tr>
<td>06.</td>
<td>2606.34PZB</td>
<td>2606.34PZ</td>
<td>2606.12PZB</td>
<td>2606.12PZ</td>
</tr>
<tr>
<td>07.</td>
<td>2607.34PZB</td>
<td>2607.34PZ</td>
<td>2607.12PZB</td>
<td>2607.12PZ</td>
</tr>
<tr>
<td>09.</td>
<td>2609.34PZB</td>
<td>2609.34PZ</td>
<td>2609.12PZB</td>
<td>2609.12PZ</td>
</tr>
<tr>
<td>10.</td>
<td>2610.34PZB</td>
<td>2610.34PZ</td>
<td>2610.12PZB</td>
<td>2610.12PZ</td>
</tr>
<tr>
<td>12.</td>
<td>2612.34PZB</td>
<td>2612.34PZ</td>
<td>2612.12PZB</td>
<td>2612.12PZ</td>
</tr>
<tr>
<td>15.</td>
<td>2615.34PZB</td>
<td>2615.34PZ</td>
<td>2615.12PZB</td>
<td>2615.12PZ</td>
</tr>
<tr>
<td>17.</td>
<td>2617.34PZB</td>
<td>2617.34PZ</td>
<td>2617.12PZB</td>
<td>2617.12PZ</td>
</tr>
</tbody>
</table>

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 2605.34PZBK1

**Strain relief**
e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Table:
<table>
<thead>
<tr>
<th>Shelves Width = X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200,050</td>
<td>3210,050</td>
</tr>
<tr>
<td>075</td>
<td>3200,075</td>
<td>3210,075</td>
</tr>
<tr>
<td>100</td>
<td>3200,100</td>
<td>3210,100</td>
</tr>
<tr>
<td>115</td>
<td>3200,115</td>
<td>3211,15</td>
</tr>
</tbody>
</table>

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time
("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

Standard separators
As standard separators are fitted every 2nd e-chain® link!
E2/000 | e-tubes 2650 | Further accessories

e-chains® with extender crossbar | Product Range

Part No. half e-tubes

<table>
<thead>
<tr>
<th>Extender crossbar openable along the inner radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2650.07 D58 , R.0</td>
<td>75</td>
<td>91</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>2650.12 D58 , R.0</td>
<td>125</td>
<td>141</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>2650.15 D58 , R.0</td>
<td>150</td>
<td>166</td>
<td>100</td>
<td>125</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 2650.15D58.100.0

Interior separation for e-chains® with extender crossbars

Separator e-chain® with extender crossbars

- Unassembled: 35/62.1
- Assembled: 35/62.1.1

Horizontal separation

- Unassembled: 3200.X
- Assembled: 3210.X

Standard separator, wide base

Separator with a wide base for maximum holding force in the e-chain®. As standard separators are fitted every 2nd e-chain® link!

- Flat knitting machine - the igus® E2/000 system is reliable even at high accelerations and for millions of cycles

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information | From page 1270

More information | www.igus.co.uk/2650 | www.igus.co.uk/2680

3D CAD, configurators, service life calculation and more | www.igus.co.uk/E2000
e-chains® 3400-3500

**Series 3400**
- Crossbars openable along the inner radius, from both sides

**Series 3500**
- Crossbars openable along the outer radius, from both sides

---

**Part No. e-chains openable along inner radius**

<table>
<thead>
<tr>
<th>Part No. e-chains</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>3400.050.R0</td>
<td>50</td>
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<td>3400.250.R0</td>
<td>250</td>
<td>270</td>
<td>075 100 125 150 200 250 300</td>
</tr>
</tbody>
</table>

**Part No. e-chains openable along outer radius**

<table>
<thead>
<tr>
<th>Part No. e-chains</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>3500.050.R0</td>
<td>50</td>
<td>70</td>
<td>075 100 125 150 200 250 300</td>
</tr>
<tr>
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<td>95</td>
<td>075 100 125 150 200 250 300</td>
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<td>3500.100.R0</td>
<td>100</td>
<td>120</td>
<td>075 100 125 150 200 250 300</td>
</tr>
<tr>
<td>3500.115.R0</td>
<td>115</td>
<td>135</td>
<td>075 100 125 150 200 250 300</td>
</tr>
<tr>
<td>3500.125.R0</td>
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<td>075 100 125 150 200 250 300</td>
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<td>3500.150.R0</td>
<td>150</td>
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<td>3500.175.R0</td>
<td>175</td>
<td>195</td>
<td>075 100 125 150 200 250 300</td>
</tr>
<tr>
<td>3500.200.R0</td>
<td>200</td>
<td>220</td>
<td>075 100 125 150 200 250 300</td>
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<tr>
<td>3500.225.R0</td>
<td>225</td>
<td>245</td>
<td>075 100 125 150 200 250 300</td>
</tr>
<tr>
<td>3500.250.R0</td>
<td>250</td>
<td>270</td>
<td>075 100 125 150 200 250 300</td>
</tr>
</tbody>
</table>

Half-e-tubes, series 3400 and full-e-tube series 3480 [From page 416]

Complete Part No. with required radius (R), Example: 3500.075.200.0

---

**Reduce assembly time - E2/000 e-chain® opener**

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi (mm): 050, 075, 100, 115
- Part No. 908.254.3400 for series 3400/3500

More information [www.igus.co.uk/E2opener](http://www.igus.co.uk/E2opener)

---

**Unsupported applications**

Before using series 3400 on long travels please consult igus®.

For long travels between 6 and 10m we recommend an e-chain®

- Bi 2
- Bi 6
- Bi 10
- Bi 15
- Bi 20
- Bi 25
- Bi 30
- Bi 35
- Bi 40

Note: Before using series 3400/3450/3480 on long travels please consult igus®.

For long travels, igus® recommends series 3500 openable along the outer radius.

In case of travels between 6 and 10m we recommend an e-chain® with a longer unsupported length.

**Gliding applications**

For long travels from 10m to max. 150m

- Lk = S/2 + K2

Note: Before using series 3400/3450/3480 on long travels please consult igus®.

For long travels, igus® recommends series 3500 openable along the outer radius.

In case of travels between 6 and 10m we recommend an e-chain® with a longer unsupported length.

**Reduced assembly time - E2/000 e-chain® opener**

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi (mm): 050, 075, 100, 115
- Part No. 908.254.3400 for series 3400/3500

More information [www.igus.co.uk/E2opener](http://www.igus.co.uk/E2opener)

---

**Reduce assembly time - E2/000 e-chain® opener**

- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi (mm): 050, 075, 100, 115
- Part No. 908.254.3400 for series 3400/3500

More information [www.igus.co.uk/E2opener](http://www.igus.co.uk/E2opener)
Polymer pivoting
Recommended for unsupported and gliding applications

Polymer locking
Recommended for vertical hanging and standing applications

Width Index Part No. full set pivoting with tiewrap plate Part No. full set locking with tiewrap plate A Number of Teeth
050. 3050.34PZB 3050.12PZ 3050.12PZ 28 7
075. 3075.34PZB 3075.12PZ 3075.12PZ 53 11
100. 3100.34PZB 3100.12PZ 3100.12PZ 78 10
115. 3115.34PZB 3115.12PZ 3115.12PZ 93 11
125. 3125.34PZB 3125.12PZ 3125.12PZ 103 12
150. 3150.34PZB 3150.12PZ 3150.12PZ 128 15
175. 3175.34PZB 3175.12PZ 3175.12PZ 153 17
200. 3200.34PZB 3200.12PZ 3200.12PZ 178 20
225. 3225.34PZB 3225.12PZ 3225.12PZ 203 22
250. 3250.34PZB 3250.12PZ 3250.12PZ 228 25

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 3250.34PZB K1

KMA pivoting
Recommended for unsupported and gliding applications

KMA locking
Recommended for vertical hanging and standing applications

Width Index Part No. full set KMA pivoting with C-profile Part No. full set KMA locking with C-profile A B
050. 3401.050.12.C 3401.050.12 3410.050.12 3410.050.12 63 74
075. 3401.075.12.C 3401.075.12 3410.075.12 3410.075.12 88 99
100. 3401.100.12.C 3401.100.12 3410.100.12 3410.100.12 113 124
115. 3401.115.12.C 3401.115.12 3410.115.12 3410.115.12 128 139
150. 3401.150.12.C 3401.150.12 3410.150.12 3410.150.12 163 174
175. 3401.175.12.C 3401.175.12 3410.175.12 3410.175.12 188 199
250. 3401.250.12.C 3401.250.12 3410.250.12 3410.250.12 263 274

KMA pivoting to one end: moving end 3401/3410 ... 1 / fixed end 3401/3410 ... 2

Part No. full set KMA pivoting with C-profile Part No. full set KMA locking with C-profile A B
3401.050.12.C 3401.050.12 3410.050.12 3410.050.12 63 74
3401.075.12.C 3401.075.12 3410.075.12 3410.075.12 88 99
3401.100.12.C 3401.100.12 3410.100.12 3410.100.12 113 124
3401.115.12.C 3401.115.12 3410.115.12 3410.115.12 128 139
3401.150.12.C 3401.150.12 3410.150.12 3410.150.12 163 174
3401.175.12.C 3401.175.12 3410.175.12 3410.175.12 188 199
3401.250.12.C 3401.250.12 3410.250.12 3410.250.12 263 274

Strain relief
E.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/3400 ► www.igus.co.uk/3500
Previous generation of interior separation with other options: www.igus.co.uk/3400 www.igus.co.uk/3500

E2/000 | e-chains® 3400-3500 | Accessories

Interior separation | Increase cable service life

As standard separators are fitted every 2nd e-chain® link!

No lateral gap to side links necessary.

| Standard separator, wide base | unassembled 45.1 | assembled 45.1.1 |
| Separator, narrow top | unassembled 45.2 | assembled 45.2.1 |
| Separator, narrow | unassembled 45.3 | assembled 45.3.1 |
| Separator, asymmetrical | unassembled 45.4 | assembled 45.4.1 |
| Notch separator for notched crossbar | unassembled 45.5 | assembled 45.5.1 |
| Shelf, lockable | unassembled 3200.X | assembled 3210.X |

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves
Weight = X [mm]

X | unassembled | assembled | X | unassembled | assembled | X | unassembled | assembled
---|---|---|---|---|---|---|---|---
050 | 3200.050 | 3210.050 | 125 | 3200.125 | 3210.125 | 225 | 3200.225 | 3210.225
075 | 3200.075 | 3210.075 | 150 | 3200.150 | 3210.150 | 250 | 3200.250 | 3210.250
100 | 3200.100 | 3210.100 | 175 | 3200.175 | 3210.175 |
115 | 3200.115 | 3210.115 | 200 | 3200.200 | 3210.200 |

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50% assembly time
(“Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

To allow faster filling: New

Increase cable service life

Lean separator vs. standard separator - measured on a 4m long e-chain®

Quickly, save up to 50% assembly time

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

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Quickly, save up to 50% assembly time

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.
Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws
Part No. 301.Z. More information ➤ From page 1326

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ➤ From page 1264

Interior separation for e-chains® with extender crossbars

Standard separator, wide base
Separator with a wide base for maximum holding force in the e-chain®. As standard separators are fitted every 2nd e-chain® link!

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Strong and space-saving E2/000 e-chain® for different axes of a machine
E2/000 | e-tubes 3450-3480 | Product range
Protection against dirt and swarf

Half e-tubes
Full e-tubes
Series 3450
Series 3480
Crossbars openable along inner radius from both sides, closed along outer radius.
Lids openable along inner radius from both sides, fully enclosed.

<table>
<thead>
<tr>
<th>Part No. half e-tubes openable along the inner radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>3450 [kg/m]</th>
<th>3480 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450.050.R0</td>
<td>50</td>
<td>70</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
<tr>
<td>3450.075.R0</td>
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<td>95</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
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<tr>
<td>3450.100.R0</td>
<td>100</td>
<td>120</td>
<td>075°</td>
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<td>125</td>
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<tr>
<td>3450.115.R0</td>
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<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
<tr>
<td>3450.125.R0</td>
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<td>075°</td>
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<td>125</td>
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<td>125</td>
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<td>195</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
<tr>
<td>3450.200.R0</td>
<td>200</td>
<td>220</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
<tr>
<td>3450.225.R0</td>
<td>225</td>
<td>245</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
<tr>
<td>3450.250.R0</td>
<td>250</td>
<td>270</td>
<td>075°</td>
<td>100°</td>
<td>125</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for price and delivery time.
Radius 075°, 100° the e-tube is not completely enclosed. Please consult igus®.

Part No. full e-tubes openable along the inner radius:

- 3480.050.R0
- 3480.075.R0
- 3480.100.R0
- 3480.115.R0
- 3480.125.R0
- 3480.150.R0
- 3480.175.R0
- 3480.200.R0
- 3480.225.R0
- 3480.250.R0

More information | www.igus.co.uk/E2opener

Reduce assembly time - E2/000 e-chain® opener
- Reduce opening times from 33 to 2 seconds
- Open a long e-chain® section in one go
- For widths Bi [mm]: 050, 075, 100, 115
- Part No. 908.254.3400 for series 3450

More information | www.igus.co.uk/E2opener

E2/000 | e-tubes 3450-3480 | Installation dimensions
Unsupported applications | Short travels

Supporting applications for Series 3450/3480 on long travels:

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>45</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch [mm/lin]</td>
<td>67</td>
</tr>
<tr>
<td>Links/n</td>
<td>15</td>
</tr>
</tbody>
</table>

The required clearance height: H = H + 40mm (with 2.5kg/m fill weight)


If a gliding application is required for a long travel, please consult igus®.

More information | www.igus.co.uk/3450
More information | www.igus.co.uk/3480

www.igus.co.uk/E2000
Moving end: 3 ... 3PZ(B) / 3 ... 1PZ(B)
Fixed end: 3 ... 4PZ(B) / 2 ... 2PZ(B)

**Polymer pivoting**

Recommended for unsupported applications

**Polymer locking**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set pivoting with tiwrap plates</th>
<th>Part No. full set locking with tiwrap plates</th>
<th>A Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3050.34PZB</td>
<td>3050.12PZB</td>
<td>28 5</td>
</tr>
<tr>
<td>075</td>
<td>3075.34PZB</td>
<td>3075.12PZB</td>
<td>53 7</td>
</tr>
<tr>
<td>100</td>
<td>3100.34PZB</td>
<td>3100.12PZB</td>
<td>78 10</td>
</tr>
<tr>
<td>115</td>
<td>3115.34PZB</td>
<td>3115.12PZB</td>
<td>93 11</td>
</tr>
<tr>
<td>125</td>
<td>3125.34PZB</td>
<td>3125.12PZB</td>
<td>103 12</td>
</tr>
<tr>
<td>150</td>
<td>3150.34PZB</td>
<td>3150.12PZB</td>
<td>128 15</td>
</tr>
<tr>
<td>175</td>
<td>3175.34PZB</td>
<td>3175.12PZB</td>
<td>153 17</td>
</tr>
<tr>
<td>200</td>
<td>3200.34PZB</td>
<td>3200.12PZB</td>
<td>178 20</td>
</tr>
<tr>
<td>225</td>
<td>3225.34PZB</td>
<td>3225.12PZB</td>
<td>203 22</td>
</tr>
<tr>
<td>250</td>
<td>3250.34PZB</td>
<td>3250.12PZB</td>
<td>228 25</td>
</tr>
</tbody>
</table>

Full set with tiwrap plate + 10 cable tiwrows, please add index K1. Example: 350P.34PZBK1

**KMA locking**

Recommended for unsupported applications

**KMA pivoting**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting* with C-profile</th>
<th>Part No. full set KMA pivoting* without C-profile</th>
<th>Part No. full set KMA locking* with C-profile</th>
<th>Part No. full set KMA locking* without C-profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>100.</td>
<td>3450.3480 .100.12.C</td>
<td>3450.3480 .100.12</td>
<td>3450.3480 .100.12.C</td>
<td>3450.3480 .100.12</td>
</tr>
</tbody>
</table>

1) KMA pivoting Part No. 3450 for half e-tube series 3450 / KMA pivoting Part No. 3480 for full e-tube series 3480

2) KMA locking Part No. 34510 for half e-tube series 3450 / KMA locking Part No. 34810 for full e-tube series 3480

**Strain relief**

e.g. clamps, tiwrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/3450 ► www.igus.co.uk/3480

Strain relief e.g. clamps, tiwrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2000
As standard separators are fitted every 2nd e-chain® link!

---

**Standard - for any application**
Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

**For side-mounted applications**
Asymmetrical separator, for defined gap distance. No additional spacers required.

**Locks securely in preset increments**
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

---

**Horizontal separation**
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

**Shelves**

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
</tr>
<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
</tr>
<tr>
<td>115</td>
<td>3200.115</td>
<td>3210.115</td>
</tr>
</tbody>
</table>

---

**Lean separators**
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

---

(* Lean separator vs. standard separator – measured on a 4m long e-chain® readychain® factory)
Interior separation for e-chains® with extender crossbars

Separator e-chain® with extender crossbars
- unassembled: 45/85.1
- assembled: 45/85.1.1

Shelf, lockable
- unassembled: 3200.X
- assembled: 3210.X

Standard separator, wide base
Separator with a wide base for maximum holding force in the e-chain®. As standard separators are fitted every 2nd e-chain® link!

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 3450.1 Z. More information ▶ From page 1326

E2/000 - robust energy supply even with constant air draught and the resulting pendulum movements in this 160m lift for the Post Tower, Bonn
E2 medium | e-chains® 255 | Product range
Small pitch, smooth running

**e-chains® | Series 255 | Crossbars openable along the outer radius, from one side**

<table>
<thead>
<tr>
<th>Part No.</th>
<th><strong>B]</strong></th>
<th><strong>Ba</strong></th>
<th><strong>R</strong> Available bend radii</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>255.03.R0</td>
<td>38</td>
<td>54</td>
<td>055</td>
<td>075</td>
</tr>
<tr>
<td>255.05.R0</td>
<td>57</td>
<td>73</td>
<td>055</td>
<td>075</td>
</tr>
<tr>
<td>255.07.R0</td>
<td>77</td>
<td>93</td>
<td>055</td>
<td>075</td>
</tr>
<tr>
<td>255.10.R0</td>
<td>103</td>
<td>119</td>
<td>055</td>
<td>075</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (**R**). Example: 255.10.200.0

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

**e-chains® 255 | Installation dimensions**

| Unsupported applications | Short travels |

**Gliding applications | For long travels from 10m to max. 100m**

- The required clearance height: \( H_f = H + 25 \text{ mm} \) (with 1.5kg/m fill weight)

- **Note:** We recommend the project planning of such a system to be carried out by igus®. In case of travels between 4 and 10m we recommend an e-chain® with a longer unsupported length.

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

More information ► [www.igus.co.uk/255](http://www.igus.co.uk/255)
Polymer pivoting
Recommended for unsupported and gliding applications

Polymer locking
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set pivoting with tiewrap plates</th>
<th>Part No. full set locking with tiewrap plates</th>
<th>A [mm]</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>2030.34PZ1B</td>
<td>2030.12PZ1B</td>
<td>2030.12PZ1B</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>2050.34PZ1B</td>
<td>2050.12PZ1B</td>
<td>2050.12PZ1B</td>
<td>44</td>
<td>6</td>
</tr>
<tr>
<td>2070.34PZ1B</td>
<td>2070.12PZ1B</td>
<td>2070.12PZ1B</td>
<td>64</td>
<td>8</td>
</tr>
<tr>
<td>2100.34PZ1B</td>
<td>2100.12PZ1B</td>
<td>2100.12PZ1B</td>
<td>90</td>
<td>10</td>
</tr>
</tbody>
</table>

Full set with tiewrap plate + 10 cable tiewraps, please add index K1. Example: 2030.34PZ1BK1

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

E2 medium | e-chains® 255 | Accessories
Mounting brackets, polymer | Pivoting | Locking

Moving end
2 ... 3PZ(B) / 2 ... PZ(B)

Fixed end
2 ... 4PZ1(B) / 2 ... 2PZ1(B)

No lateral gap to side links necessary.
As standard separators are fitted every 2° e-chain® link!

Option 1 | Full-width shelves
Slotted separator for full-width shelves
Vertical separation in e-chains®. The slot allows basic vertical/ horizontal shelving arrangements.

Option 2 | Partial shelves
Slotted separator for partial shelves
Vertical separation in e-chains®. The slot allows basic vertical/ horizontal shelving arrangements.

Strain relief
- e-chains® 255
- Accessories
- Locking
- Pivoting
- Polymer locking
- Polymer pivoting

Possible orientations for assembled mounting brackets. To receive brackets pre-fitted please add index A1, A2, A3 or A4.

Order example
2100.34PZ1B A1
To indicate option with brackets pre-fitted
With integrated strain relief tiewrap plate
Full set
Series

More information ➤ www.igus.co.uk/255

255

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2000

www.igus.co.uk/255

www.igus.co.uk/E2000

www.igus.co.uk/255
Advantages of the E2 R100 series:
- High level of protection against swarf (including hot swarf)
- Lids openable along the inner or outer radius, from both sides
- Robust and sealed
- Space-efficient with optimised ratio of inner to outer dimensions
- Light, easy to install and cost-effective
- Recommended for short travels and unsupported applications

When to use another e-tube:
- When larger interior heights are required ➤ R2.1 e-tubes, page 478
- When even higher strength is required ➤ R4.1L e-tubes, page 524
- When no swarf protection is required ➤ Series E2/000, page 360
- For extremely swarf-resistant e-tubes ➤ RX system, page 502
- When a particularly quiet operation is required using a smaller pitch ➤ E2 R e-tubes, page 454
Protection against dirt and swarf, cost-effective - E2 R100 e-tubes

Cost-effective, for applications with low and medium speeds. E2 R100 e-tubes work in hot swarf areas, in areas of dirt and dust generated by woodworking, steel-mills, pulp and paper, textile, agriculture, coal-fired plants and many other hostile environments.

- High level of protection against swarf (including hot swarf)
- Robust and sealed
- Space-efficient with optimised ratio of inner to outer dimensions
- Modular interior separation
- Universal KMA mounting brackets with attachment options from any side

Typical industries and applications
- Machine tools
- Wood processing machines
- General mechanical engineering
- In all areas with dirt and swarf

E2 R100 e-tubes - lids openable along the inner radius, from both sides

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R117</td>
<td>21</td>
<td>20 - 100</td>
<td>32 - 112</td>
<td>28</td>
<td>063 - 180</td>
<td>1.20</td>
</tr>
<tr>
<td>R157</td>
<td>40</td>
<td>40 - 200</td>
<td>56 - 216</td>
<td>50</td>
<td>100 - 250</td>
<td>2.25</td>
</tr>
<tr>
<td>R167</td>
<td>50</td>
<td>50 - 250</td>
<td>68 - 268</td>
<td>64</td>
<td>100 - 300</td>
<td>2.50</td>
</tr>
</tbody>
</table>

E2 e-tubes R100 - lids openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>R118</td>
<td>21</td>
<td>25 - 80</td>
<td>37 - 92</td>
<td>28</td>
<td>063 - 180</td>
<td>1.20</td>
</tr>
<tr>
<td>R158</td>
<td>40</td>
<td>40 - 200</td>
<td>56 - 216</td>
<td>50</td>
<td>100 - 250</td>
<td>2.25</td>
</tr>
<tr>
<td>R168</td>
<td>50</td>
<td>50 - 200</td>
<td>68 - 218</td>
<td>64</td>
<td>100 - 300</td>
<td>2.50</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
### Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed gliding(^1)/ acceleration gliding(^1)</td>
<td>upon request</td>
</tr>
<tr>
<td>Speed FL(<em>{B})/ acceleration FL(</em>{B})</td>
<td>(\leq 10 \text{ [m/s]} ) / (\leq 100 \text{ [m/s}^2])</td>
</tr>
<tr>
<td>Speed FL(<em>{A})/ acceleration FL(</em>{A})</td>
<td>(\leq 3 \text{ [m/s]} ) / (\leq 6 \text{ [m/s}^2])</td>
</tr>
<tr>
<td>Material - permitted temperature °C, igumid G</td>
<td>(-40^\circ\text{C} / +120^\circ\text{C})</td>
</tr>
<tr>
<td>Flammability class, igumid G</td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
</tbody>
</table>

\(^1\) Gliding applications for long travels are available upon request, please consult igus®.

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>R117 / R118</td>
<td>(\leq 2.5\text{m})</td>
<td>(\leq 20\text{m})</td>
<td>(\leq 2.0\text{m})</td>
<td>(\leq 0.7\text{m})</td>
</tr>
<tr>
<td>R157 / R158</td>
<td>(\leq 4.5\text{m})</td>
<td>(\leq 40\text{m})</td>
<td>(\leq 3.0\text{m})</td>
<td>(\leq 1.0\text{m})</td>
</tr>
<tr>
<td>R167 / R168</td>
<td>(\leq 5.0\text{m})</td>
<td>(\leq 50\text{m})</td>
<td>(\leq 3.0\text{m})</td>
<td>(\leq 1.0\text{m})</td>
</tr>
</tbody>
</table>

### Options with order keys

#### Options based on series R167

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>No burning-in of hot swarf up to +850°C (+1562° F)</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>168.100.R.0</td>
<td>168.100.R.0.NC</td>
<td>168.100.R.0.HT</td>
<td>168.100.R.0.ESD</td>
<td></td>
</tr>
</tbody>
</table>

#### Delivery times

- Ready to ship*: in 24 - 48hrs.
- Delivery time*: 2-5 business days
- Delivery time*: 7-10 business days
- Delivery time*: 10 business days

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

### Order example | Order key and colour examples

#### Order example for complete e-tube (1.0m), colour black, with mounting brackets and interior separation:

- e-tube (1.0m) | Please indicate e-tube length or number of links: 1.0m or 17 links | 168.100.100.0 |
- + Mounting brackets | KMA - 1 set | 1680.100.12 |
- Interior separation | with 2 separators assembled every 2\(^{nd}\) link | 2 x 1686.01 |

**Order text:**

1 m 168.100.100.0 + 1680.100.12 + 2 x 1686.01

#### Order key

- e-tube openable along the outer radius
- e-tube openable along the inner radius

#### Order index for colour options

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>168.100.100.0</td>
<td>Orange</td>
<td>168.100.100.0</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>168.100.100.0</td>
<td>Yellow</td>
<td>168.100.100.0</td>
</tr>
<tr>
<td>White</td>
<td>168.100.100.0</td>
<td>Light grey</td>
<td>168.100.100.0</td>
</tr>
<tr>
<td>Grey-white</td>
<td>168.100.100.0</td>
<td>Special colour</td>
<td>168.100.100.0</td>
</tr>
</tbody>
</table>

Black e-tubes available from stock.

Above special colours upon request.
e-tubes | Series R117 | Lids openable along the inner radius, from both sides

| e-tubes | Series R118 | Lids openable along the outer radius, from both sides |

### Fill weight [kg/m] 

<table>
<thead>
<tr>
<th>Inner height [m]</th>
<th>8.0</th>
<th>6.0</th>
<th>4.0</th>
<th>1.5</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>20</td>
<td>13</td>
<td>8.0</td>
<td>4.0</td>
<td>2.0</td>
</tr>
<tr>
<td>0.5</td>
<td>25</td>
<td>16</td>
<td>10</td>
<td>6.0</td>
<td>3.0</td>
</tr>
<tr>
<td>0.75</td>
<td>30</td>
<td>20</td>
<td>12</td>
<td>8.0</td>
<td>4.0</td>
</tr>
<tr>
<td>1.0</td>
<td>35</td>
<td>25</td>
<td>14</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>1.5</td>
<td>40</td>
<td>30</td>
<td>16</td>
<td>12</td>
<td>6.0</td>
</tr>
<tr>
<td>2.0</td>
<td>45</td>
<td>35</td>
<td>18</td>
<td>14</td>
<td>7.0</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius [R]. Example: 118.080.100.0.
**R100 e-tubes | Series R117-R118 | Accessories**

KMA mounting brackets | Attachment from any side | One end pivoting

---

### KMA, one end pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>020. ▶️</td>
<td>11800.020.14</td>
<td>11800.025.14</td>
<td>29</td>
<td>36</td>
<td>20</td>
</tr>
<tr>
<td>025. ▶️</td>
<td>11800.025.14</td>
<td>11800.038.14</td>
<td>34</td>
<td>41</td>
<td>25</td>
</tr>
<tr>
<td>038. ▶️</td>
<td>11800.038.14</td>
<td>11800.048.14</td>
<td>47</td>
<td>54</td>
<td>38</td>
</tr>
<tr>
<td>048. ▶️</td>
<td>11800.048.14</td>
<td>11800.063.14</td>
<td>57</td>
<td>64</td>
<td>48</td>
</tr>
<tr>
<td>063. ▶️</td>
<td>11800.063.14</td>
<td>11800.080.14</td>
<td>72</td>
<td>79</td>
<td>63</td>
</tr>
<tr>
<td>080. ▶️</td>
<td>11800.080.14</td>
<td>11800.100.14</td>
<td>89</td>
<td>96</td>
<td>80</td>
</tr>
<tr>
<td>100. ▶️</td>
<td>11800.100.14</td>
<td>11800.125.14</td>
<td>109</td>
<td>116</td>
<td>100</td>
</tr>
</tbody>
</table>

[KMA = polymer metal mounting bracket]

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 hexagon socket DIN 912 cap bolts.

---

**Order example**


- Full set
- With index
- Series

---

### Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

### Angled polymer bracket one end pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>025. ▶️</td>
<td>1180.025.14PZB</td>
<td>1180.025.14PZ</td>
<td>12</td>
<td>15</td>
<td>25</td>
<td>4</td>
</tr>
<tr>
<td>038. ▶️</td>
<td>1180.038.14PZB</td>
<td>1180.038.14PZ</td>
<td>25</td>
<td>20</td>
<td>38</td>
<td>4</td>
</tr>
<tr>
<td>048. ▶️</td>
<td>1180.048.14PZB</td>
<td>1180.048.14PZ</td>
<td>35</td>
<td>30</td>
<td>48</td>
<td>5</td>
</tr>
<tr>
<td>063. ▶️</td>
<td>1180.063.14PZB</td>
<td>1180.063.14PZ</td>
<td>50</td>
<td>40</td>
<td>63</td>
<td>6</td>
</tr>
<tr>
<td>080. ▶️</td>
<td>1180.080.14PZB</td>
<td>1180.080.14PZ</td>
<td>67</td>
<td>60</td>
<td>80</td>
<td>8</td>
</tr>
<tr>
<td>100. ▶️</td>
<td>1180.100.14PZB</td>
<td>1180.100.14PZ</td>
<td>87</td>
<td>80</td>
<td>100</td>
<td>10</td>
</tr>
</tbody>
</table>

---

**Order example**

1180.048.14PZB.A ▶️ to indicate option with brackets pre-fitted.

- Full set
- With index
- Series

---

### Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

**3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R100**
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-tube link!

**Standard separator**

For simple vertical subdivision. Offers security due to its wide base design, also when used with large cables or hoses.

**E2 R100 e-tubes** | Application example

Typical use of igus® E2 R100 e-tubes - standing application in a machine tool.
Complete Part No. with required radius (R). Example: 158.100.100.0.

Part No. e-tubes | Part No. e-tubes
--- | ---
157.040 | 158.040
157.050 | 158.050
157.075 | 158.075
157.088 | 158.088
157.090 | 158.090
157.100 | 158.100
157.125 | 158.125
157.135 | 158.135
157.150 | 158.150
157.175 | 158.175
157.200 | 158.200

Available bend radii

- Bi: [mm]
- Ba: [mm]
- R: [mm]

<table>
<thead>
<tr>
<th>Bi</th>
<th>Ba</th>
<th>R</th>
<th>R157</th>
<th>R158</th>
</tr>
</thead>
<tbody>
<tr>
<td>40</td>
<td>56</td>
<td>100 125 150 175 200 250</td>
<td>1.21</td>
<td>1.21</td>
</tr>
<tr>
<td>50</td>
<td>66</td>
<td>100 125 150 175 200 250</td>
<td>1.30</td>
<td>1.30</td>
</tr>
<tr>
<td>75</td>
<td>91</td>
<td>100 125 150 175 200 250</td>
<td>1.50</td>
<td>1.50</td>
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<tr>
<td>88</td>
<td>104</td>
<td>100 125 150 175 200 250</td>
<td>1.57</td>
<td>1.57</td>
</tr>
<tr>
<td>88</td>
<td>104</td>
<td>100 125 150 175 200 250</td>
<td>1.63</td>
<td>1.62</td>
</tr>
<tr>
<td>100</td>
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<td>100 125 150 175 200 250</td>
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<td>125</td>
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<td>135</td>
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<td>150</td>
<td>166</td>
<td>100 125 150 175 200 250</td>
<td>2.15</td>
<td>2.13</td>
</tr>
<tr>
<td>175</td>
<td>191</td>
<td>100 125 150 175 200 250</td>
<td>2.34</td>
<td>2.34</td>
</tr>
<tr>
<td>200</td>
<td>216</td>
<td>100 125 150 175 200 250</td>
<td>2.55</td>
<td>2.55</td>
</tr>
</tbody>
</table>

Unsupported applications

- Fill weight [kg/m]: 0.5
- Fl Media: FL
- H: 250 300 350 400 450 550
- D: 194 219 244 269 294 344
- K: 410 485 565 645 725 880

The required clearance height: \( h_r = H + 40\text{mm} \) (with 1.0kg/m fill weight)

**E2 R100 e-tubes | R157-R158**

Swarf protection, even against hot swarf, cost-effective

**E2 R100 e-tubes | R157-R158**

Unsupported applications | Short travels

- **Installation dimensions**
- **3D CAD, configurators, service life calculation and more**

**Hot swarf up to +850°C**

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid® (igus® HT) material

More information ▶ [www.igus.co.uk/R157](http://www.igus.co.uk/R157) ▶ [www.igus.co.uk/R158](http://www.igus.co.uk/R158)
The following parts are required for attachment of the mounting brackets:

(KMA = polymer metal mounting bracket)

- Socket head cap bolt M5 DIN 912-8.8
- Length depends on the thickness of the attachment base
- Washer 5.3 DIN 125-ST
- Hexagon nut MS DIN 934-8

To receive full sets with pre-fitted quickflange please add index QF. For example: Part No. 15800.100.12.QF. Unassembled quickflange: Part No. 15800.QF.

**KMA, long pivoting**
- Recommended for unsupported applications
- Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Width</th>
<th>Brushed</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>040.</td>
<td>15800.040.12</td>
<td>15801.040.34</td>
<td>50</td>
<td>61</td>
<td>40</td>
</tr>
<tr>
<td>050.</td>
<td>15800.050.12</td>
<td>15801.050.34</td>
<td>60</td>
<td>71</td>
<td>50</td>
</tr>
<tr>
<td>075.</td>
<td>15800.075.12</td>
<td>15801.075.34</td>
<td>85</td>
<td>96</td>
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<tr>
<td>088.</td>
<td>15800.088.12</td>
<td>15801.088.34</td>
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<td>88</td>
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<tr>
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<td>15801.090.34</td>
<td>98</td>
<td>109</td>
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<td>15801.100.34</td>
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<td>15801.175.34</td>
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<td>15801.200.34</td>
<td>210</td>
<td>221</td>
<td>200</td>
</tr>
</tbody>
</table>

**KMA, long locking**
- Recommended for vertical hanging and standing applications

**KMA, short pivoting**
- Recommended for unsupported applications
- Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Width</th>
<th>Brushed</th>
<th>Bi</th>
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<tbody>
<tr>
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<td>15851.090.34</td>
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<td>15851.200.34</td>
<td>210</td>
<td>221</td>
<td>200</td>
</tr>
</tbody>
</table>

**KMA, short locking**
- Recommended for vertical hanging and standing applications

**Strain relief**
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

**3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R100**
Steel flange, locking | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Hole pattern</th>
<th>Part No. full set</th>
<th>Steel flange</th>
<th>Bi</th>
<th>Ba</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>050.</td>
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<td>906.461.1.12*</td>
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<td>58.1</td>
<td>906.461.2.12*</td>
<td>75</td>
<td>91</td>
<td>30</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>

Mounting only with hexagon socket DIN 912 M6 and washer DIN 125, 6.3mm

*Available upon request. Please consult igus® for delivery time.

Metallic flange brackets with common hole patterns can easily replace alternatives, without having to alter the hole pattern. Flush attachment possibilities at both ends of the e-tube using flange mounting brackets made of steel.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-tube link!

Option 3 | Partial shelves
Slotted separator for partial shelves
Allows modular shelving arrangements.

Shelf
For applications involving many cables with different diameters, shelves can be fitted at different heights.

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>018</th>
<th>023</th>
<th>028</th>
<th>033</th>
<th>038</th>
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</thead>
<tbody>
<tr>
<td>un assembled</td>
<td>2200.18</td>
<td>2200.23</td>
<td>2200.28</td>
<td>2200.33</td>
<td>2200.38</td>
</tr>
<tr>
<td>assembled</td>
<td>2210.18</td>
<td>2210.23</td>
<td>2210.28</td>
<td>2210.33</td>
<td>2210.38</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>043</th>
<th>048</th>
<th>068</th>
<th>068</th>
<th>073</th>
</tr>
</thead>
<tbody>
<tr>
<td>un assembled</td>
<td>2200.43</td>
<td>2200.48</td>
<td>2200.58</td>
<td>2200.68</td>
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<tr>
<td>assembled</td>
<td>2210.43</td>
<td>2210.48</td>
<td>2210.58</td>
<td>2210.68</td>
<td>2210.73</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>098</th>
<th>099</th>
<th>124</th>
<th>149</th>
</tr>
</thead>
<tbody>
<tr>
<td>un assembled</td>
<td>2200.88</td>
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<tr>
<td>assembled</td>
<td>2210.88</td>
<td>2210.99</td>
<td>2210.124</td>
<td>2210.149</td>
</tr>
</tbody>
</table>

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-tube
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 1585.01.Z. More information ▶ From page 1336
e-tubes | Series R167 | Lids openable along the inner radius, from both sides
e-tubes | Series R168 | Lids openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No. e-tubes openable along the inner radius</th>
<th>Part No. e-tubes openable along the outer radius</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>R167 [mm]</th>
<th>R168 [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>167.050.R0</td>
<td>168.050.R0</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
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<tr>
<td>167.075.R0</td>
<td>168.075.R0</td>
<td>75</td>
<td>93</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>167.100.R0</td>
<td>168.100.R0</td>
<td>100</td>
<td>118</td>
<td>100</td>
<td>125</td>
<td>150</td>
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<tr>
<td>167.115.R0</td>
<td>168.115.R0</td>
<td>115</td>
<td>133</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>167.125.R0</td>
<td>168.125.R0,0†</td>
<td>125</td>
<td>143</td>
<td>100</td>
<td>125</td>
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</tr>
<tr>
<td>167.150.R0</td>
<td>168.150.R0</td>
<td>150</td>
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<td>167.175.R0</td>
<td>168.175.R0</td>
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<tr>
<td>167.200.R0</td>
<td>168.200.R0</td>
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<td>218</td>
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<td>125</td>
<td>150</td>
</tr>
<tr>
<td>167.225.R0</td>
<td>168.225.R0,0†</td>
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<td>243</td>
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<td>125</td>
<td>150</td>
</tr>
<tr>
<td>167.250.R0</td>
<td>168.250.R0,0†</td>
<td>250</td>
<td>268</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus for delivery times.

Complete Part No. with required radius (R). Example: 168.100.100.0.

Hot swarf up to +850°C
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information: www.igus.co.uk/HT
The following parts are required for attachment of the mounting brackets:

- *only the fixed end is locking, the moving end is pivoting (KMA = polymer metal mounting bracket)*

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B/ [mm]</th>
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</thead>
<tbody>
<tr>
<td>050. ▷</td>
<td>1680.050.12</td>
<td>1680.050.14</td>
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<td>90</td>
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<tr>
<td>075. ▷</td>
<td>1680.075.12</td>
<td>1680.075.14</td>
<td>87</td>
<td>99</td>
<td>115</td>
</tr>
<tr>
<td>100. ▷</td>
<td>1680.100.12</td>
<td>1680.100.14</td>
<td>112</td>
<td>124</td>
<td>140</td>
</tr>
<tr>
<td>115. ▷</td>
<td>1680.115.12</td>
<td>1680.115.14</td>
<td>127</td>
<td>139</td>
<td>155</td>
</tr>
<tr>
<td>125. ▷</td>
<td>1680.125.12</td>
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<td>165</td>
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<tr>
<td>150. ▷</td>
<td>1680.150.12</td>
<td>1680.150.14</td>
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<td>174</td>
<td>190</td>
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<tr>
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<td>1680.175.14</td>
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<td>215</td>
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<td>1680.200.14</td>
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<td>1680.225.14</td>
<td>237</td>
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<td>265</td>
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<tr>
<td>250. ▷</td>
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<td>1680.250.14</td>
<td>262</td>
<td>274</td>
<td>295</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

*Only the fixed end is locking, the moving end is pivoting*

<table>
<thead>
<tr>
<th>Steel flange, locking</th>
<th>Recommended for unsupported applications</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Width index</th>
<th>Hole pattern</th>
<th>Part No. full set</th>
<th>B [mm]</th>
<th>B/ [mm]</th>
<th>A [mm]</th>
<th>B [mm]</th>
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<tbody>
<tr>
<td>075. ▷</td>
<td>68.01</td>
<td>905.050.1,12*</td>
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<tr>
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<td>68.02</td>
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<td>175. ▷</td>
<td>68.03</td>
<td>905.050.3,12*</td>
<td>175</td>
<td>193</td>
<td>200</td>
<td>150</td>
</tr>
</tbody>
</table>

(Mounting only with hexagon socket DIN 912 M6 and washer DIN 125, 6.3 mm)

*Available upon request. Please consult igus® for delivery times.*

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Metallic flange brackets with common hole patterns can easily replace alternatives, without having to alter the hole pattern. Flush attachment possibilities at both ends of the e-tube using flange mounting brackets made of steel.

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R100

More information ► www.igus.co.uk/R167 ► www.igus.co.uk/R168

450
Option 1 | Separators
Standard separator
For simple vertical subdivision. Offers security due to its wide base design, also when used with large cables or hoses.

Option 2 | Full-width shelves
Slotted separator for full-width shelves
Vertical separation in e-tubes. The slot allows basic vertical and horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full-width separation.

Option 3 | Partial shelves
Slotted separator for partial shelves
Allows modular shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

Shelf
For applications involving many cables with different diameters, shelves can be fitted at different heights.

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-tube
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 1685.01.Z. More information ► From page 1326
E2R

e-tubes for swarf protection at higher speeds and smooth running

Advantages of the E2 R series:

- Strong e-tubes with small pitch for low noise, smooth running
- High level of protection against swarf (including hot swarf)
- Lids removable along the outer radius
- Robust and sealed
- Space-efficient with optimised ratio of inner to outer dimensions

When to use another e-tube:

- When a particularly cost-effective solution is required
  - R2.1 e-tubes, page 478
- When no swarf protection is required
  - E2/000 e-chains®, page 360
- For extremely swarf-resistant e-tubes
  - RX system, page 502
- When even higher strength is required
  - R4.1L e-tubes, page 524
**E2 R e-tubes** | Introduction | Advantages

**Swarf protection at higher speeds and smooth running - E2R e-tubes**

E2 R e-tubes - small pitch for higher speeds and smooth motion. igus® e-tubes work in hot swarf areas, in areas of dirt and dust generated by woodworking, steel mills, pulp and paper, textile, agriculture, coal plant and many other hostile environments.

- High strength: large pin/bore and lids with high locking force
- Fast assembly: lids removable along the outer radius
- Swarf protection: smooth, swarf-resistant exterior
- Smooth running: small pitch for low noise, smooth running
- Strong: double stop-dog system for long unsupported lengths
- High level of protection against swarf (including hot swarf)
- Robust and sealed
- Space-efficient with optimised ratio of inner to outer dimensions
- Modular interior separation
- Universal KMA mounting brackets with attachment options from any side

**Typical industries and applications**

- Machine tools
- Wood processing machines
- General mechanical engineering
- In all areas with dirt and swarf

**E2 R e-tubes** | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height (h) [mm]</th>
<th>Inner width (b_i) [mm]</th>
<th>Outer width (b_a) [mm]</th>
<th>Outer height (h_a) [mm]</th>
<th>Bend radius (R) [mm]</th>
<th>Unsupported length (\leq [m])</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48</td>
<td>25</td>
<td>25 - 130</td>
<td>36 - 141</td>
<td>36</td>
<td>060 - 250</td>
<td>1.50</td>
</tr>
<tr>
<td>R58</td>
<td>35</td>
<td>50 - 200</td>
<td>66 - 216</td>
<td>50</td>
<td>075 - 250</td>
<td>2.30</td>
</tr>
<tr>
<td>R68</td>
<td>45</td>
<td>50 - 250</td>
<td>68 - 268</td>
<td>64</td>
<td>100 - 300</td>
<td>2.50</td>
</tr>
</tbody>
</table>

**Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

---

**e-tubes with igumid HT-Material for hot swarf up to +850°C available upon request**

**Electrically conductive ESD e-tubes upon request**

**UL94-V0 classifications upon request**

**iF product design award**

1987 igus® series R68
## E2 R-e-tubes | Technical data | Overview

### Technical data

| Speed gliding\(^1\) / acceleration gliding\(^1\) | \(\leq 3 \text{ [m/s]} / \leq 10 \text{ [m/s}^2]\) |
| Speed \(FL_a\) / acceleration \(FL_a\) | \(\leq 10 \text{ [m/s]} / \leq 100 \text{ [m/s}^2]\) |
| Speed \(FL_b\) / acceleration \(FL_b\) | \(\leq 3 \text{ [m/s]} / \leq 6 \text{ [m/s}^2]\) |
| Material - permitted temperature °C, igumid G | -40°C / +120°C |
| Flammability class, igumid G | VDE 0304 IIC UL94-HB |

\(^1\) Gliding applications for long travels are available upon request, please consult igus®.

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding (^1)</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Zig-zag</th>
<th>Unsupported lower run</th>
</tr>
</thead>
<tbody>
<tr>
<td>R48</td>
<td>(\leq 3.00\text{m})</td>
<td>(\leq 50\text{m})</td>
<td>(\leq 50\text{m})</td>
<td>(\leq 4.0\text{m})</td>
<td>(\leq 1.5\text{m})</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>R58</td>
<td>(\leq 4.50\text{m})</td>
<td>(\leq 75\text{m})</td>
<td>(\leq 50\text{m})</td>
<td>(\leq 4.0\text{m})</td>
<td>(\leq 2.0\text{m})</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>R68</td>
<td>(\leq 5.00\text{m})</td>
<td>(\leq 100\text{m})</td>
<td>(\leq 60\text{m})</td>
<td>(\leq 4.0\text{m})</td>
<td>(\leq 2.0\text{m})</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

\(^1\) For gliding applications, please consult igus®.

## E2 R-e-tubes | Options and order keys

### Options with order keys | Examples based on series R58

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>No burning-in of hot swarf up to +850°C (+1562°F)</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
<td>Part No.</td>
</tr>
<tr>
<td>Standard</td>
<td>NC version</td>
<td>igumid HT</td>
<td>igumid ESD</td>
</tr>
<tr>
<td>58.100.R.0</td>
<td>58.100.R.0.NC</td>
<td>58.100.R.0.HT</td>
<td>58.100.R.0.ESD</td>
</tr>
</tbody>
</table>

### Ready to ship* in 24 - 48hrs. Delivery time* 2-5 business days Delivery time* 7-10 business days Delivery time* 10 business days

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

### Order example | Order key and colour examples | Examples based on series R58

#### Order example for complete e-tube (1.0m), colour black, with mounting brackets and interior separation:

- **e-tube (1.0m)** Please indicate e-tube length or number of links: 1.0m or 28 links 58.100.100.0
- **+ Mounting brackets** KMA - 1 set 580.100.12
- **Interior separation** with 2 separators assembled every 2\(^{nd}\) link 2 x 582

**Order text:** 1 m 58.100.100.0 + 580.100.12 + 2 x 582

#### Order key

<table>
<thead>
<tr>
<th>e-tube - lids removable along the outer radius</th>
<th>Colour index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>58.100.100.0</td>
<td>Black</td>
<td>Standard</td>
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<tr>
<td></td>
<td>Orange</td>
<td>Special colour</td>
<td>.2</td>
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<td>Silver-grey</td>
<td>Special colour</td>
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<td></td>
<td>Yellow</td>
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<td>White</td>
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<td>Grey-white</td>
<td>Special colour</td>
<td>.1S</td>
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</table>

Black e-tubes available from stock.

Above special colours upon request.

More information ► [www.igus.co.uk/E2R](http://www.igus.co.uk/E2R)

3D CAD, configurators, service life calculation and more ► [www.igus.co.uk/E2R](http://www.igus.co.uk/E2R)
**E2 R e-tubes | Series R48**

**Product range**

Protection against dirt and debris, small pitch for smooth motion

---

**e-tubes | Series R48 | Lids removable along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
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<th>B a</th>
<th>R Available bend radii</th>
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<tr>
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<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>kg/m</td>
</tr>
<tr>
<td>48.025,R,0</td>
<td>25</td>
<td>36</td>
<td>060 075 100 125 150 175 200 250</td>
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</tr>
<tr>
<td>48.050,R,0</td>
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<td>61</td>
<td>060 075 100 125 150 175 200 250</td>
<td>0.84</td>
</tr>
<tr>
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<td>130</td>
<td>141</td>
<td>060 075 100 125 150 175 200 250</td>
<td>1.46</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 48,100,100.0

---

**Hot swarf up to +850°C**

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® iguroid HT material

More information: [www.igus.co.uk/HT](http://www.igus.co.uk/HT)

---

**E2 R e-tubes | R48 | Installation dimensions**

**Unsupported applications | Short travels**

---

**Gliding applications | For long travels from 5m to max. 50m**

- **Lk = S/2 + K2**
  - Moving end
  - Guide trough with glide bar
  - Guide trough without glide bar

**R**

<table>
<thead>
<tr>
<th></th>
<th>060</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
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<tr>
<td>H2</td>
<td>156</td>
<td>186</td>
<td>236</td>
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<td>D2</td>
<td>110</td>
<td>125</td>
<td>330</td>
<td>450</td>
<td>610</td>
<td>730</td>
<td>930</td>
<td>1,151</td>
</tr>
<tr>
<td>K2</td>
<td>250</td>
<td>300</td>
<td>545</td>
<td>758</td>
<td>970</td>
<td>1,151</td>
<td>1,182</td>
<td>*</td>
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<tr>
<td>ΔCL</td>
<td>*</td>
<td>170</td>
<td>270</td>
<td>380</td>
<td>470</td>
<td>*</td>
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<td>*</td>
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</table>

*Values upon request

---

**Filling weight**

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<tr>
<th>Inner height [mm]</th>
<th>25</th>
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</thead>
<tbody>
<tr>
<td>Pitch [mm/link]</td>
<td>30.3</td>
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<tr>
<td>Links/m</td>
<td>33</td>
</tr>
<tr>
<td>Correlates to [mm]</td>
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<tr>
<td>E2R e-tubes</td>
<td></td>
</tr>
<tr>
<td>e-tube length L48 = H2 + 20mm</td>
<td></td>
</tr>
<tr>
<td>(with 0.5kg/m fill weight)</td>
<td></td>
</tr>
</tbody>
</table>

---

**Note:** We recommend the project planning of such a system to be carried out by igus®.

In case of travels between 2 and 5m we recommend an e-tube with a longer unsupported length.

If a gliding application is required for a long travel, please consult igus®.

**3D CAD, configurators, service life calculation and more**

[www.igus.co.uk/E2R](http://www.igus.co.uk/E2R)

---

**More information **
[www.igus.co.uk/R48](http://www.igus.co.uk/R48)
**E2 R e-tubes | Series R48 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

**Moving end**
480 ... 1 / 485 ... 1

**Fixed end**
480 ... 2 / 485 ... 2

**Front view**

of KMA

---

**KMA pivoting**

Recommended for unsupported applications

**KMA locking**

Recommended for vertical hanging and standing applications

---

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set KMA pivoting</th>
<th>Part no. full set KMA locking</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B/ [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>025. «</td>
<td>480.025.12</td>
<td>485.025.12</td>
<td>45</td>
<td>55</td>
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<tr>
<td>050. «</td>
<td>480.050.12</td>
<td>485.050.12</td>
<td>70</td>
<td>80</td>
<td>50</td>
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<tr>
<td>075. «</td>
<td>480.075.12</td>
<td>485.075.12</td>
<td>95</td>
<td>105</td>
<td>75</td>
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<tr>
<td>100. «</td>
<td>480.100.12</td>
<td>485.100.12</td>
<td>120</td>
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<td>480.130.12</td>
<td>485.130.12</td>
<td>150</td>
<td>160</td>
<td>130</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8
- Length depends on the thickness of the attachment base
- Washer 5.3 DIN 125-ST
- Hexagon nut M5 DIN 934-8

---

**Angled polymer bracket | One end pivoting**

Recommended for unsupported applications

---

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Number of teeth</th>
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<td>025. «</td>
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<tr>
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<td>4800.050.12</td>
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<td>30</td>
<td>5</td>
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<tr>
<td>075. «</td>
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<tr>
<td>100. «</td>
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<tr>
<td>130. «</td>
<td>–</td>
<td>4800.130.12</td>
<td>117</td>
<td>–</td>
<td>–</td>
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</table>

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8
- Length depends on the thickness of the attachment base
- Hexagon nut M5 DIN 7991
- Washer 5.3 DIN 125-ST

---

**Strain relief**

E.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

**More information ► www.igus.co.uk/R48**

---

**3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2R**
Steel mounting brackets | One end pivoting

Recommended for unsupported, vertical hanging, standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
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</thead>
<tbody>
<tr>
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<td>482.050.12</td>
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<td>075.</td>
<td>482.075.12</td>
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<td>110</td>
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<tr>
<td>100.</td>
<td>482.100.12</td>
<td>102</td>
<td>140</td>
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<tr>
<td>125.</td>
<td>482.125.12</td>
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<tr>
<td>150.</td>
<td>482.150.12</td>
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<td></td>
</tr>
<tr>
<td>175.</td>
<td>482.175.12</td>
<td></td>
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</tr>
<tr>
<td>200.</td>
<td>482.200.12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Separator with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-tube
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. 481.ZR. More information From page 1326

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options From page 1300
e-tubes | Series R58 | Lids removable along the outer radius

Part No. | Bi [mm] | Ba [mm] | Available bend radii [mm] | R58 [kg/m]
--- | --- | --- | --- | ---
58.050.R.0 | 50 | 66 | 075 100 125 150 200 250 | 1.50
58.075.R.0 | 75 | 91 | 075 100 125 150 200 250 | 1.77
58.100.R.0 | 100 | 116 | 075 100 125 150 200 250 | 2.04
58.125.R.0 | 125 | 141 | 075 100 125 150 200 250 | 2.31
58.150.R.0 | 150 | 166 | 075 100 125 150 200 250 | 2.61
58.175.R.0 | 175 | 191 | 075 100 125 150 200 250 | 2.88
58.200.R.0 | 200 | 216 | 075 100 125 150 200 250 | 3.15

Complete Part No. with required radius (R). Example: 58.100.100.0

Hot swarf up to +850°C
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material

More information ▶ www.igus.co.uk/HT

**E2 R e-tubes | Series R58 | Product range**
Protection against dirt and debris, small pitch for smooth motion

**E2 R e-tubes | R58 | Installation dimensions**
Unsupported applications | Short travels

Unsupported applications

- Gliding applications: For long travels from 5m to max. 75m

\[
L_k = S/2 + K_2
\]

Moving end

Guide trough with glide bar

Fixed end

Guide trough without glide bar

Total length of guide trough

**Notes:**
- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels between 3 and 5m, we recommend an e-tube with a longer unsupported length.
- If a gliding application is required for a long travel, please consult igus®.

**Unsupoorted length** FL = FL following FL and FL preceding

**Installation dimensions**

**Unsupoorted applications**

- Short travels

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/E2R
The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8
- Hexagon nut M5 DIN 934-8

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted quickflange please add index QF. For example: Part No. 580.100.12.QF. Unassembled quickflange: Part No. 16800.QF

Metallic flange brackets with common hole patterns can easily replace alternatives, without having to alter the hole pattern. Flush attachment possibilities at both ends of the e-tube using flange mounting brackets made of steel.

For example: Part No. 906.463.1.2. Unassembled quickflange: Part No. 906.463.12 CF. Unassembled quickflange: Part No. 16800 CF.

E2 R e-tubes | Series R58 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting | Locking

Moving end

580 ... 1 / 580 ... 3

Fixed end

580 ... 2 / 580 ... 4

Front view

of KMA

KMA pivoting

KMA locking

Recommended for unsupported applications

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
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<tbody>
<tr>
<td>050. ▶</td>
<td>580.050.12</td>
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<td>50</td>
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<td>075. ▶</td>
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<td>75</td>
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<td>100. ▶</td>
<td>580.100.12</td>
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<td>125. ▶</td>
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<td>150. ▶</td>
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<td>224</td>
<td>200</td>
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</table>

(KMA = polymer metal mounting bracket)

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8
- Hexagon nut M5 DIN 934-8

To receive full sets with pre-fitted quickflange please add index QF. For example: Part No. 580.100.12.QF. Unassembled quickflange: Part No. 16800.QF

Steel flange, pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Hole pattern</th>
<th>Part No.</th>
<th>Bi</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<tbody>
<tr>
<td>050. ▶</td>
<td>58.05</td>
<td>906.463.05.1</td>
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<td>90.5</td>
<td>78.5</td>
<td>58.3</td>
<td>24.5</td>
<td>20</td>
</tr>
<tr>
<td>075. ▶</td>
<td>58.1</td>
<td>906.463.05.1</td>
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<td>104</td>
<td>83.3</td>
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<table>
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<th>Width index</th>
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<th>B</th>
<th>C</th>
<th>D</th>
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<tr>
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<td>90.5</td>
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<td>57.5</td>
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<td>20</td>
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<tr>
<td>075. ▶</td>
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<td>82.5</td>
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More information ➤ www.igus.co.uk/R58

E2 R e-tubes | Series R58 | Accessories

Mounting brackets, steel flange | Pivoting

Moving end

906.463.X.1

Fixed end

906.463.X.2

Front view

of KMA

Moving end (inner link)

906.463.X.1

Fixed end (outer link)

906.463.X.2

Steel flange, pivoting

Recommended for unsupported applications

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2R
E2 R e-tubes | Series R58 | Accessories

Interior separation | Option 1 | Option 2

Option 1 | Separators
Standard separator
For simple vertical subdivision. Offers security due to its wide base design, also when used with large cables or hoses.

Option 2 | Full-width shelves
Slotted separator for full-width shelves
Vertical separation in e-tubes. The slot allows basic vertical and horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full-width separation.

<table>
<thead>
<tr>
<th>X</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>220.50</td>
<td>221.50</td>
</tr>
<tr>
<td>075</td>
<td>220.75</td>
<td>221.75</td>
</tr>
<tr>
<td>100</td>
<td>220.100</td>
<td>221.100</td>
</tr>
</tbody>
</table>

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-tube link!

E2 R e-tubes | Series R58 | Accessories

Interior separation | Option 3

Option 3 | Partial shelves
Slotted separator for partial shelves
Allows modular shelving arrangements.

Shelf
For applications involving many cables with different diameters, shelves can be fitted at different heights.

<table>
<thead>
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<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2200.18</td>
<td>2210.18</td>
</tr>
<tr>
<td>023</td>
<td>2200.23</td>
<td>2210.23</td>
</tr>
<tr>
<td>028</td>
<td>2200.28</td>
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<td>033</td>
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<td>2210.33</td>
</tr>
<tr>
<td>038</td>
<td>2200.38</td>
<td>2210.38</td>
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</table>

Full-width shelves

<table>
<thead>
<tr>
<th>X</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>220.125</td>
<td>221.125</td>
</tr>
<tr>
<td>075</td>
<td>220.150</td>
<td>221.150</td>
</tr>
<tr>
<td>100</td>
<td>220.175</td>
<td>221.175</td>
</tr>
</tbody>
</table>

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-tube link!
e-tubes | Series R68 | Lids removable along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>BI</th>
<th>Ba</th>
<th>Available bend radii</th>
<th>Rea</th>
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<tbody>
<tr>
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<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
</tr>
<tr>
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<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>68.075.R.0</td>
<td>75</td>
<td>93</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>68.100.R.0</td>
<td>100</td>
<td>118</td>
<td>100</td>
<td>125</td>
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<tr>
<td>68.115.R.0</td>
<td>115</td>
<td>133</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>68.125.R.0</td>
<td>125</td>
<td>143</td>
<td>100</td>
<td>125</td>
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<td>68.150.R.0</td>
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<td>168</td>
<td>100</td>
<td>125</td>
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<tr>
<td>68.175.R.0</td>
<td>175</td>
<td>193</td>
<td>100</td>
<td>125</td>
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<tr>
<td>68.200.R.0</td>
<td>200</td>
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<td>100</td>
<td>125</td>
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<tr>
<td>68.225.R.0</td>
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<td>100</td>
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<tr>
<td>68.250.R.0</td>
<td>250</td>
<td>268</td>
<td>100</td>
<td>125</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: 68.100.100.0

Hot swarf up to +850°C
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information ➤ www.igus.co.uk/HT

E2 R e-tubes | Series R68
Protection against dirt and debris, small pitch for smooth motion

E2 R e-tubes | R68 | Installation dimensions
Unsupported applications | Short travels

Gliding applications | For long travels from 6m to max. 100m

Note: We recommend the project planning of such a system to be carried out by igus®.
In case of travels between 4 and 6m we recommend an e-tube with a longer unsupported length.
If a gliding application is required for a long travel, please consult igus®.

<table>
<thead>
<tr>
<th>R</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>225</th>
<th>250</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>201</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
<td>220</td>
</tr>
<tr>
<td>D</td>
<td>200</td>
<td>370</td>
<td>440</td>
<td>540</td>
<td>650</td>
<td>700</td>
<td>850</td>
<td>1,050</td>
</tr>
<tr>
<td>K</td>
<td>500</td>
<td>648</td>
<td>792</td>
<td>900</td>
<td>1,116</td>
<td>1,269</td>
<td>1,476</td>
<td>1,800</td>
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<tr>
<td>ΔCL</td>
<td>164</td>
<td>204</td>
<td>294</td>
<td>364</td>
<td>439</td>
<td>514</td>
<td>664</td>
<td>n.a.90</td>
</tr>
</tbody>
</table>

Values upon request

More information ➤ www.igus.co.uk/E2R
The following parts are required for attachment of the mounting brackets:

- **KMA pivoting**
- **KMA locking**

### KMA Pivoting

Recommended for unsupported applications

**Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B' [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>050. ▲</td>
<td>680.050.12</td>
<td>680.050.34</td>
<td>62</td>
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<td>50</td>
</tr>
<tr>
<td>075. ▲</td>
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<td>99</td>
<td>75</td>
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<tr>
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<td>680.100.12</td>
<td>680.100.34</td>
<td>112</td>
<td>124</td>
<td>100</td>
</tr>
<tr>
<td>115. ▲</td>
<td>680.115.12</td>
<td>680.115.34</td>
<td>127</td>
<td>139</td>
<td>115</td>
</tr>
<tr>
<td>125. ▲</td>
<td>680.125.12</td>
<td>680.125.34</td>
<td>137</td>
<td>149</td>
<td>125</td>
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<tr>
<td>150. ▲</td>
<td>680.150.12</td>
<td>680.150.34</td>
<td>162</td>
<td>174</td>
<td>150</td>
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<tr>
<td>175. ▲</td>
<td>680.175.12</td>
<td>680.175.34</td>
<td>187</td>
<td>199</td>
<td>175</td>
</tr>
<tr>
<td>200. ▲</td>
<td>680.200.12</td>
<td>680.200.34</td>
<td>212</td>
<td>224</td>
<td>200</td>
</tr>
<tr>
<td>225. ▲</td>
<td>680.225.12</td>
<td>680.225.34</td>
<td>237</td>
<td>249</td>
<td>225</td>
</tr>
<tr>
<td>250. ▲</td>
<td>680.250.12</td>
<td>680.250.34</td>
<td>262</td>
<td>274</td>
<td>250</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

The following parts are required for attachment of the mounting brackets:

- Socket head cap bolt M5 DIN 912-8.8
- Length depends on the thickness of the attachment base
- Washer 5.3 DIN 125-ST
- Hexagon nut M5 DIN 934-8

To receive full sets with pre-fitted quickflange please add index QF. For example: Part No. 680.100.12.QF. Unassembled quick flange: Part No. 68100.QF

---

### KMA Locking

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

**Steel flange, pivoting | Recommended for unsupported applications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>075. ▲</td>
<td>68.1</td>
<td>906.462.1.1</td>
<td>75</td>
<td>116</td>
<td>104</td>
<td>83.3</td>
<td>50</td>
<td>30</td>
</tr>
<tr>
<td>115. ▲</td>
<td>68.2</td>
<td>906.462.2.1</td>
<td>75</td>
<td>116</td>
<td>104</td>
<td>83.4</td>
<td>38</td>
<td>30</td>
</tr>
<tr>
<td>175. ▲</td>
<td>68.3</td>
<td>906.462.3.1</td>
<td>175</td>
<td>216</td>
<td>204</td>
<td>183.3</td>
<td>150</td>
<td>100</td>
</tr>
</tbody>
</table>

**Width index | Hole pattern | Part No. fixed end | B [mm] | A [mm] | B [mm] | C [mm] | D [mm] | E [mm] |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>075. ▲</td>
<td>68.1</td>
<td>906.462.1.2</td>
<td>75</td>
<td>116</td>
<td>104</td>
<td>83.4</td>
<td>38</td>
<td>30</td>
</tr>
<tr>
<td>115. ▲</td>
<td>68.2</td>
<td>906.462.2.2</td>
<td>75</td>
<td>116</td>
<td>104</td>
<td>83.4</td>
<td>38</td>
<td>30</td>
</tr>
<tr>
<td>175. ▲</td>
<td>68.3</td>
<td>906.462.3.2</td>
<td>175</td>
<td>216</td>
<td>204</td>
<td>183.3</td>
<td>150</td>
<td>100</td>
</tr>
</tbody>
</table>

Metallic flange brackets with common hole patterns can easily replace alternatives, without having to alter the hole pattern. Flush attachment possibilities at both ends of the e-tube using flange mounting brackets made of steel.

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

More information ► www.igus.co.uk/R68

---

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

www.igus.co.uk/E2R
As standard separators are fitted every 2nd e-tube link!

No lateral gap to side links necessary.

Option 1 | Separators
Standard separator
For simple vertical subdivision. Offers security due to its wide base design, also when used with large cables or hoses.
Not suitable for bend radius R 100!

Separator for radius R 100
If you select this bend radius please use this separator for a vertical subdivision.

Option 2 | Full-width shelves
Slotted separator for full-width shelves
Vertical separation in e-tubes. The slot allows basic vertical and horizontal shelving arrangements.

Slotted separator, wide base
If a wide space between the separators has to be kept or separators have to be fixed in their position.

Full-width shelf
This option is for applications with many small cables with different heights. For full-width separation.

Option 3 | Partial shelves
Slotted separator for partial shelves
Allows modular shelving arrangements.

Slotted side plate
Allows modular shelving right up to the side links. No clearance required!

Shelf
For applications involving many cables with different diameters, shelves can be fitted at different heights.

476 More information ➤ www.igus.co.uk/R68 477 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E2R
R2.1
Cost-effective swarf protection

Advantages of the R2.1 system:
- Very light, ideal for high dynamics
- Large inner height and therefore cost-effective
- Cables are protected from swarf
- Easy to fill, lids openable along the inner or outer radius, from both sides
- Low noise operation due to integrated brake
- Notch separator, recommended for side-mounted applications

When to use another e-tube:
- Extremely swarf-resistant according to IP40
  - RX e-tubes, page 502
- For higher fill weights and unsupported lengths
  - R4.1L e-tubes, page 524
E-tubes with igumid HT-Material for hot swarf up to +850°C available upon request
UL94-V0 classifications upon request
Electrically conductive ESD e-tubes upon request

Sealed and universal: enclosed KMA mounting bracket with attachment from any side
Edge-free: smooth design, swarf cannot get stuck
Fast assembly: lids openable along the inner or outer radius, from both sides
Notch separator: recommended for side-mounted applications
Protected: covered pin/bore connection
Quiet operation: due to integrated brake
Light with a large inner height: good ratio of outer to inner dimensions
Strong: double stop-dog system for long unsupported lengths

Cost-effective swarf protection - R2.1 e-tubes

Cost-effective, strong e-tubes with 26, 40, 48 and 75mm inner height. Openable and removable lids along inner or outer radius, openable from both sides. Very sealed design and strong double stop-dogs for high fill weights and unsupported lengths.

- Large inner height and therefore cost-effective
- Cables are protected from swarf
- Easy to fill, lids openable along the inner or outer radius, from both sides
- Low noise operation due to integrated brake
- Notch separator, recommended for side-mounted applications

Typical industries and applications
- Machine tools
- Wood processing machines
- Textile machines
- General mechanical engineering
- In all areas with dirt and swarf

More information ► www.igus.co.uk/R2.1

R2.1 e-tubes | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2i.26</td>
<td>26</td>
<td>50 - 75</td>
<td>66 - 91</td>
<td>36</td>
<td>060 - 250</td>
<td>2.00</td>
<td>486</td>
</tr>
<tr>
<td>R2i.40</td>
<td>40</td>
<td>50 - 75</td>
<td>66.2 - 91.2</td>
<td>54</td>
<td>080 - 250</td>
<td>2.75</td>
<td>490</td>
</tr>
<tr>
<td>R2i.48  New</td>
<td>48</td>
<td>115</td>
<td>135</td>
<td>64</td>
<td>100 - 250</td>
<td>2.75</td>
<td>494</td>
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<tr>
<td>R2i.75</td>
<td>75</td>
<td>111 - 200</td>
<td>135 - 224</td>
<td>90</td>
<td>130 - 250</td>
<td>3.00</td>
<td>498</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

R2.1 e-tubes - lids openable along the inner radius, from both sides

 Ideal for areas with swarf - R2.1 e-tubes are extremely tightly sealed!

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R2.1

More information ► www.igus.co.uk/R2.1
R2.1 e-tubes | Features | Accessories

**Features**
- **Pivoting and locking KMA mounting brackets** for strong connection of the e-tube to the machine.
- **Ideal for areas with swarf** - R2.1 e-tubes are extremely tightly sealed.
- **Special brake in the stop-dogs** reduces noise level by up to 3dB(A).
- **Aluminium support tray** for support of the lower run available upon request.
- **Lean separators enable extremely fast cable filling in several layers.**
- **Pivoting and locking KMA mounting brackets** for strong connection of the e-tube to the machine.
- **Ideal for areas with swarf** - R2.1 e-tubes are extremely tightly sealed.
- **Special brake in the stop-dogs** reduces noise level by up to 3dB(A).
- **Aluminium support tray** for support of the lower run available upon request.
- **Lean separators enable extremely fast cable filling in several layers.**

**R2.1 e-tubes | Technical data | Overview**

**Technical data**

- **Speed gliding / acceleration gliding** upon request.
- **Speed $FL_a$ / acceleration $FL_a$** $\leq 10 \text{ [m/s]} / \leq 100 \text{ [m/s]}^2$.
- **Speed $FL_b$ / acceleration $FL_b$** $\leq 3 \text{ [m/s]} / \leq 6 \text{ [m/s]}^2$.
- **Material - permitted temperature °C, igumid G** -40°C / +120°C.
- **Flammability class, igumid G** VDE 0304 IIC UL94-HB.

- $FL_a = $ unsupported with straight upper run.
- $FL_b = $ unsupported with permitted sag.

1) Gliding applications for long travels are available upon request, please consult igus®.

**Installation types, maximum travels**

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side-mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>R2.26 / R2i.26</td>
<td>$\leq 4.0m$</td>
<td>$\leq 30m$</td>
<td>$\leq 2.0m$</td>
<td>$\leq 0.7m$</td>
</tr>
<tr>
<td>R2.40 / R2i.40</td>
<td>$\leq 5.5m$</td>
<td>$\leq 40m$</td>
<td>$\leq 3.0m$</td>
<td>$\leq 1.0m$</td>
</tr>
<tr>
<td>R2.48 / R2i.48</td>
<td>$\leq 5.5m$</td>
<td>$\leq 50m$</td>
<td>$\leq 3.0m$</td>
<td>$\leq 1.0m$</td>
</tr>
<tr>
<td>R2.75</td>
<td>$\leq 6.0m$</td>
<td>$\leq 50m$</td>
<td>$\leq 5.0m$</td>
<td>$\leq 2.0m$</td>
</tr>
</tbody>
</table>
R2.1 e-tubes | Options and order keys

Options with order keys | Examples based on series R2.75

<table>
<thead>
<tr>
<th>Standard</th>
<th>NC version - (No Camber) without pretension</th>
<th>No burning-in of hot swarf up to +850°C (+1562°F)</th>
<th>ESD - electrically conductive material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>Standard</td>
<td>Part No. igumid HT</td>
<td>Part No. igumid ESD</td>
</tr>
<tr>
<td>R2.75.111.R.0</td>
<td>R2.75.111.R.0.NC</td>
<td>R2.75.111.R.0.HT</td>
<td>R2.75.111.R.0.ESD</td>
</tr>
</tbody>
</table>

Ready to ship* in 24 - 48hrs.  
Delivery time*  
Delivery time*  
Delivery time*  

<table>
<thead>
<tr>
<th>R2.1 e-tubes</th>
<th>Application example</th>
</tr>
</thead>
</table>

igus® R2.1 e-tube in operation in a fast stamping and bending machine to guide servo and encoder cables.

Order example | Order key and colour examples | Examples based on series R2.75

Order example for complete e-tube (1.0m), colour black, with mounting brackets and interior separation:

<table>
<thead>
<tr>
<th>e-tube (1.0m)</th>
<th>Please indicate e-tube length or number of links: 1.0m or 17 links</th>
<th>R2.75.111.130.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>KMA - 1 set</td>
<td>R2.75.111.12</td>
</tr>
<tr>
<td>Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
<td>2 x 75.1.1</td>
</tr>
</tbody>
</table>

Order text:  
1 m R2.75.111.130.0 + R2.75.111.12 + 2 x 75.1.1

Order key

Operable along the outer radius, from both sides  
Part No. R2.75.111.130.0  

Order index for colour options

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard</td>
<td>Orange</td>
<td>Special colour</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour</td>
<td>Yellow</td>
<td>Special colour</td>
</tr>
<tr>
<td>White</td>
<td>Special colour</td>
<td>Light grey</td>
<td>Special colour</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-tubes available from stock.  
Above special colours upon request.
e-tubes | Series R2.26 | Lids openable along the inner radius, from both sides
e-tubes | Series R2.26 | Lids openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No. e-tubes</th>
<th>Part No. e-tubes</th>
<th>Available bend radii</th>
<th>R2.26</th>
<th>R2.26</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>openable along</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the inner radius</td>
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<td></td>
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<td>R2.26.025_R.0**</td>
<td>R2.26.025_R.0**</td>
<td>25 41</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>openable along</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>the outer radius</td>
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<td></td>
</tr>
<tr>
<td>R2.26.130_R.0**</td>
<td>R2.26.130_R.0**</td>
<td>130 146</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: R2i.26.050.060.0

---

**Hot swarf up to +850°C**
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information: [www.igus.co.uk/HT](http://www.igus.co.uk/HT)

---

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-tube
- Open design - dirt and debris fall through

Available upon request. Please consult igus® for delivery time.
R2.1 e-tubes | Series R2i.26-R2.26 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting | Locking

KMA, pivoting
Recommended for unsupported applications

KMA, locking
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA</th>
<th>Part No. full set KMA</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B/ [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>025.</td>
<td>R2.260.025.56</td>
<td>one end pivoting</td>
<td>34.5</td>
<td>43</td>
<td>25</td>
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<tr>
<td>038.</td>
<td>R2.260.038.56</td>
<td>both ends locking</td>
<td>47.5</td>
<td>56</td>
<td>38</td>
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<tr>
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</table>

(KMA = polymer metal mounting bracket)

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted please add index A.

Order example:
R2.260.050.12.A

R2.1 e-tubes | Series R2i.26-R2.26 | Accessories

Interior separation | Increase cable service life

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-tube link!

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-tube
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. R2.26.Z. More information ► From page 1326

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/R2i.26 ► www.igus.co.uk/R2.26

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R2.1
R2.1 e-tubes | Series R2i.40-R2.40 | Product range
Cost-effective swarf protection

- e-tubes | Series R2.40 | Lids openable along the inner radius, from both sides
- e-tubes | Series R2.40 | Lids openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Available bend radii</th>
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</thead>
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<td>R2.40</td>
<td>R2.40</td>
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<tr>
<td>mm</td>
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<td>kg/m</td>
<td>kg/m</td>
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<td>R2.40.075 .R.0</td>
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<td>R2.40.125 .R.0**</td>
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<td>R2.40.200 .R.0**</td>
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<td>2.75</td>
</tr>
</tbody>
</table>

**Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: R2.40.075.080.0

- Hot swarf up to +850°C
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material

More information ▶ www.igus.co.uk/HT

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-tube
- Open design - dirt and debris fall through

Available upon request. Please consult igus® for delivery time.
R2.1 e-tubes | Series R2i.40·R2.40 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

**KMA, pivoting**
Recommended for unsupported applications

**KMA, locking**
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B/</th>
</tr>
</thead>
<tbody>
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<td>R2.40.050.56</td>
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<td>150.0</td>
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<tr>
<td>175.0</td>
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<td>R2.40.200.12</td>
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<td>212</td>
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</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

---

**Strain relief**
E.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

---

**R2.1 e-tubes | Series R2i.40·R2.40 | Accessories**

**Interior separation | Increase cable service life**

---

**Part No. R2.40.12.075.56.A**
Order example
A to indicate option with brackets pre-fitted
Full set
Width Index
Series

---

**Lean separators**
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-tubes.

---

**Separator with integrated strain relief teeth**
- Can be integrated into the mounting bracket or placed at any point in the e-tube
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws
Part No. R2.40.2. More information ► From page 490

---

**More information ► www.igus.co.uk/R2.40 ► www.igus.co.uk/R2.40**

---

**3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R2.1**
**Width available upon request. Please consult igus® for delivery time.**

Complete Part No. with required radius (R). Example: **R2i.48,115.100.0**

### Available bend radii

<table>
<thead>
<tr>
<th>Part No. e-tubes available along the inner radius</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
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<tbody>
<tr>
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<td>70</td>
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<td>R2.48, 075,R.0**</td>
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<td>95</td>
<td>100</td>
<td>125</td>
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<td>175</td>
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<td>R2.48, 100,R.0**</td>
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<td>R2.48, 115,R.0</td>
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<td>R2.48, 125,R.0**</td>
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</tbody>
</table>

**Available bend radii**

- **e-tubes** Series R2i.48: Lids openable along the inner radius, from both sides
- **e-tubes** Series R2.48: Lids openable along the outer radius, from both sides

**Hot swarf up to +850°C**

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT® (high-performance HT material)

[More information](https://www.igus.co.uk/HT)

**Aluminium support tray**

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-tube
- Open design - dirt and debris fall through

Available upon request. Please consult igus® for delivery time.
KMA, pivoting
Recommended for unsupported applications
KMA, locking
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA one end pivoting</th>
<th>Part No. full set KMA both ends locking</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>B/ [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>050. In.</td>
<td>R2.480.050.56</td>
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<td>075. In.</td>
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<td>100. In.</td>
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<td>175. In.</td>
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<td>250</td>
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</tbody>
</table>

(KMA = polymer metal mounting bracket) *Width available upon request. Please consult i-ku for delivery time.

Order example R2.480.115.56 A to indicate option with brackets pre-fitted. Please add index A.

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted please add index A.

Width = X
Shelves
<table>
<thead>
<tr>
<th>Width = X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
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<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
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<tr>
<td>075</td>
<td>3200.075</td>
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<tr>
<td>250</td>
<td>3200.250</td>
<td>3210.250</td>
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</tbody>
</table>

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-tubes.

Lean separator design - several layers of cables fitted quickly, save up to 50% assembly time
(Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

More information ➤ www.igus.co.uk/R2i.48 ➤ www.igus.co.uk/R2.48

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/R2.1
Cost-effective swarf protection

e-tubes | Series R2.75 | Lids openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No. e-tubes openable along the outer radius</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>R2.75</th>
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</thead>
<tbody>
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<td>R2.75.111.R,0</td>
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<td>135</td>
<td>[130, 150, 200, 250, 300*, 350*, 400*]</td>
<td>3.175</td>
</tr>
<tr>
<td>R2.75.163.R,0</td>
<td>163</td>
<td>187</td>
<td>[130, 150, 200, 250, 300*, 350*, 400*]</td>
<td>3.672</td>
</tr>
<tr>
<td>R2.75.200.R,0</td>
<td>200</td>
<td>224</td>
<td>[130, 150, 200, 250, 300*, 350*, 400*]</td>
<td>4.012</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: R2.75.111.130.0

- Hot swarf up to +850°C
  - e-tubes to withstand 850°C swarf, as a special option
  - No hot swarf melting or embedding into the chain
  - igus® igumid HT material

More information ➤ www.igus.co.uk/HT

- Aluminium support tray
  - Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
  - Noise-reducing glide strip integrated as standard
  - Easy installation and connection of the e-tube
  - Open design - dirt and debris fall through

Available upon request. Please consult igus® for delivery time.
R2.1 e-tubes | Series R2.75 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting

**KMA pivoting**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part no. full set</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>R2.750.111.12</td>
<td>–</td>
<td>141</td>
<td>127</td>
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<td>163</td>
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<td>R2.750.200.12</td>
<td>–</td>
<td>230</td>
<td>216</td>
<td>200</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket)

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted please add index .A

**Order example**

R2.750.111.12.A

**Strain relief**

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

R2.1 e-tubes | Series R2.75 | Accessories
Interior separation | Increase cable service life

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-tube link!

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-tube.

**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
<td>3200.115</td>
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<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
<td>3200.125</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
<td>3200.150</td>
</tr>
</tbody>
</table>

(©) R2.1 e-tubes | Series R2.75 | Accessories

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/R2.1

More information ► www.igus.co.uk/R2.75
Advantages of the RX system:
- Openable along the outer radius
- Round contour prevents swarf accumulation
- Injection-moulded seal between links
- No holes, gaps or undercuts
- RX e-tubes - IP40 tested
- Covered pin/bore connection and stop-dogs
- Interior separation and support tray available
- RBR version with Reverse Bend Radius available

When to use another e-tube:
- For swarf protection on gliding applications
  - R4.1 e-tubes, page 566
- When a particularly cost-effective solution is required
  - R2.1 e-tubes, page 478
RX e-tubes | Introduction | Advantages

Extremely swarf-resistant e-tubes - RX system

Problem solver for energy supply systems in areas with swarf; openable along the outer radius. Swarf and dirt can significantly reduce the service life of cables and hoses. With the RX system igus® offers an extremely tough but smoothly shaped polymer e-tube.

- Openable along the outer radius
- Round contour prevents swarf accumulation
- Injection-moulded seal between links
- No holes, gaps or undercuts
- Covered pin/bore connection and stop-dogs
- Series RX40 has been tested for IP protection class (IP40) (TÜV NORD CERT GmbH)
- RBR version with Reverse Bend Radius available

Typical industries and applications

- Machine tools
- All applications in swarf area
- With dust and dirt
- General mechanical engineering

Flush attachment: mounting bracket with strain relief option

Smooth design: without undercuts or edges

Keep order: modular separation available

Fast assembly: lids removable along the outer radius

Safe: covered pin/bore connection and stop-dogs

Fast opening: with inbuilt locking mechanism

Swarf-resistant design: round contour prevents swarf accumulation

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/RX

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/RX
RX e-tubes | Technical data | Overview

Technical data

| Speed FL₀ / acceleration FL₀ | ≤ 10 [m/s] / ≤ 100 [m/s²] |
| Speed FL₂ / acceleration FL₂ | ≤ 3 [m/s] / ≤ 6 [m/s²] |
| Material - permitted temperature °C, igumid G | -40°C / +120°C |
| Flammability class, igumid G | VDE 0304 IIC UL94-HB |

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX32</td>
<td>≤ 3.40m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>RX40</td>
<td>≤ 3.80m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>RX48</td>
<td>≤ 4.20m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>RX56</td>
<td>≤ 4.60m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

**RX e-tubes | Options and order keys**

Options with order keys | Examples based on series RX40

**Standard**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. RBR</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX40.100.R.0</td>
<td>RX40.100.R1/R2.0</td>
<td>RX40.100.R.0.HT</td>
<td>RX40.100.R.0.ESD</td>
</tr>
</tbody>
</table>

**Reverse Bend (RBR) for circular movements**

<table>
<thead>
<tr>
<th>Delivery time*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ready to ship* in 24 - 48hrs.</td>
</tr>
<tr>
<td>Delivery time* 5-10 business days</td>
</tr>
<tr>
<td>Delivery time* 7-10 business days</td>
</tr>
<tr>
<td>Delivery time* 10 business days</td>
</tr>
</tbody>
</table>

**No burning-in of hot swarf up to +850°C (+1562° F)**

**ESD - electrically conductive material**

**Order example | Order key and colour examples**

Order example for complete e-tube (1.0m), colour black, with mounting brackets and interior separation:

<table>
<thead>
<tr>
<th>e-tube (1.0m)</th>
<th>Please indicate e-tube length or number of links: 1.0m or 18 links</th>
<th>RX40.100.100.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>Set</td>
<td>RX40.100.12ZB</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 1 separator (central position) assembled every 2nd link</td>
<td>1 x RX40.1.1</td>
</tr>
<tr>
<td>+ Interior separation</td>
<td>with 2 separators (lateral position) assembled every 2nd link</td>
<td>2 x RX40.2.1</td>
</tr>
</tbody>
</table>

Order text:

1 m RX40.100.140.0 + RX40.100.12ZB + 1 x RX40.1.1 + 2 x RX40.2.1

**Order key**

- e-tube - lids removable along the outer radius
- Sealed - various tube styles were tested under water. For the RX e-tube, it takes more than 30 sec. to fill up with water
- Swarf ingress - various tube styles were covered with a defined quantity of swarf. After 251,900 cycles, only 2.7 g of swarf were found on the interior of the RX tube

Above special colours upon request.

Options with order keys | Examples based on series RX40

**Order example for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard</td>
<td>Orange</td>
<td>Special</td>
</tr>
<tr>
<td>Special colour</td>
<td>.0</td>
<td>Special colour</td>
<td>.2</td>
</tr>
<tr>
<td>Series / Type</td>
<td>Series / Type</td>
<td>Series / Type</td>
<td>Series / Type</td>
</tr>
<tr>
<td>Width index (depends on 6)</td>
<td>Width index (depends on 6)</td>
<td>Width index (depends on 6)</td>
<td>Width index (depends on 6)</td>
</tr>
<tr>
<td>Bend radius R</td>
<td>Bend radius R</td>
<td>Bend radius R</td>
<td>Bend radius R</td>
</tr>
<tr>
<td>Colour index (standard black)</td>
<td>Colour index (standard black)</td>
<td>Colour index (standard black)</td>
<td>Colour index (standard black)</td>
</tr>
</tbody>
</table>

More information ► [www.igus.co.uk/RX](http://www.igus.co.uk/RX)  3D CAD, configurators, service life calculation and more ► [www.igus.co.uk/RX](http://www.igus.co.uk/RX)
**RX e-tubes | Series RX32 | Product range**

Extremely swarf-resistant, medium size

**RX e-tubes | Series RX32 | Lids removable along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>$B_i$</th>
<th>$B_a$</th>
<th>$R$ Available bend radii</th>
<th>$B_G$</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX32. 080.R.0</td>
<td>80</td>
<td>98.4</td>
<td>080</td>
<td>100</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius [R]. Example: RX32.080.080.0

**Installation dimensions**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
</tr>
</thead>
<tbody>
<tr>
<td>080</td>
<td>RX321.080.12ZB</td>
<td>RX321.080.12</td>
</tr>
</tbody>
</table>

**Mounting brackets, flange | Locking**

**Strain relief**

*Radius available upon request. Please consult igus® for delivery time.

The required clearance height: $H_F = H + 50$mm (with 0.5kg/m fill weight)

<table>
<thead>
<tr>
<th>$R$</th>
<th>080</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>225</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H$</td>
<td>216</td>
<td>256</td>
<td>306</td>
<td>356</td>
<td>406</td>
<td>456</td>
<td>506</td>
<td>556</td>
</tr>
<tr>
<td>$D$</td>
<td>156</td>
<td>176</td>
<td>201</td>
<td>226</td>
<td>251</td>
<td>276</td>
<td>301</td>
<td>326</td>
</tr>
<tr>
<td>$K$</td>
<td>320</td>
<td>380</td>
<td>460</td>
<td>540</td>
<td>615</td>
<td>695</td>
<td>775</td>
<td>850</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

More information ► www.igus.co.uk/RX32

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/RX
**Interior separation**

Vertical separation - slotted separators:

- RX32.1 (central position)
- RX32.2 (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2nd e-tube link!

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Shelves**

- Width: X [mm]
- Unassembled: 520.XX
- Assembled: 521.XX

<table>
<thead>
<tr>
<th>Table</th>
<th>X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>024</td>
<td>520.24</td>
<td>521.24</td>
<td>520.64</td>
</tr>
<tr>
<td>044</td>
<td>520.44</td>
<td>521.44</td>
<td>520.84</td>
</tr>
</tbody>
</table>

**Further accessories**

- **Hot swarf up to +850°C**
- Steel support tray for support of the lower run
- Strain relief block for flange mounting brackets
- Supply of the main spindle in a tooling machine with igus® RX e-tube. The rounded contour of the energy supply repels all kinds of swarf

More information on [www.igus.co.uk/RX32](http://www.igus.co.uk/RX32) and [www.igus.co.uk/RX](http://www.igus.co.uk/RX)
RX e-tubes | Series RX40 | Product range
Extremely swarf-resistant, medium size

e-tubes | Series RX40 | Lids removable along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX40. 100.R.0</td>
<td>100</td>
<td>123</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>e-tubes</th>
<th>Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX40. 100.R.0</td>
<td>1.85</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius [R]. Example: RX40.080.080.0

Installation dimensions

- Inner height [mm]: 52
- Pitch [mm/4]: 40
- Links/m: 25
- Corresponds to: 1,000 e-tube length
- \( L_e \approx \frac{H}{2} + K \)

Mounting brackets, flange | Locking

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>100.</td>
<td>RX401.100.1ZB</td>
<td>RX401.100.12</td>
<td>10</td>
</tr>
</tbody>
</table>

Order example
- RX401.100.1ZB.A | To indicate option with brackets pre-fitted with integrated strain relief tiewrap plates
- RX401.100.12.ZB.A | Full set
- RX401.100.1ZB.A | Width index
- RX401.100.1ZB.A | Series

Strain relief
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ❯ From page 1300
**RX e-tubes | Series RX40 | Accessories**

**Interior separation**

Vertical separation - slotted separators:
- **RX40.1** (central position)
- **RX40.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2nd e-tube link!

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>029</td>
<td>520.29</td>
<td>521.29</td>
<td>079</td>
<td>520.79</td>
<td>521.79</td>
<td></td>
</tr>
<tr>
<td>054</td>
<td>520.54</td>
<td>521.54</td>
<td>104</td>
<td>520.104</td>
<td>521.104</td>
<td></td>
</tr>
</tbody>
</table>
RX e-tubes | Series RX48 | Product range
Extremely swarf-resistant, large size

RX e-tubes | Series RX48 | Lids removable along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX48, 120.R.0</td>
<td>120</td>
<td>147.6</td>
<td>120</td>
</tr>
</tbody>
</table>

Installation dimensions

Moving end
Fixed end

RX e-tubes | Series RX48 | Accessories
Mounting brackets, flange | Polymer, two-piece | Locking

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

Further information ▶ www.igus.co.uk/RX48
### Interior separation

Vertical separation - slotted separators:

- **RX48.1** (central position)
- **RX48.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2\(\text{nd}\) e-tube link!

### Horizontal separation

- **Slotted separator** (central position)
- **Slotted separator** (lateral position)

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

### Shelves

<table>
<thead>
<tr>
<th>Width = X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>034</td>
<td>520.34</td>
<td>521.34</td>
</tr>
<tr>
<td>064</td>
<td>520.64</td>
<td>521.64</td>
</tr>
</tbody>
</table>

### Further accessories

**Hot swarf up to +850°C**

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain

More information ► [www.igus.co.uk/HT](http://www.igus.co.uk/HT)

**Steel support tray for support of the lower run**

- Simple one-piece support trays for the lower run
- Guides the RX e-tube safely and lets the swarf pass through easily
- Available in different lengths

More information ► [www.igus.co.uk/RX](http://www.igus.co.uk/RX)

**Strain relief block for flange mounting brackets**

- Strain relief block to match cable layout
- Fast assembly
- Can be integrated in the RX e-tube flange mounting bracket

More information ► [www.igus.co.uk/RX48](http://www.igus.co.uk/RX48)

With the extremely swarf-resistant igus® RX e-tube and harnessed chainflex® cables, the service life of this woodworking machine was considerably increased. Because of dust and dirt, previous cables failed after one month.
RX e-tubes | Series RX56 | Product range
Extremely swarf-resistant, very large size

Comprehensive information on RX e-tubes can be found in the series RX56.

E-tubes | Series RX56 | Lids removable along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-tubes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RX56. 140_R.0</td>
<td>140</td>
<td>172.2</td>
<td>140</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius [R]. Example: RX56.140.R.0

Installation dimensions

<table>
<thead>
<tr>
<th>R</th>
<th>140</th>
<th>175°</th>
<th>200°</th>
<th>225°</th>
<th>250</th>
<th>275°</th>
<th>300°</th>
<th>325°</th>
<th>350°</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>378</td>
<td>448</td>
<td>498</td>
<td>548</td>
<td>598</td>
<td>648</td>
<td>698</td>
<td>748</td>
<td>798</td>
</tr>
<tr>
<td>D</td>
<td>273</td>
<td>308</td>
<td>333</td>
<td>358</td>
<td>383</td>
<td>408</td>
<td>433</td>
<td>458</td>
<td>483</td>
</tr>
<tr>
<td>K</td>
<td>555</td>
<td>665</td>
<td>745</td>
<td>820</td>
<td>900</td>
<td>980</td>
<td>1,055</td>
<td>1,135</td>
<td>1,215</td>
</tr>
</tbody>
</table>

The required clearance height: \( H_F = H + 50 \text{ mm} \) (with 0.5 kg/m fill weight)

*Radius available upon request. Please consult igus® for delivery time.

RX e-tubes | Series RX56 | Accessories
Mounting brackets, flange | Polymer, two-piece | Locking

Mounting brackets, flange | Locking

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>140. G</td>
<td>upon request</td>
<td>RX561.140.12</td>
<td>upon request</td>
</tr>
</tbody>
</table>

Order example

RX561.140.12.A

Flange mounting brackets for flush attachment. Option: with M8 insert nuts. To receive brackets pre-fitted please add index A

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/RX56

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/RX

520
**Interior separation**

Vertical separation - slotted separators:
- **RX56.1** (central position)
- **RX56.2** (lateral position)

Vertical separation of the interior space using cable-friendly, polymer separators. Due to their slots, basic vertical and horizontal shelving arrangements are possible. As standard separators are fitted every 2\(^{nd}\) e-tube link!

Horizontal separation
- Shelf, lockable

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

<table>
<thead>
<tr>
<th>Shelves</th>
<th>Width = X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>X [mm]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>039</td>
<td>520.39</td>
<td>521.39</td>
<td>520.109</td>
<td>521.109</td>
<td></td>
</tr>
<tr>
<td>074</td>
<td>520.74</td>
<td>521.74</td>
<td>520.144</td>
<td>521.144</td>
<td></td>
</tr>
</tbody>
</table>

**Steel support tray for support of the lower run**
- Simple one-piece support trays for the lower run
- Guides the RX e-tube safely and lets the swarf pass through easily
- Available in different lengths

More information ➤ www.igus.co.uk/RX

**Strain relief block for flange mounting brackets**
- Strain relief block to match cable layout
- Fast assembly
- Can be integrated in the RX e-tube flange mounting bracket

More information ➤ www.igus.co.uk/RX56

**Hot swarf up to +850°C**
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information ➤ www.igus.co.uk/HT

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/RX

The RX e-tube used in this compact turning machine has Reverse Bend Radius (RBR) and operates even with the very restricted space.
E4.1L
Reduce cost, time and weight
Moving energy made even easier - fast harnessing and time-less design

Advantages of the E4.1L system:
- 30% lighter and lower-priced than comparable E4.1 size
- Very cost-efficient: strong and light due to optimised e-chain® link design
- Ideal ratio of internal and external dimensions with thinner outer links and optimised crossbar geometry
- e-chains® and e-tubes openable along the inner and outer radius, from both sides
- Inside completely accessible for easy filling
- Very tightly fitting lids on the e-tubes, virtually no gaps or openings
- Also suitable for side-mounted, standing and hanging applications

When to use another e-chain® series:
- When the e-chain® needs to be extremely quiet (32dB(A)) with very low vibration
  ▶ E6.1, from page 750
- When the e-chain® is to be used in cleanrooms (cleanroom ISO Class 1)
  ▶ E6.1, from page 750
- If even higher strength is required
  ▶ E4.1, from page 566
E4.1L | Introduction | Advantages

**Reduce cost, time and weight - E4.1L**

Significantly reduce assembly and harnessing time with the E4.1L(Lean). Whether as an e-chain® or a chip-proof energy tube, with its sleek design and matching accessories the E4.1L brings maximum efficiency at a cost-effective price. An easily accessible interior, improved crossbars and separators and the new honeycomb strain relief system result in an 80% faster installation. Easily adaptable to any application due to the modular design, this universal solution makes optimal use of the space, is lighter than the alternatives and yet extremely strong. A cable-friendly interior ensures a long service life for the cables. The E4.1L reduces downtime and the assembly and maintenance time whilst saving time and money in operation and acquisition.

**Typical industries and applications**
- Machine tools
- General mechanical engineering
- If the strength of the E2/000 is insufficient, but an E4.1 is oversized

**E4.1L | Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.31L</td>
<td>31</td>
<td>40 - 175</td>
<td>54 - 189</td>
<td>42</td>
<td>055 - 250</td>
<td>2.00</td>
<td>536</td>
</tr>
<tr>
<td>E4.38L</td>
<td>38</td>
<td>50 - 300</td>
<td>66 - 316</td>
<td>54</td>
<td>063 - 300</td>
<td>2.75</td>
<td>542</td>
</tr>
<tr>
<td>E4.48L</td>
<td>48</td>
<td>50 - 300</td>
<td>70 - 320</td>
<td>64</td>
<td>075 - 350</td>
<td>3.75</td>
<td>550</td>
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<tr>
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<td>87 - 175</td>
<td>113 - 201</td>
<td>84</td>
<td>100 - 400</td>
<td>4.00</td>
<td>560</td>
</tr>
</tbody>
</table>

**E-chains® with crossbars every link**
- Light design, openable along the inner and outer radius, from both sides

**E-tubes, fully enclosed**
- Light design, excellent cable protection, openable along the inner and outer radius, from both sides

---

**What does "Lean" mean in the E4.1L system?**

Making a system "lean" means that its individual components are ideally matched to each other, making it more optimised. The aim is to avoid waste and increase efficiency. This is achieved in two ways: from the customer’s point of view in order to fulfil their requirements, and from the producer’s point of view in order to improve productivity and efficiency. igus® implements these lean properties in its energy supply systems in order to make time-saving e-chain® assembly possible, while also enabling quick and easy harnessing with cables.
E4.1L | Features | Accessories

E4.1L e-chains® and R4.1L e-tube crossbars, lids and shelves are operable along the inner and outer radius, from both sides.

Lean separators enable extremely fast cable filling in several layers.

Assembled in seconds - honeycomb strain relief CFU. Simply insert cables and hoses into the honeycomb and close.

KMA mounting brackets with attachment options from any side.

Safe parallel guiding of corrugated tubes with the optional, external TUB guidance.

Extension links - for extremely wide e-chains® up to 2.0m with 50% more fill weight.

Flexible extender crossbar range - e-chain® extender with crossbars for enlarging the interior.

Aluminium SuperTrough - the standard igus® guide trough ► From page 1208

Aluminium and steel support tray for support of the lower run ► From page 1264

E4.1L | Technical data | Overview

**Technical data**

| Speed gliding<sup>1)</sup> / acceleration gliding<sup>1)</sup> | ≤ 5 [m/s] / ≤ 25 [m/s²] |
| Speed FL<sub>G</sub> / acceleration FL<sub>G</sub> | ≤ 20 [m/s] / ≤ 200 [m/s²] |
| Speed FL<sub>B</sub> / acceleration FL<sub>B</sub> | ≤ 3 [m/s] / ≤ 6 [m/s²] |

| Material | permitted temperature °C, igumid G |
| -40°C / +120°C |

| Flammability class | igumid G |
| VDE 0304 IIC UL94-HB |

1) Series E4.31L / R4.31L: If a gliding application is required for a long travel, please consult igus®.

<table>
<thead>
<tr>
<th>Installation types, maximum travels</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding&lt;sup&gt;1)&lt;/sup&gt;</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.31L / R4.31L</td>
<td>≤ 4.0m</td>
<td>upon request</td>
<td>≤ 40m</td>
<td>≤ 2.5m</td>
<td>≤ 0.6m</td>
</tr>
<tr>
<td>E4.38L / R4.38L</td>
<td>≤ 5.5m</td>
<td>≤ 80m</td>
<td>≤ 50m</td>
<td>≤ 3.0m</td>
<td>≤ 1.0m</td>
</tr>
<tr>
<td>E4.48L / R4.48L</td>
<td>≤ 7.5m</td>
<td>≤ 100m</td>
<td>≤ 80m</td>
<td>≤ 3.0m</td>
<td>≤ 1.2m</td>
</tr>
<tr>
<td>E4.64L</td>
<td>≤ 4.0m</td>
<td>upon request</td>
<td>≤ 80m</td>
<td>≤ 8.0m</td>
<td>≤ 2.0m</td>
</tr>
</tbody>
</table>

1) Series E4.31L / R4.31L: If a gliding application is required for a long travel, please consult igus®.
**E4.1L | Reduce assembly time with the E4.1L(lean)**

### Interior separation
- **Product A**
- **Time saving**

### Strain relief
- **Product A**
- **Time saving**

### Opening crossbars and lids
- **Product A**
- **Time saving**

---

**E4.1L | The igus® E4.1L(lean) range**

### Time-saving lean separators - New
- The new design of the igus® lean separators allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time.
  - Enable extremely fast replacement of individual cables in a very full e-chain®
  - Several layers of cables fitted quickly
  - Save up to 50%* assembly time

### Assembled in seconds - honeycomb strain relief CFU - New
- 80%* faster strain relief for different cable types in different chambers, fully flexible, with strong holding force and easy assembly.
  - Strain relief of different cables in one slot
  - Modified tribologically optimised honeycomb design for even higher holding force
  - New side sections for assembly and disassembly in seconds
  - Simplified parts
  - Can be used for long travels

### E4.1L - fast to harness
- One of the quickest opening systems make the E4.1L the fastest e-chain® for harnessing.
  - Save up to 67%* assembly time
  - Lower weight, cable-friendly interior and improved ratio of inner to outer size
  - Easy accessibility of the complete inner space, openable from both sides

---

*Serie E4.48L vs. E4.42. Measured in the igus® harnessing factory

---

*Lean interior separation vs. standard interior separation. Measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory

---

*Lean strain relief CFU vs. chainfix CFX. Measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory

---

*Lean strain relief CFU vs. chainfix CFX - time-saving due to the honeycomb structure

---

Save around 50% time*

---

Save around 80% time*

---

Save around 67% time*

---

More information ➤ [www.igus.co.uk/lean](http://www.igus.co.uk/lean)
Order example | Examples based on series E4.38L/R.4.38L

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**

- **e-chain® (1.0m):** Please indicate e-chain® length or number of links: 1.0m or 18 links  
  \[ \text{E4.38L.100.150.0} \]

- **+ Mounting brackets:**  
  1 set (with odd number of links and integrated C-profiles)  
  \[ \text{E4.380.100.1.12.C} \]

- **Interior separation:**  
  with 2 separators assembled every 2nd link  
  \[ 2 \times 38.1.1 \]

**Order text:**  
1m E4.38L.100.150.0 + E4.380.100.1.12.C + 2 x 38.1.1

---

**Order key and colour examples | Examples based on series E4.38L/R.4.38L**

**Order key**

- e-chain® with crossbars every link  
- e-tube, closed  
- e-tube, fully enclosed  
- RBR for e-tubes please consult igus®  
- e-tube, closed

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>0</td>
<td>Orange</td>
<td>2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>0.31</td>
<td>Yellow</td>
<td>4</td>
</tr>
<tr>
<td>White</td>
<td>0.1</td>
<td>Light grey</td>
<td>1.4</td>
</tr>
<tr>
<td>Grey-white</td>
<td>0.15</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock. Above special colours upon request.

---

**Part No.**

- **E4.38L.100.R.0**  
  e-chain® with crossbars every link  
- **E4.38L.100.R.0.NC**  
  e-chain® with crossbars every link  
- **E4.38L.100.R.0.R1/R.2.0**  
  e-chain® with crossbars every link  
- **E4.38L.100.R.0.XXL**  
  e-chain® with crossbars every link  
- **R4.38L.100.R.0**  
  e-tube, closed  
- **R4.38L.100.R.0.NC**  
  e-tube, closed  
- **R4.38L.100.R.0.RBR**  
  e-tube, closed  
- **R4.38L.100.R.0.XXL**  
  e-tube, closed  
- **E4.38L.100.R.0.ESD**  
  e-chain® with crossbars every link  
- **R4.38L.100.R.0.ESD**  
  e-chain® with crossbars every link  
- **R4.38L.100.R.0.HT**  
  e-chain® with crossbars every link  
- **R4.38L.100.R.0.XXL**  
  e-chain® with crossbars every link  
- **igumid HT**  
  igumid ESD
System E4.1L | e-chain® links as individual parts | Overview

Four-piece e-chain® link as individual parts - E4.1L

e-chains®/e-tube link design

Part No. Crossbar(1) Inner radius Outer radius Outer side Inner side
series e-chain® lid e-tube e-tube link(2) link(3) link(2)


E4.64L C824.Bi – – E4.64L.01 E4.64L.02.R

1) Crossbar / lid / shelf - append part number with the desired value in the width index Bi, e.g. C622.150
2) Outer link - suitable for any radius
3) Inner link - Part No. with required radius R. Example: E4.38L.02.150

Available from stock. Ready to ship in 24 - 48 hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

System E4.1L | Assembly instructions

1. Line up inner and outer links alternately ...
2. ... insert the undercut of the outer link into the groove on the inner link and click together
3. Click in crossbars into one side, close them and snap into place
4. To open, insert the screwdriver into the locking mechanism and prise it open outwards

An assembly video available online at
► www.igus.co.uk/E4.1L_assembly
**e-chains® | E4.31L | Crossbars every link** (openable along inner and outer radius, from both sides)

**e-tubes | R4.31L | Fully enclosed** (openable along inner and outer radius, from both sides)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.31L e-chains R4.31L e-tubes</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.31L 040 0.0</td>
<td>–</td>
<td>040</td>
<td>054</td>
<td>0.70</td>
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<tr>
<td>E4.31L 050 0.0</td>
<td>R4.31L 050 0.0</td>
<td>050</td>
<td>064</td>
<td>0.74</td>
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<tr>
<td>E4.31L 062 0.0</td>
<td>–</td>
<td>062</td>
<td>076</td>
<td>0.76</td>
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<tr>
<td>E4.31L 075 0.0</td>
<td>R4.31L 075 0.0</td>
<td>075</td>
<td>089</td>
<td>0.78</td>
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<td>E4.31L 087 0.0</td>
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<td>101</td>
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<tr>
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<td>R4.31L 100 0.0</td>
<td>100</td>
<td>114</td>
<td>0.88</td>
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<tr>
<td>E4.31L 112 0.0</td>
<td>–</td>
<td>112</td>
<td>126</td>
<td>0.90</td>
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<tr>
<td>E4.31L 125 0.0</td>
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<td>139</td>
<td>0.96</td>
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<td>151</td>
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<tr>
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<td>1.00</td>
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<td>R4.31L 175 0.0</td>
<td>175</td>
<td>189</td>
<td>1.13</td>
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<tr>
<td>E4.31L 187 0.0</td>
<td>–</td>
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<td>201</td>
<td>1.17</td>
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<tr>
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<td>R4.31L 200 0.0</td>
<td>200</td>
<td>214</td>
<td>1.17</td>
</tr>
</tbody>
</table>

**Part No.**

- E4.31L
- R4.31L

**Bi [mm]**

- Width available upon request. Please consult igus® for delivery time.

**Ba [mm]**

- Radius not available for e-tubes

**E4.31L e-chains R4.31L e-tubes**

- 040
- 050
- 062
- 075
- 087
- 100
- 112
- 125
- 137
- 150
- 162
- 175
- 187
- 200

**Notes**

1) Radius not available for e-tubes

**Available bend radii**

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>050</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
</tr>
</thead>
<tbody>
<tr>
<td>H [mm]</td>
<td>152</td>
<td>168</td>
<td>192</td>
<td>242</td>
<td>292</td>
<td>342</td>
<td>392</td>
<td>442</td>
<td>542</td>
</tr>
<tr>
<td>D [mm]</td>
<td>145</td>
<td>153</td>
<td>165</td>
<td>190</td>
<td>215</td>
<td>240</td>
<td>265</td>
<td>290</td>
<td>340</td>
</tr>
<tr>
<td>K [mm]</td>
<td>265</td>
<td>290</td>
<td>330</td>
<td>410</td>
<td>485</td>
<td>565</td>
<td>645</td>
<td>725</td>
<td>880</td>
</tr>
</tbody>
</table>

The required clearance height: 

\[ H_r = H + 40 \text{mm} \] (with 1.0 kg/m fill weight)

1) Radius not available for e-tubes

If a gliding application is required for a long travel, please consult igus®.

**If a gliding application is required for a long travel, please consult igus®.**
KMA pivoting
KMA locking
Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>KMA pivoting</th>
<th>KMA locking</th>
<th>Bi [mm]</th>
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<tbody>
<tr>
<td>040</td>
<td>E4.310.040</td>
<td>E4.310.040</td>
<td>040</td>
</tr>
<tr>
<td>050</td>
<td>E4.310.050</td>
<td>E4.310.050</td>
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<tr>
<td>062</td>
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<tr>
<td>075</td>
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<tr>
<td>112</td>
<td>E4.310.112</td>
<td>E4.310.112</td>
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</table>

KMA pivoting
KMA locking
Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>KMA pivoting</th>
<th>KMA locking</th>
<th>Bi [mm]</th>
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</thead>
<tbody>
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<td>050</td>
<td>R4.310.050</td>
<td>R4.310.050</td>
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</tr>
<tr>
<td>075</td>
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</tr>
<tr>
<td>125</td>
<td>R4.310.125</td>
<td>R4.310.125</td>
<td>125</td>
</tr>
</tbody>
</table>

(KMA = polymer metal mounting bracket) For the TS92.31 top-hat (DIN) rail option please add index C.

*Width available upon request. Delivery time upon request. Note: If a gliding application is required for a long travel, please consult igus.*

Strain relief elements with tie-wrap teeth
- Stopped strain relief element outside of the e-chain® cross section
- For e-chains® and e-tubes
- Easy to retrofit
- Simple installation into top hat (DIN) rail 15 (TS92.31)

**Strain relief** e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

538 More information ➤ www.igus.co.uk/E4.31L ➤ www.igus.co.uk/R4.31L

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1L

539
**E4.31L | Series E4.31L-R4.31L | Accessories**

**Interior separation | Increase cable service life**

---

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 6mm | e-chain®: 6mm

As standard separators are fitted every 2nd e-chain® link!

---

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

---

**For even faster installation**

Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

---

**For small cables**

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

---

**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

---

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

**Shelves**

<table>
<thead>
<tr>
<th>Width</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>0125</td>
<td>2300.105</td>
<td>2310.105</td>
</tr>
<tr>
<td>0250</td>
<td>2300.025</td>
<td>2310.025</td>
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<td>0300</td>
<td>2300.030</td>
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</tr>
<tr>
<td>0380</td>
<td>2300.038</td>
<td>2310.038</td>
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<td>0410</td>
<td>2300.041</td>
<td>2310.041</td>
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<td>0500</td>
<td>2300.050</td>
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</tr>
<tr>
<td>0570</td>
<td>2300.057</td>
<td>2310.057</td>
</tr>
</tbody>
</table>

---

**Lean separators**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

---

**Separator with integrated strain relief teeth**

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any tools

Part No. 31.Z. More information ➤ From page 1326

---

**Aluminium support tray**

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ From page 1270

---

**Swarf up to +850°C**

- e-tubes to withstand +850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information ➤ www.igus.co.uk/HT
### Part No. | Bi [mm] | Ba [mm] | E4.38L | R4.38L
--- | --- | --- | --- | ---
E4.38L 050.0 | 050 | 066 | 1.13 | 1.20
E4.38L 062.0 | 062 | 078 | 1.19 | –
E4.38L 075.0 | 075 | 091 | 1.30 | 1.38
E4.38L 087.0 | 087 | 103 | 1.30 | –
E4.38L 100.0 | 100 | 116 | 1.37 | 1.60
E4.38L 105.0 | 105 | 125 | 1.39 | –
E4.38L 112.0 | 112 | 138 | 1.44 | –
E4.38L 125.0 | 125 | 141 | 1.50 | 1.75
E4.38L 137.0 | 137 | 153 | 1.56 | –
E4.38L 150.0 | 150 | 166 | 1.65 | 1.90
E4.38L 162.0 | 162 | 178 | 1.69 | –
E4.38L 175.0 | 175 | 191 | 1.74 | 2.10
E4.38L 187.0 | 187 | 203 | 1.80 | –
E4.38L 200.0 | 200 | 216 | 1.86 | 2.29
E4.38L 212.0 | 212 | 228 | 1.90 | –

**Width available upon request. Please consult igus.**

### Part No. | Part No. | Bi [mm] | Ba [mm] | E4.38L | R4.38L
--- | --- | --- | --- | --- | ---
E4.38L 225.0 | – | – | 225 | 241 | 1.97
E4.38L 237.0 | – | – | 237 | 253 | 2.05
E4.38L 250.0 | – | – | 250 | 266 | 2.11
E4.38L 262.0 | – | – | 262 | 278 | 2.15
E4.38L 275.0 | – | – | 275 | 291 | 2.22
E4.38L 287.0 | – | – | 287 | 303 | 2.30
E4.38L 300.0 | – | – | 300 | 316 | 2.36
E4.38L 312.0 | – | – | 312 | 328 | 2.40
E4.38L 325.0 | – | – | 325 | 341 | 2.47
E4.38L 337.0 | – | – | 337 | 353 | 2.55
E4.38L 350.0 | – | – | 350 | 366 | 2.67
E4.38L 362.0 | – | – | 362 | 378 | 2.69
E4.38L 375.0 | – | – | 375 | 391 | 2.65
E4.38L 387.0 | – | – | 387 | 403 | 2.76
E4.38L 400.0 | – | – | 400 | 416 | 2.83

**Radius available upon request. Please consult igus.**

### Available bend radii

<table>
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<th>R [mm]</th>
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**Swarf up to +850°C**
- e-tubes to withstand +850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information: [www.igus.co.uk/HT](http://www.igus.co.uk/HT)
KMA pivoting KMA locking
Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

### Width Index

<table>
<thead>
<tr>
<th>Width Index</th>
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KMA = polymer metal mounting bracket. For the C-profile option please add index .C

*Width available upon request. Please consult igus® for delivery times.

---

KMA pivoting KMA locking
Recommended for unsupported and gliding applications
Recommended for vertical hanging and standing applications

### Width Index

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<th>Bi</th>
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</tbody>
</table>

KMA = polymer metal mounting bracket. For the C-profile option please add index .C

*Width available upon request. Please consult igus® for delivery times.

---

**Note:**
- The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index A for odd or B for even depending on an even or odd number of links required. Please add the index A2 for the preassembled standard version, with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

**Order example:**
1. E4.380.10012C *A2: C-profile option*
2. E4.380.10012C

**Strain relief:** e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

---

More information ➤ www.igus.co.uk/E4.38L ➤ www.igus.co.uk/R4.38L

---

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1L
As standard separators are fitted every 2nd e-chain® link!

**Standard - for any application**
Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

**Locks securely in preset increments**
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

<table>
<thead>
<tr>
<th>Shelves Width x</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
<th>mm</th>
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<td>Assembled</td>
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<td>3211.025</td>
<td>120</td>
<td>3201.120</td>
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</tbody>
</table>

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 8mm | e-chain®: 8mm

As standard separators are fitted every 2nd e-chain® link!

**Split separators**
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

**Lean separators**
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

**Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time**
(Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)
E4.1L | Series E4.38L-R4.38L | Further accessories

e-chain® with openable extender crossbars

**Extender crossbars with flexible width | Safe guiding for large hoses**
- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

**Versions e-chain® with extender crossbar**

<table>
<thead>
<tr>
<th>Hose Ø [mm]</th>
<th>Part No. e-chain® with extender crossbar</th>
</tr>
</thead>
<tbody>
<tr>
<td>34</td>
<td>E4.38L.XXXHBE48.R0</td>
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<tr>
<td>78</td>
<td>E4.38L.XXXBE48.R0</td>
</tr>
<tr>
<td>34</td>
<td>E4.38L.XXXHBE48.R0</td>
</tr>
</tbody>
</table>

1) Minimum bend radius: R 125
2) Minimum bend radius: R 150
3) Minimum bend radius: R 185
*Width available upon request. Delivery time upon request

**BI [mm] Available inner widths**

| 110 | 112 | 125 | 137 | 150 | 162 | 175 | 187 | 200 | 212 | 225 | 237 | 250 | 262 | 275 | 300 | 312 | 325 | 337 | 350 |

Complete Part No. with the width index XXX.BI and the radius (R). Example:

**E4.38L 100/B48 150.0 = extender crossbar on both sides along inner and outer radius**

The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways:
- from one or both sides, alternating with standard crossbars and or any combination

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ From page 1270
E4.1L | Series E4.48L-R4.48L | Product range

Light design, high dynamics, cost-effective

E4.48L | R4.48L

e-chains® | E4.48L | Crossbars every link (openable along inner and outer radius, from both sides)

e-tubes  | R4.48L | Fully enclosed (also openable along inner and outer radius, from both sides)

Part No. | Part No. | Bi | Ba | E4.48L | R4.48L
--- | --- | --- | --- | --- | ---
e-chains® | e-tubes | [mm] | [mm] | [kg/m] | [kg/m]
E4.48L·050·R.0 | R4.48L·050·R.0 | 050 | 070 | 1.03 | 1.64
E4.48L·062·R.0 | R4.48L·062·R.0 | 062 | 082 | 1.58 | 1.69
E4.48L·075·R.0 | R4.48L·075·R.0 | 075 | 095 | 1.64 | 1.92
E4.48L·087·R.0 | R4.48L·087·R.0** | 087 | 107 | 1.67 | 1.91
E4.48L·100·R.0 | R4.48L·100·R.0 | 100 | 120 | 1.73 | 2.01
E4.48L·105·R.0 | 105 | 125 | 1.74 | –
E4.48L·112·R.0 | – | 112 | 132 | 1.79 | –
E4.48L·125·R.0 | R4.48L·125·R.0 | 125 | 145 | 1.84 | 2.19
E4.48L·137·R.0 | – | 137 | 157 | 1.86 | –
E4.48L·150·R.0 | R4.48L·150·R.0 | 150 | 170 | 1.97 | 2.36
E4.48L·162·R.0 | – | 162 | 182 | 2.00 | –
E4.48L·175·R.0 | R4.48L·175·R.0 | 175 | 195 | 2.04 | 2.58
E4.48L·187·R.0** | – | 187 | 207 | 2.09 | –
E4.48L·200·R.0 | R4.48L·200·R.0 | 200 | 220 | 2.14 | 2.70
E4.48L·212·R.0** | – | 212 | 232 | 2.18 | –

**With available upon request. Please consult igus® for delivery time.

1) Radius not available for e-tubes

Available bend radii

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
</tr>
</thead>
</table>
| Complete Part No. with required radius R: Example: | E4.48L·175.150.0 = crossbars every link / R4.48L·175.150.0 = fully enclosed

E4.1L | E4.48L-R4.48L | Installation dimensions

Unsupported applications | Short travels

Part No. | Part No. | Bi | Ba | E4.48L | R4.48L
--- | --- | --- | --- | --- | ---
e-chains® | e-tubes | [mm] | [mm] | [kg/m] | [kg/m]
E4.48L·225·R.0 | – | 225 | 245 | 2.24 | –
E4.48L·237·R.0 | – | 237 | 257 | 2.30 | –
E4.48L·250·R.0 | R4.48L·250·R.0 | 250 | 270 | 2.35 | 3.08
E4.48L·262·R.0 | – | 262 | 282 | 2.39 | –
E4.48L·275·R.0** | – | 275 | 295 | 2.46 | –
E4.48L·287·R.0** | – | 287 | 307 | 2.51 | –
E4.48L·300·R.0 | R4.48L·300·R.0** | 300 | 320 | 2.56 | 3.40
E4.48L·312·R.0** | – | 312 | 332 | 2.60 | –
E4.48L·325·R.0** | – | 325 | 345 | 2.66 | –
E4.48L·337·R.0** | – | 337 | 357 | 2.72 | –
E4.48L·350·R.0** | – | 350 | 370 | 2.74 | –
E4.48L·362·R.0** | – | 362 | 382 | 2.77 | –
E4.48L·375·R.0** | – | 375 | 395 | 2.81 | –
E4.48L·387·R.0** | – | 387 | 407 | 2.90 | –
E4.48L·400·R.0** | – | 400 | 420 | 2.96 | –

1) Radius not available for e-tubes

The required clearance height: H₀ = H + 40mm (with 2.5kg/m fill weight)

Gliding applications | For long travels from 10m to max. 100m

S/2 | S/2 |
--- | --- |
Total length of guide trough

<table>
<thead>
<tr>
<th>K</th>
<th>S/2</th>
<th>+ ( K² )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving end</td>
<td>( R )</td>
<td>( H )</td>
</tr>
</tbody>
</table>

3D CAD, configurators, service life calculation and more | www.igus.co.uk/E4.1L
### E4.1L | e-chains® E4.48L | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

**KMA pivoting**
Recommended for unsupported and gliding applications

**KMA locking**
Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
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**Width index**

**Part No. full set KMA pivoting**

**Part No. full set KMA locking**

**Bi [mm]**

<table>
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<tr>
<th>Width</th>
<th>Part No. full set KMA pivoting</th>
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</table>

**Recommended for vertical hanging and standing applications**

**Recommended for unsupported and gliding applications**

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**Note:** The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index A2 for odd number of links required. Please add the index A2 for the preassembled standard version, with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

---

**Strain relief**

E.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

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552 More information ► www.igus.co.uk/E4.48L  ► www.igus.co.uk/R4.48L

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553 igus® 3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E4.1L
E4.48L | Series E4.48L-R4.48L | Accessories

Interior separation | Increase cable service life

Standard - any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

<table>
<thead>
<tr>
<th>Width (mm)</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
</tr>
<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
</tr>
<tr>
<td>115</td>
<td>3200.115</td>
<td>3210.115</td>
</tr>
</tbody>
</table>

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 8mm | e-chain*: 8mm

As standard separators are fitted every 2nd e-chain® link!

---

E4.48L | Series E4.48L-R4.48L | Accessories

Interior separation | To allow faster filling New

Split separators
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%® assembly time (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory)

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any tools

2 versions: Part No. 48.H.2 / Part No. 48.H.2S. More information From page 1326

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More information ➤ www.igus.co.uk/E4.48L ➤ www.igus.co.uk/R4.48L

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1L
Extension links | For extremely wide e-chains® up to 2.0m with 50% more fill weight
- Extension link e-chains® for 50% higher fill weight extension link up to widths of 2.0m and more
- For heavy fill weights or e-chains® with many heavy cables next to each other
- e-chains® and e-tubes can be combined

Increase of the fill weight per extension link

| Normal fill weight | +50% more fill weight | +100% more fill weight | +150% more fill weight |

Complete Part No. with the width index Bi1/Bi2/Bi3 etc. and the radius (R). Example: E4.48LBi175/175/175.0

Extender crossbars with flexible width | Safe guiding for large hoses
- For guiding and protecting large hoses
- With mounting for noise dampeners
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally operable along the inner or outer radius

**Version e-chain®**

<table>
<thead>
<tr>
<th>Hose Ø [mm]</th>
<th>Part No. e-chain® with extender crossbar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Extender crossbar and standard crossbar alternating along the inner and outer radius</td>
<td>34</td>
</tr>
<tr>
<td>2) Extender crossbar on both sides along the inner and outer radius</td>
<td>130</td>
</tr>
<tr>
<td>3) Extender crossbar along the inner radius</td>
<td>85</td>
</tr>
<tr>
<td>4) Extender crossbar along the outer radius</td>
<td>85</td>
</tr>
<tr>
<td>5) Extender crossbar and standard crossbar alternating along the outer radius</td>
<td>34</td>
</tr>
<tr>
<td>6) Extender crossbar and standard crossbar alternating along the inner radius</td>
<td>34</td>
</tr>
</tbody>
</table>

1) Minimum bend radius R125. 2) Minimum bend radius R150. 3) Minimum bend radius R175. *Width available upon request. Delivery time upon request.

Complete Part No. with the width index XXX Bi and the radius (R). Example: E4.48LB100B48.150.0 = extender crossbar on both sides along inner and outer radius.
**E4.1L | Series E4.48L-R4.48L | Further accessories**

**TUB**

*Safe guidance for corrugated tubes parallel to the e-chain®*
- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 7, 10, 12, 17, 23, 29, 36mm to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

<table>
<thead>
<tr>
<th>Part No. TUB Outer link right*</th>
<th>Part No. TUB Outer link left*</th>
<th>Part No. TUB Outer link at both ends*</th>
<th>For corrugated tube nominal diameter Ø [mm]</th>
</tr>
</thead>
</table>

*View from the fixed end

Part number appended with width index XXX, Bi and radius (R) e.g.
E4.48L100TUBR.150.0 = with TUB outer sections every 2nd right hand link

**Product range | PMACLIP | Support, one-piece, with safety clip**

PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>E</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMACLIP</td>
<td>Ø [mm]</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td>I-BFH-07-0</td>
<td>07</td>
<td>17.0</td>
<td>20.0</td>
<td>21.5</td>
<td>13.5</td>
<td>40.5</td>
<td>M4</td>
</tr>
<tr>
<td>I-BFH-10-0</td>
<td>10</td>
<td>20.5</td>
<td>20.0</td>
<td>24.5</td>
<td>15.5</td>
<td>47.5</td>
<td>M5</td>
</tr>
<tr>
<td>I-BFH-12-0</td>
<td>12</td>
<td>24.0</td>
<td>20.0</td>
<td>27.0</td>
<td>16.5</td>
<td>54.5</td>
<td>M5</td>
</tr>
<tr>
<td>I-BFH-17-0</td>
<td>17</td>
<td>30.0</td>
<td>20.0</td>
<td>34.0</td>
<td>20.0</td>
<td>68.0</td>
<td>M6</td>
</tr>
<tr>
<td>I-BFH-23-0</td>
<td>23</td>
<td>38.5</td>
<td>20.0</td>
<td>42.0</td>
<td>24.0</td>
<td>85.0</td>
<td>M6</td>
</tr>
<tr>
<td>I-BFH-29-0</td>
<td>29</td>
<td>45.5</td>
<td>20.0</td>
<td>48.0</td>
<td>27.0</td>
<td>99.0</td>
<td>M6</td>
</tr>
<tr>
<td>I-BFH-36-0</td>
<td>36</td>
<td>56.5</td>
<td>20.0</td>
<td>56.0</td>
<td>31.0</td>
<td>119.0</td>
<td>M6</td>
</tr>
</tbody>
</table>

Due to the modular design, the E4.1L system can be adapted to almost any application. As an open version for cable guidance, with extender crossbars for large hoses, or enclosed chip-resistant tube complete with guide trough - just three of many options.
E4.64L | Series E4.64L | Product range

Light design, high dynamics, cost-effective

E4.64L | Crossbars every link (openable along inner and outer radius, from both sides)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.64L</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.64L 50.0**</td>
<td>050 076</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 062.0**</td>
<td>062 088</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 075.0**</td>
<td>075 101</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 087.0</td>
<td>087 113</td>
<td>≈ 2.49</td>
<td></td>
</tr>
<tr>
<td>E4.64L 100.0</td>
<td>100 126</td>
<td>≈ 2.57</td>
<td></td>
</tr>
<tr>
<td>E4.64L 112.0**</td>
<td>112 138</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 125.0**</td>
<td>125 151</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 137.0**</td>
<td>137 163</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 150.0</td>
<td>150 176</td>
<td>≈ 2.72</td>
<td></td>
</tr>
<tr>
<td>E4.64L 162.0**</td>
<td>162 188</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 175.0</td>
<td>175 201</td>
<td>≈ 2.87</td>
<td></td>
</tr>
<tr>
<td>E4.64L 187.0**</td>
<td>187 213</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 200.0</td>
<td>200 226</td>
<td>≈ 2.97</td>
<td></td>
</tr>
<tr>
<td>E4.64L 212.0**</td>
<td>212 238</td>
<td>–</td>
<td></td>
</tr>
<tr>
<td>E4.64L 225.0**</td>
<td>225 251</td>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

E4.64L | Series E4.64L | Installation dimensions

Unsupported applications | Short travels

**Values upon request

Notes: We recommend the project planning of such a system to be carried out by igus®.

In case of travels between 5 and 10m we recommend an e-chain® with a longer unsupported length.

More information: www.igus.co.uk/E4.64L

E4.64L | Online configurators, service life calculation and more: www.igus.co.uk/E4.1L
**KMA pivoting**

**KMA locking**

Recommended for unsupported and gliding applications

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>06.</td>
<td>E4.640. 06</td>
<td>E4.640. 06</td>
<td>76.5</td>
</tr>
<tr>
<td>07.</td>
<td>E4.640. 07</td>
<td>E4.640. 07</td>
<td>77.5</td>
</tr>
<tr>
<td>08.</td>
<td>E4.640. 08</td>
<td>E4.640. 08</td>
<td>78.5</td>
</tr>
<tr>
<td>09.</td>
<td>E4.640. 09</td>
<td>E4.640. 09</td>
<td>79.5</td>
</tr>
<tr>
<td>10.</td>
<td>E4.640. 10</td>
<td>E4.640. 10</td>
<td>80.5</td>
</tr>
<tr>
<td>11.</td>
<td>E4.640. 11</td>
<td>E4.640. 11</td>
<td>81.5</td>
</tr>
<tr>
<td>12.</td>
<td>E4.640. 12</td>
<td>E4.640. 12</td>
<td>82.5</td>
</tr>
<tr>
<td>15.</td>
<td>E4.640. 15</td>
<td>E4.640. 15</td>
<td>85.5</td>
</tr>
<tr>
<td>16.</td>
<td>E4.640. 16</td>
<td>E4.640. 16</td>
<td>86.5</td>
</tr>
<tr>
<td>17.</td>
<td>E4.640. 17</td>
<td>E4.640. 17</td>
<td>87.5</td>
</tr>
<tr>
<td>18.</td>
<td>E4.640. 18</td>
<td>E4.640. 18</td>
<td>88.5</td>
</tr>
<tr>
<td>19.</td>
<td>E4.640. 19</td>
<td>E4.640. 19</td>
<td>89.5</td>
</tr>
<tr>
<td>20.</td>
<td>E4.640. 20</td>
<td>E4.640. 20</td>
<td>90.5</td>
</tr>
<tr>
<td>21.</td>
<td>E4.640. 21</td>
<td>E4.640. 21</td>
<td>91.5</td>
</tr>
<tr>
<td>22.</td>
<td>E4.640. 22</td>
<td>E4.640. 22</td>
<td>92.5</td>
</tr>
</tbody>
</table>

Note: The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain link at the moving end. Please specify the index C for odd or D for even depending on an even or odd number of links required. Please add the index A2 for the preassembled standard version, with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

**KMA - polymer metal mounting bracket.**

**Bi** Width available upon request. Please consult igus® for delivery time.

**E4.641/E4.640**

Order example

- Order code 12.C
- Order code 21.C
- Order code 64.2

- C-profile option
- Full set
- Even numbers of links
- Width index
- Series

- Lean separator design - several layers of cables fitted quickly, save up to 50% assembly time.

- Lean separators allow extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

- Lean separator design - several layers of cables fitted quickly, save up to 50% assembly time.

- Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® harnessing factory.

- For even faster installation

- Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

- Horizontal separation

- Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

- Interior separation

- To allow faster filling

- New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

- Note: Please be aware of the minimum lateral gap to the side link! e-chain®: 15mm

As standard separators are fitted every 2nd e-chain link!

**3D CAD, configurators, service life calculation and more**

www.igus.co.uk/E4.64L

More information: www.igus.co.uk/E4.64L

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**E4.64L | Series E4.64L | Further accessories**

**e-chain® with openable extender crossbars**

### Extender crossbars with flexible width | Safe guiding for large hoses
- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

### Versions e-chain® with extender crossbar

<table>
<thead>
<tr>
<th>Hose Ø (mm)</th>
<th>Part No. e-chain® with extender crossbar</th>
</tr>
</thead>
<tbody>
<tr>
<td>48</td>
<td>E4.64L.B65.R.0</td>
</tr>
<tr>
<td>170</td>
<td>E4.64L.B65.R.0</td>
</tr>
<tr>
<td>115</td>
<td>E4.64L.B65.R.0</td>
</tr>
<tr>
<td>115</td>
<td>E4.64L.B65.R.0</td>
</tr>
<tr>
<td>48</td>
<td>E4.64L.B65.R.0</td>
</tr>
<tr>
<td>48</td>
<td>E4.64L.B65.R.0</td>
</tr>
</tbody>
</table>

1) Minimum bend radius: R 125; 2) Minimum bend radius: R 150; 3) Minimum bend radius: R 100; *Width available upon request, delivery time upon request

### Available inner widths

<table>
<thead>
<tr>
<th>Bi (mm)</th>
<th>Available inner widths</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>112</td>
</tr>
<tr>
<td>262</td>
<td>275</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index XXX Bi and the radius (R). Example: E4.64L.087B65.150.0 = extender crossbar on both sides along inner and outer radius

---

**E4.64L | Series E4.64L | Further accessories**

**Steel support tray for support of the lower run**
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

More information ► From page 1264

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The R4.1L e-tubes are used to guide motor, encoder and sensor cables to supply the moving part of this bending machine.

---

The E4.1L can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination.
ONE e-chain® series for almost any application

Advantages of the E4.1 system:
- Undercut design for high lateral stability, high strength for long travels and for large unsupported lengths
- Especially suited for side-mounted applications
- Noise-reducing brake and optional noise dampers
- Inner and outer links for quick assembly, with or without pretension
- Many modular options and accessories available

When to use another e-chain® series:
- When the e-chain® needs to be extremely quiet with very low vibration
  - E6.1, page 750
- When an e-chain® must fulfill ISO Class 1 cleanroom standard
  - E6.1, page 750
- When a light, cost-effective e-chain®/e-tube with higher dynamics is needed
  - E4.1L, page 524
- When a larger inner space is required with the same exterior dimensions
  - E4.1L, page 524
System E4.1 | Introduction | Advantages

ONE series for almost any application - E4.1

System E4.1 combines all the advantages of the previous three versions and is the best igus® e-chain® in the product range. Series E4.1 is stronger whilst having the same or even smaller dimensions than previous versions. Almost all accessories and mounting dimensions are identical. You can increase the service life of your application with the igus® system E4.1 whilst reducing cost.

- Undercut design for high lateral stability
- High push/pull strength for long travels and large unsupported lengths
- Especially suited for side-mounted applications
- Noise-reducing brake and optional noise dampers
- Inner and outer links for quick assembly, with or without pretension

Typical industries and applications

- Cranes
- Indoor cranes
- Composting plants
- Sewage plants
- Machine tools
- General mechanical engineering
- Material handling technology
- Cooling technology
- Construction machinery
- Woodworking
- Robots and handling equipment

Swarf protection: openable lids
Lateral gliding surfaces
QuickLock crossbars
Long service life: lateral gliding surfaces
25% faster; easy assembly with QuickLock crossbars
Straight run: due to inner/outer link principle
No pretension: NC version by rotating the outer link
Precise separation: notch crossbar with visual scale
High strength: due to undercut design
Quiet operation: due to integrated brake

Medical technology

IPA Qualification Certificate - Report IG 1303-640-1; ISO Class 2, according to DIN EN ISO 14644-1 for System E4.1, Series E4.32, 10,063.0, CR at v = 0.5 / 1.0 / 2.0

41 dB(A) - level determined at the igus® test lab, v = 1.8 m/s unsupported, series E4.21, 060, C08.0

Electrically conductive ESD e-chains® - several series available from stock

System E4.1 | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.21</td>
<td>21</td>
<td>30 - 140</td>
<td>44 - 154</td>
<td>28</td>
<td>038 - 200</td>
<td>2.50</td>
<td>576</td>
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<tr>
<td>E4.28</td>
<td>28</td>
<td>40 - 300</td>
<td>60 - 320</td>
<td>42</td>
<td>055 - 250</td>
<td>2.50</td>
<td>582</td>
</tr>
<tr>
<td>E4.32</td>
<td>32</td>
<td>50 - 400</td>
<td>73 - 423</td>
<td>54</td>
<td>063 - 300</td>
<td>3.30</td>
<td>590</td>
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<td>76 - 426</td>
<td>64</td>
<td>075 - 350</td>
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<td>612</td>
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<td>102 - 652</td>
<td>142</td>
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<td>636</td>
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<td>256 - 656</td>
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<td>250 - 1000</td>
<td>6.75</td>
<td>644</td>
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<tr>
<td>800</td>
<td>200</td>
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<td>236</td>
<td>325 - 1000</td>
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<td>840</td>
<td>204</td>
<td>100 - 563</td>
<td>160 - 623</td>
<td>236</td>
<td>325 - 1000</td>
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<td>652</td>
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<td>E4.350</td>
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<td>400 - 800</td>
<td>540 - 940</td>
<td>450</td>
<td>500 - 1000</td>
<td>6.20</td>
<td>656</td>
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<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>H4.32</td>
<td>32</td>
<td>50 - 400</td>
<td>73 - 423</td>
<td>54</td>
<td>063 - 300</td>
<td>3.30</td>
<td>590</td>
</tr>
<tr>
<td>H4.42</td>
<td>42</td>
<td>50 - 400</td>
<td>76 - 426</td>
<td>64</td>
<td>075 - 350</td>
<td>4.00</td>
<td>600</td>
</tr>
<tr>
<td>H4.56</td>
<td>56</td>
<td>50 - 600</td>
<td>84 - 634</td>
<td>84</td>
<td>135 - 500</td>
<td>5.00</td>
<td>612</td>
</tr>
<tr>
<td>H4.80</td>
<td>80</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>108</td>
<td>150 - 1000</td>
<td>6.20</td>
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</tr>
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</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>R4.28</td>
<td>28</td>
<td>50 - 300</td>
<td>70 - 320</td>
<td>42</td>
<td>075 - 250</td>
<td>2.50</td>
<td>582</td>
</tr>
<tr>
<td>R4.32</td>
<td>32</td>
<td>50 - 300</td>
<td>73 - 323</td>
<td>54</td>
<td>125 - 300</td>
<td>3.30</td>
<td>590</td>
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<td>R4.42</td>
<td>42</td>
<td>50 - 300</td>
<td>76 - 326</td>
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<td>R4.80</td>
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<td>100 - 462</td>
<td>150 - 513</td>
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<tr>
<td>R4.112</td>
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<td>200 - 500</td>
<td>252 - 552</td>
<td>140</td>
<td>250 - 1000</td>
<td>6.50</td>
<td>636</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
**System E4.1 | Any application with one e-chain®**

*Undercut design combined with the inner/outer-link solution*

- Smooth, cable-friendly inner surfaces
- Low-noise operation due to integrated brake on the radial stop-dogs
- Smooth and wear-resistant gliding surface - no additional glide shoes required
- Option with or without camber simply by reversing outer links

**System E4.1 | Moving energy made easy**

*High stability and strength and easy installation*

- ESD version ideal with large undercut contact area
- Strong crossbars with double locking
- Double vertical stop-dog system for larger unsupported lengths
- Very high stability due to the undercut design
- Cable-friendly, rounded crossbar
- Integrated lateral wear pads for a long service life (also for side-mounted applications)

More information ➤ www.igus.co.uk/E4.1
System E4.1 | Features | Accessories

Lean separators enable extremely fast cable filling in several layers

KMA mounting brackets with attachment options from any side

Strain relief e.g. clamps, tiewrap plates, nuggets, etc. ► From page 1300

Aluminium and steel support tray for support of the lower run ► From page 1264

Aluminium "SuperTrough" - the standard igus® guide trough ► From page 1208

Safe parallel guiding of corrugated tubes with the optional, external TUB guidance

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
<th>Unsupported length lower run</th>
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<tbody>
<tr>
<td>E4.21</td>
<td>≤ 5.0m</td>
<td>≤ 120m</td>
<td>≤ 40m</td>
<td>≤ 1.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>E4.28/R4.28</td>
<td>≤ 5.0m</td>
<td>≤ 200m</td>
<td>≤ 80m</td>
<td>≤ 1.2m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>E4.32/H4.32/R4.32</td>
<td>≤ 6.0m</td>
<td>≤ 200m</td>
<td>≤ 80m</td>
<td>≤ 1.5m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
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<td>≤ 300m</td>
<td>≤ 100m</td>
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<td>upon request</td>
<td>upon request</td>
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<tr>
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<td>≤ 400m</td>
<td>≤ 100m</td>
<td>≤ 2.5m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>E4.80/H4.80/R4.80</td>
<td>≤ 12.4m</td>
<td>≤ 400m</td>
<td>≤ 120m</td>
<td>≤ 3.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>E4.112/R4.112</td>
<td>≤ 13.0m</td>
<td>≤ 450m</td>
<td>≤ 120m</td>
<td>≤ 3.0m</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>E4.162</td>
<td>≤ 13.5m</td>
<td>≤ 450m</td>
<td>≤ 120m</td>
<td>≤ 6.0m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>800</td>
<td>≤ 16.0m</td>
<td>≤ 450m</td>
<td>≤ 120m</td>
<td>≤ 6.0m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>840</td>
<td>≤ 16.0m</td>
<td>≤ 450m</td>
<td>≤ 120m</td>
<td>≤ 6.0m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
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</tr>
<tr>
<td>E4.350</td>
<td>≤ 13.0m</td>
<td>upon request</td>
<td>upon request</td>
<td>with rework</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

System E4.1 | Technical data | Overview

Technical data

Speed gliding / acceleration gliding
≤ 10 [m/s] / ≤ 50 [m/s²]

Speed FLG / acceleration FLG
≤ 20 [m/s] / ≤ 200 [m/s²]

Speed FLB / acceleration FLB
≤ 3 [m/s] / ≤ 6 [m/s²]

Material - permitted temperature °C, igumid G
-40°C / +120°C

Flammability class, igumid G
VDE 0304 IIC UL94-HB

FLG = unsupported with straight upper run
FLB = unsupported with permitted sag

Installation types, maximum travels
System E4.1 | Options and order keys

Options with order keys | Examples based on series E4.56/H4.56/R4.56

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Standard</th>
<th>Optional noise dampers</th>
<th>Quick opening crossbar - reduce assembly time by up to 25%</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.56.30.R.0</td>
<td>e-chain® with crossbars every link</td>
<td>e-chain® with crossbars every link</td>
<td>e-chain® with crossbars every link</td>
</tr>
<tr>
<td>H4.56.30.R.0</td>
<td>e-chain® with crossbars every 2nd link</td>
<td>e-chain® with crossbars every 2nd link</td>
<td>e-chain® with crossbars every 2nd link</td>
</tr>
<tr>
<td>R4.56.30.R.0</td>
<td>e-tube, closed</td>
<td>e-tube, closed</td>
<td>e-tube, closed</td>
</tr>
</tbody>
</table>

Ready to ship* in 24 - 48 hrs. | Delivery time* 3-5 business days | Delivery time* 3-5 business days | Delivery time* 3-5 business days | Delivery time* 3-5 business days |

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Order example | Examples based on series E4.56

Order example for complete e-chain® (3.0m), colour black, with mounting brackets and interior separation:

e-chain® (3.0m) | Please indicate e-chain® length or number of links: 3.0m or 33 links | E4.56.30.300.0 |
| + Mounting brackets | 1 set (with odd number of links and integrated C-profiles) | E4.56.0.112.C |
| Interior separation | with 2 separators assembled every 2nd link | 2 x 56.1.1 |
| Order text: | 3 m E4.56.30.300.0 + E4.56.0.112.C + 2 x 56.1.1 |

Magnetically detectable plastic e-chains®

- For the food and tobacco industry
- igumid DT - automatic detection by all common metal detection systems
- Particles as small as 1.0mm can be recognised for fragments passing at speeds of 20m/min

More information ▶ www.igus.co.uk/detectable-chain

System E4.1 | Options and order keys

Order key and colour examples | Examples based on series E4.56/H4.56/R4.56

Order key | e-chain® with crossbars every link | e-chain® with crossbars every 2nd link | e-tube fully enclosed |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.56.30.300.0</td>
<td>E4.56.30.300.0</td>
<td>R4.56.30.300.0</td>
<td></td>
</tr>
</tbody>
</table>

Order index for colour options

- Black | Standard | Colour |
- Silver-grey | Special colour | Colour |
- White | Special colour | Colour |
- Grey-white | Special colour | Colour |

Black e-chains® available from stock.
Above special colours upon request.

Aluminium lid for plastic e-tube R4.1

- Lid notches allow easy positioning of the interior separation
- Special plastic clips facilitate easy assembly
- Any width possible, operable lids from both sides
  (material: aluminium EN AW-6060)

More information ▶ www.igus.co.uk/alulid

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/E4.1
E4.21 | Series E4.21 | Product range
Stable due to undercut design, small inner height

[Image of e-chains with text]

**e-chains® | Series E4.21 | Crossbars every link** (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.21 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.21, 030, R.0</td>
<td>30</td>
<td>44</td>
<td>0.60</td>
</tr>
<tr>
<td>E4.21, 040, R.0</td>
<td>40</td>
<td>54</td>
<td>0.64</td>
</tr>
<tr>
<td>E4.21, 050, R.0</td>
<td>50</td>
<td>64</td>
<td>0.67</td>
</tr>
<tr>
<td>E4.21, 100, R.0</td>
<td>100</td>
<td>114</td>
<td>0.92</td>
</tr>
<tr>
<td>E4.21, 200, R.0</td>
<td>140</td>
<td>154</td>
<td>0.99</td>
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</table>

Available bend radii

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>038</th>
<th>048</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>150</th>
<th>200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bi [mm]</td>
<td>30</td>
<td>44</td>
<td>50</td>
<td>54</td>
<td>64</td>
<td>100</td>
<td>114</td>
</tr>
<tr>
<td>Ba [mm]</td>
<td>90</td>
<td>104</td>
<td>110</td>
<td>124</td>
<td>120</td>
<td>134</td>
<td>140</td>
</tr>
<tr>
<td>E4.21 [kg/m]</td>
<td>0.82</td>
<td>0.85</td>
<td>0.89</td>
<td>0.92</td>
<td>0.99</td>
<td>0.99</td>
<td>0.99</td>
</tr>
</tbody>
</table>

E4.21 | Series E4.21 | ESD - many sizes from stock

- Standardised product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and inner separation; 24hrs, from stock

More information: [www.igus.co.uk/esd](http://www.igus.co.uk/esd)

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**E4.1 | Series E4.21 | Installation dimensions**

**Unsupported applications | Short travels**

In case of travels between 4 and 10m we recommend an e-chain® with a longer unsupported length.

**Gliding applications | For long travels from 10m to max. 120m**

Note: We recommend the project planning of such a system to be carried out by igus®.

More information: [www.igus.co.uk/E4.1](http://www.igus.co.uk/E4.1)
KMA pivoting | Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Width [mm]</th>
<th>Part No. full set</th>
<th>Bi [mm]</th>
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<tr>
<td>000</td>
<td>0.30</td>
<td>E4.210.030.1.12</td>
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<tr>
<td>040</td>
<td>0.40</td>
<td>E4.210.040.1.12</td>
<td>40</td>
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<tr>
<td>050</td>
<td>0.50</td>
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<td>060</td>
<td>0.60</td>
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<td>070</td>
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<td>080</td>
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<td>E4.210.080.1.12</td>
<td>80</td>
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</tbody>
</table>

(KMA = polymer metal mounting bracket)

Special mounting bracket feature - E4.21
- Special hexagonal design of the counterbore allowing the M4 nut and M4 hexagon socket-head screw to engage
- Note: Series E4.21 always needs to end with an inner link (odd number of links). To receive brackets pre-fitted please add index A.

E4.210.120.1.12.A  Order example
- To indicate option with brackets pre-fitted
  - Full set
  - Odd numbers of links
  - Width index
  - Series

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
Many e-chains® are used in this customised CNC-machine for the woodworking industry.
e-chains® | Series E4.28 | Crossbars every link (crossbars removable along the inner and outer radius)
e-tubes | Series R4.28 | Fully enclosed (crossbars removable along the outer radius, from one side)

Part No. E4.28 / R4.28 Bi Ba E4.28 R4.28
E4.28 – 28, 040.0 40 60 1.06 –
E4.28 R4.28, 050.0 50 70 1.11 2.20
E4.28 – 28, 052.0 52 72 1.13 –
E4.28 R4.28, 062.0 62 82 1.17 –
E4.28 – 28, 070.0 70 90 1.20 –
E4.28 R4.28, 075.0 75 95 1.23 2.02
E4.28 – 28, 087.0 87 107 1.28 –
E4.28 R4.28, 100.0 100 120 1.37 2.54

Part No. E4.28 / R4.28 Bi Ba E4.28 R4.28
E4.28 R4.28, 125.0 125 145 1.51 2.78
E4.28 R4.28, 150.0 150 170 1.61 3.02
E4.28 R4.28, 175.0 175 195 1.71 3.26
E4.28 R4.28, 200.0 200 220 1.84 3.50
E4.28 R4.28, 225.0 225 245 1.99 3.82
E4.28 R4.28, 250.0 250 270 2.14 3.98
E4.28 R4.28, 275.0 275 295 2.37 –
E4.28 R4.28, 300.0 300 320 2.39 4.46

1) Available as ESD-version from stock

Available bend radii

R [mm] 055* 063* 075 100 125 150 200 250

Complete Part No. with required radius [R]. Example: E4.28.100.100.0 = crossbars every link / R4.28.105.100.0 = fully enclosed

ESD - many sizes from stock

- Standardised product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 2-3hrs, from stock

More information www.igus.co.uk/esd

3D CAD, configurators, service life calculation and more www.igus.co.uk/E4.1
**E4.1 | e-chains® E4.28 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

**KMA pivoting**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set</th>
<th>KMA pivoting</th>
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<td>175</td>
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<tr>
<td>200</td>
<td>E4.280.062</td>
<td>12</td>
</tr>
<tr>
<td>225</td>
<td>E4.280.075</td>
<td>12</td>
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<td>275</td>
<td>E4.280.087</td>
<td>12</td>
</tr>
<tr>
<td>300</td>
<td>E4.280.100</td>
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**KMA locking**

<table>
<thead>
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**KMA locking**

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<tr>
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**KMA pivoting**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set</th>
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</tr>
</thead>
<tbody>
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<td>125</td>
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<tr>
<td>175</td>
<td>E4.282.050</td>
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<td>275</td>
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<td>E4.282.100</td>
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**KMA locking**

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<th>Width [mm]</th>
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<tbody>
<tr>
<td>125</td>
<td>E4.282.040</td>
<td>12</td>
</tr>
<tr>
<td>175</td>
<td>E4.282.050</td>
<td>12</td>
</tr>
<tr>
<td>200</td>
<td>E4.282.062</td>
<td>12</td>
</tr>
<tr>
<td>225</td>
<td>E4.282.075</td>
<td>12</td>
</tr>
<tr>
<td>275</td>
<td>E4.282.087</td>
<td>12</td>
</tr>
<tr>
<td>300</td>
<td>E4.282.100</td>
<td>12</td>
</tr>
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</table>

---

**KMA pivoting**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set</th>
<th>KMA pivoting</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>E4.283.040</td>
<td>12</td>
</tr>
<tr>
<td>175</td>
<td>E4.283.050</td>
<td>12</td>
</tr>
<tr>
<td>200</td>
<td>E4.283.062</td>
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<tr>
<td>225</td>
<td>E4.283.075</td>
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<tr>
<td>275</td>
<td>E4.283.087</td>
<td>12</td>
</tr>
<tr>
<td>300</td>
<td>E4.283.100</td>
<td>12</td>
</tr>
</tbody>
</table>

**KMA locking**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set</th>
<th>KMA locking</th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>E4.283.040</td>
<td>12</td>
</tr>
<tr>
<td>175</td>
<td>E4.283.050</td>
<td>12</td>
</tr>
<tr>
<td>200</td>
<td>E4.283.062</td>
<td>12</td>
</tr>
<tr>
<td>225</td>
<td>E4.283.075</td>
<td>12</td>
</tr>
<tr>
<td>275</td>
<td>E4.283.087</td>
<td>12</td>
</tr>
<tr>
<td>300</td>
<td>E4.283.100</td>
<td>12</td>
</tr>
</tbody>
</table>

---

**Note:** The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index [1] for odd or [2] for even depending on an even or odd number of links required. Please add the index A2 for the preassembled standard version, with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

**Strain relief**

E.g. clamps, tie down plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
E4.1 | e-chains® E4.28 | Accessories

Interior separation | Increase cable service life | Only for e-chains®

Note: Please be aware of the minimum lateral gap to the side links! e-tubes: 15mm
As standard separators are fitted every 2nd e-chain® link!

Separator, narrow top unassembled 28.2
assembled 28.2.1

Shelf, lockable unassembled 2300.X
assembled 2310.X

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws
Part No. 28.Z (e-chains®) / Part No. 28.ZT (e-tubes)
More information ► From page 1326

Width = X

E4.1 | e-tubes R4.28 | Accessories

Interior separation | Option 1 | Option 2 | Only for e-tubes

Option 1 | Full-width shelves
Slotted separator for full-width shelves
For a vertical subdivision. The slot allows basic vertical/horizontal shelving arrangements.

Full-width shelf
This option is for applications with many small cables with similar diameters. For full width separation.

Option 2 | Shelves
Slotted separator for partial shelves
Allows modular shelving arrangements.

Shelf
For applications involving many cables with different diameters, shelves can be fitted at different heights.

Separator, wide base unassembled 28.1
assembled 28.1.1

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Standard separator unassembled 28.1
assembled 28.1.1

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Spacers can be fixed in position using spacers. The available interior height is reduced by 2mm per spacer (4mm when spacers are fitted on both sides). To avoid this, the parts can also be installed on the outside of the opening crossbar.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves Width x X [mm]

X [mm] unassembled assembled X [mm] unassembled assembled X [mm] unassembled assembled
015 2300.015 2301.015 060 2300.060 2310.060 057 2300.057 2301.057
025 2300.025 2301.025 062 2300.062 2310.062 090 2300.090 2310.090
030 2300.030 2301.030 065 2300.065 2310.065 100 2300.100 2310.100
038 2300.038 2301.038 070 2300.070 2310.070 103 2300.103 2310.103
040 2300.040 2301.040 075 2300.075 2310.075 110 2300.110 2310.110
050 2300.050 2301.050 077 2300.077 2310.077 120 2300.120 2310.120
057 2300.057 2301.057 080 2300.080 2310.080 125 2300.125 2310.125

Shelves Width x X [mm]

X [mm] unassembled assembled X [mm] unassembled assembled X [mm] unassembled assembled
018 2200.18 2210.18 043 2200.43 2210.43 088 2200.88 2210.88
023 2200.23 2210.23 048 2200.48 2210.48 099 2200.99 2210.99
028 2200.28 2210.28 058 2200.58 2210.58 124 2200.124 2210.124
033 2200.33 2210.33 068 2200.68 2210.68 149 2200.149 2210.149
038 2200.38 2210.38 073 2200.73 2210.73
### Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ From page 1270

### Swarf up to +850°C
- E-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material

More information ➤ www.igus.co.uk/HT

### Reduce assembly time - E4 e-chain® opener
- E-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ➤ www.igus.co.uk/E4savetime

---

E4.1 e-chains®, supplied as readychains®, reliably supply power and data to different axes of this machine tool.
e-chains® | Series E4.32 | e-chains® | Series H4.32 | e-tubes | Series R4.32
Crossbars every link (crossbars removable along the inner and outer radius)
Crossbars every 2nd link (crossbars removable along the inner and outer radius)
Fully enclosed (ids openable along the outer radius, from one side)

Part No. | Bi | Ba | E4.32 | H4.32 | R4.32 | Part No. | Bi | Ba | E4.32 | H4.32 | R4.32
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
e-chains® / e-tubes | | | | | | e-chains® / e-tubes | | | | | | E4/H4, R4 | 32 | 05 | R0 | 50 | 73 | 1.68 | 1.68 | 1.68
E4/H4, – | 32 | 06 | R0 | 68 | 91 | 1.81 | 1.68 | –
E4/H4, R4 | 32 | 07 | R0 | 75 | 98 | 1.85 | 1.70 | 1.11
E4/H4, – | 32 | 087 | R0 | 87 | 110 | 1.92 | 1.73 | –
E4, H4, – | 32 | 097 | R0 | 97 | 120 | 1.98 | 1.76 | –
E4/H4, R4 | 32 | 10 | R0 | 100 | 123 | 2.00 | 1.78 | 2.33
E4/H4, – | 32 | 11 | R0 | 108 | 131 | 2.06 | 1.80 | 2.39
E4/H4, R4 | 32 | 112 | R0 | 112 | 136 | 2.07 | 1.81 | –
E4/H4, – | 32 | 12 | R0 | 125 | 148 | 2.18 | 1.87 | 2.57
E4/H4, R4 | 32 | 137 | R0 | 137 | 161 | 2.24 | 1.89 | –
E4/H4, R4, – | 32 | 15 | R0 | 150 | 173 | 2.33 | 1.94 | 2.84
E4/H4, R4, – | 32 | 162 | R0 | 162 | 186 | 2.36 | 1.95 | –
E4/H4, R4 | 32 | 17 | R0 | 168 | 191 | 2.44 | 1.99 | 3.00
E4/H4, R4, – | 32 | 18 | R0 | 175 | 198 | 2.48 | 2.00 | –
E4/H4, R4 | 32 | 187 | R0 | 187 | 211 | 2.51 | 2.03 | –
E4/H4, R4 | 32 | 20 | R0 | 200 | 223 | 2.63 | 2.09 | 3.35

\[1\) ESD version available from stock 2) Removable lid, non-openable

Available bend radii

- R [mm] | 063 | 075* | 100* | 125 | 150 | 175 | 200 | 220 | 250 | 300

Complete Part No. with required radius [R]. Example:
E4.32.30.30.0 = crossbars every link / H4.32.30.30.0 = crossbars every 2nd link / R4.32.30.30.0 = fully enclosed

ESD - many sizes from stock
- Standardised product made from genuine ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24 hrs, from stock

More information - www.igus.co.uk/esd

E4.1 | Series E4.32-H4.32-R4.32 | Installation dimensions
Unsupported applications | Short travels

Unsupported applications

- Short travels
- In case of travels between 7 and 10m we recommend an e-chain® with a longer unsupported length.

More information - www.igus.co.uk/E4.1

3D CAD, configurators, service life calculation and more - www.igus.co.uk/E4.1
**E4.1 | e-chains® E4.32-H4.32 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

**KMA pivoting | Recommended for unsupported and gliding applications**

- **KMA locking | Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>E4.320.05</td>
<td>E4.321.05</td>
<td>12C</td>
</tr>
<tr>
<td>06.</td>
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<td>07.</td>
<td>E4.320.07</td>
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<td>08.</td>
<td>E4.320.08</td>
<td>E4.321.08</td>
<td>12C</td>
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<tr>
<td>09.</td>
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<td>12C</td>
</tr>
<tr>
<td>10.</td>
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<td>E4.321.10</td>
<td>12C</td>
</tr>
<tr>
<td>11.</td>
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<tr>
<td>12.</td>
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<td>12C</td>
</tr>
<tr>
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</tr>
<tr>
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<td>12C</td>
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<td>12C</td>
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<tr>
<td>20.</td>
<td>E4.320.20</td>
<td>E4.321.20</td>
<td>12C</td>
</tr>
</tbody>
</table>

**Fixed end** E4.320/321 ... **1**

**Moving end** E4.320/321 ... **2**

**Front view of KMA**

---

**KMA pivoting | Recommended for unsupported and gliding applications**

- **KMA locking | Recommended for vertical hanging and standing applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>R4.320.15</td>
<td>R4.321.15</td>
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<td>12C</td>
</tr>
<tr>
<td>07.</td>
<td>R4.320.17</td>
<td>R4.321.17</td>
<td>12C</td>
</tr>
<tr>
<td>08.</td>
<td>R4.320.18</td>
<td>R4.321.18</td>
<td>12C</td>
</tr>
<tr>
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<td>R4.320.19</td>
<td>R4.321.19</td>
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</tr>
<tr>
<td>10.</td>
<td>R4.320.20</td>
<td>R4.321.20</td>
<td>12C</td>
</tr>
</tbody>
</table>

**Fixed end** R4.320/321 ... **1**

**Moving end** R4.320/321 ... **2**

**Front view of KMA**

---

**Note:** The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index [C] for any desired outer side link index A2 for the press-assembled standard version with C-profile in the inner radius at the moving end and in the outer radius at the fixed end.

---

**Strain relief e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300**

---

**More information ➤ www.igus.co.uk/E4.32 ➤ www.igus.co.uk/H4.32 ➤ www.igus.co.uk/R4.32**

---

**3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1**


**E4.1 | Series E4.32-H4.32-R4.32 | Accessories**

**Interior separation | Increase cable service life**

Previous generation of interior separation with other options: [www.igus.co.uk/E4.32](http://www.igus.co.uk/E4.32)

---

**Note:** Please be aware of the minimum lateral gap to the side links! e-tubes: 30mm

As standard separators are fitted every 2<sup>nd</sup> e-chain® link!

---

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**

Separator for igus® QuickLock crossbar 385.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

**For side-mounted applications**

Asymmetrical separator, for defined gap distance. No additional spacers required.

---

**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

---

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

**Product range | PMACLIP | Support, one-piece, with safety clip**

---

**TUB | Safe guidance for corrugated tubes parallel to the e-chain®**

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 07, 10, 12, 17mm to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

---

**Part No. TUB | Part No. TUB | Part No. TUB | For corrugated tube nominal diameter**

<table>
<thead>
<tr>
<th>Outer link right*</th>
<th>Outer link left*</th>
<th>Outer link at both ends*</th>
<th>Ø [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.32.XXXTUB.R.0</td>
<td>E4.32.XXXTUB.L.0</td>
<td>E4.32.XXXTUB.R.L.0</td>
<td>07 / 10 / 12 / 17</td>
</tr>
</tbody>
</table>

*As viewed from the fixed end

Part number appended with width index XXX: BI and radius (R) e.g.

E4.32L.100TUB.R.150.0 = with TUB outer sections every 2<sup>nd</sup> right hand link

---

**Series E4.32·H4.32·R4.32**

- 3D CAD, configurators, service life calculation and more: [www.igus.co.uk/E4.32](http://www.igus.co.uk/E4.32)
- PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes

---

**Shelves**

Width X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>uninstalled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
</tr>
<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
</tr>
<tr>
<td>115</td>
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<td>125</td>
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<td>3210.175</td>
</tr>
<tr>
<td>200</td>
<td>3200.200</td>
<td>3210.200</td>
</tr>
</tbody>
</table>

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**More information**

- [www.igus.co.uk/E4.32](http://www.igus.co.uk/E4.32)
- [www.igus.co.uk/H4.32](http://www.igus.co.uk/H4.32)
- [www.igus.co.uk/R4.32](http://www.igus.co.uk/R4.32)

---

594 | 595
E4.1 | Series E4.32-H4.32-R4.32 | Further accessories

**E-chain® with openable extender crossbars**

- **For guiding and protecting large hoses**
- **With mounting for noise dampers**
- **Cable-friendly design, high crossbar holding force**
- **The openable extender crossbars can be fitted in different ways and combinations**
- **Optionally openable along the inner or outer radius**

### Extender crossbars with flexible width | Safe guiding for large hoses

- **Suitable for hoses with a maximum outer diameter of 105mm.**
- **Variant 1: extender crossbar with fixed width to combine with standard crossbars**
- **Variant 2: extender crossbar with fixed width attached directly on the side link**
- **Gliding with crossbars assembled along the outer radius and a special guide trough**

### Extender crossbars with fixed width | Safe guiding for large hoses

- **Round extender crossbar combined with openable crossbars or attached directly on the side link (as viewed from the fixed end)**

---

**Variations**

<table>
<thead>
<tr>
<th>e-chain® with extender crossbar</th>
<th>Hose Ø ≤ [mm]</th>
<th>Part No. crossbars every link</th>
<th>Part No. crossbars every 2nd link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extender crossbar and standard crossbar alternating along the inner and outer radius</td>
<td>34</td>
<td>E4.32.XXXHB50.R.0</td>
<td>–</td>
</tr>
<tr>
<td>Extender crossbar on both sides along the inner and outer radius</td>
<td>120</td>
<td>E4.32.XXXB50.R.0</td>
<td>H4.32.XXXB50.R.0</td>
</tr>
<tr>
<td>Extender crossbar along the outer radius</td>
<td>72</td>
<td>E4.32.XXXB50.R.0</td>
<td>H4.32.XXXB50.R.0</td>
</tr>
<tr>
<td>Extender crossbar along the inner radius</td>
<td>72</td>
<td>E4.32.XXXBZ50.R.0</td>
<td>H4.32.XXXBZ50.R.0</td>
</tr>
<tr>
<td>Extender crossbar and standard crossbar alternating along the inner radius</td>
<td>34</td>
<td>E4.32.XXXHBE50.R.0</td>
<td>–</td>
</tr>
<tr>
<td>Extender crossbar and standard crossbar alternating along the outer radius</td>
<td>34</td>
<td>E4.32.XXXHB50.R.0</td>
<td>–</td>
</tr>
</tbody>
</table>

- **Minimum bend radius:** R 105 | Minimum bend radius: R 150 | Minimum bend radius: R 200
- **Suitable for hoses with a maximum outer diameter of 105mm.**
- **Variant 1: extender crossbar with fixed width to combine with standard crossbars**
- **Variant 2: extender crossbar with fixed width attached directly on the side link**
- **Gliding with crossbars assembled along the outer radius and a special guide trough**

**Order example:**

- **Combined with openable crossbars**
  - To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain®, please add index E: E4.32.10/15RHD115/R.0
  - To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain®, please add index Z: E4.32.10/15RHD115/R.0

**Combined with openable crossbars**

- To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: E4.32.10/15RD115/R.0

---

**More information**

- **www.igus.co.uk/E4.32**
- **www.igus.co.uk/H4.32**
- **www.igus.co.uk/R4.32**

---

**3D CAD, configurators, service life calculation and more**

- **www.igus.co.uk/E4.1**
E4.32 | Series E4.32·H4.32·R4.32 | Further accessories

Extension links | Hinged crossbars | Swivel clip

**Extension links | For extremely wide e-chains® up to 3.0m**
- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3,000mm
- Unsupported length FLmax. can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension link e-chain®</td>
<td>Extension link e-tube</td>
<td>Extension link as an individual part</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi1, Bi2, Bi3, etc. and the radius (R). Example: E4.32.B1/20/10,200.0

**Hinged crossbars | Swivel clip | Openable crossbar remains attached to the e-chain®**
- When opening crossbars must remain attached to the e-chain®
- Hinged crossbars consist of a swivel clip and a shortened crossbar
- Openable crossbar (shortened): Bi -37.5mm (smallest inner width Bi = 87.5)
- Please consult igus® for assistance with this product

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain® with hinged crossbar</td>
<td>swivel clip as an individual part</td>
<td>openable crossbar as an individual part</td>
</tr>
<tr>
<td>E4.32.B1/Z/R.0</td>
<td>385.02</td>
<td>385.03</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi, the index Z for the required option and the radius (R). Example: E4.32.B1/20/10,200.0

**Aluminium support tray**
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

**Swarf up to +850°C**
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain

More information ► www.igus.co.uk/HT

**Reduce assembly time - E4 e-chain® opener**
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ► www.igus.co.uk/E4savetime

**Roller crossbars - increase the service life of cables and hoses**
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible

More information ► www.igus.co.uk/roller-crossbar
Series E4.42 | H4.42 | R4.42

Part No. | Bi | Ba | E4.42 | H4.42 | R4.42
--- | --- | --- | --- | --- | ---
e-chains® / e-tubes | mm | mm | kg/m | kg/m | kg/m
E4/H4.42 42 | 05. | R0 | 50 | 76 | 2.10 | 2.74
E4/H4.42 | 42. | 06. | R0 | 68 | 94 | 2.10 | --
E4/H4.42 | 42. | 07. | R0 | 75 | 101 | 2.12 | 3.05
E4/H4.42 | 42. | 087. | R0 | 87 | 114 | 2.15 | 3.20
E4/H4.42 | 42. | 097. | R0 | 97 | 123 | 2.17 | --
E4/H4.42 | 42. | 10. | R0 | 100 | 126 | 2.38 | 3.34
E4/H4.42 | 42. | 11. | R0 | 108 | 134 | 2.39 | --
E4/H4.42 | 42. | 112. | R0 | 112 | 139 | 2.22 | --
E4/H4.42 | 42. | 12. | R0 | 125 | 151 | 2.26 | 3.58
E4/H4.42 | 42. | 137. | R0 | 137 | 164 | 2.28 | --
E4/H4.42 | 42. | 15. | R0 | 150 | 176 | 2.32 | 3.87
E4/H4.42 | 42. | 162. | R0 | 162 | 189 | 2.33 | --
E4/H4.42 | 42. | 17. | R0 | 168 | 194 | 2.36 | 4.10
E4/H4.42 | 42. | 18. | R0 | 175 | 201 | 2.37 | --
E4/H4.42 | 42. | 187. | R0 | 187 | 214 | 2.39 | --
E4/H4.42 | 42. | 20. | R0 | 200 | 226 | 2.44 | 4.44

Part No. | Bi | Ba | E4.42 | H4.42 | R4.42
--- | --- | --- | --- | --- | ---
e-chains® / e-tubes | mm | mm | kg/m | kg/m | kg/m
E4/H4.42 | 42. | 05. | R0 | 50 | 76 | 2.10 | 2.74
E4/H4.42 | 42. | 06. | R0 | 68 | 94 | 2.10 | --
E4/H4.42 | 42. | 07. | R0 | 75 | 101 | 2.12 | 3.05
E4/H4.42 | 42. | 087. | R0 | 87 | 114 | 2.15 | 3.20
E4/H4.42 | 42. | 097. | R0 | 97 | 123 | 2.17 | --
E4/H4.42 | 42. | 10. | R0 | 100 | 126 | 2.38 | 3.34
E4/H4.42 | 42. | 11. | R0 | 108 | 134 | 2.39 | --
E4/H4.42 | 42. | 112. | R0 | 112 | 139 | 2.22 | --
E4/H4.42 | 42. | 12. | R0 | 125 | 151 | 2.26 | 3.58
E4/H4.42 | 42. | 137. | R0 | 137 | 164 | 2.28 | --
E4/H4.42 | 42. | 15. | R0 | 150 | 176 | 2.32 | 3.87
E4/H4.42 | 42. | 162. | R0 | 162 | 189 | 2.33 | --
E4/H4.42 | 42. | 17. | R0 | 168 | 194 | 2.36 | 4.10
E4/H4.42 | 42. | 18. | R0 | 175 | 201 | 2.37 | --
E4/H4.42 | 42. | 187. | R0 | 187 | 214 | 2.39 | --
E4/H4.42 | 42. | 20. | R0 | 200 | 226 | 2.44 | 4.44

E4/H4.42 | 30.300.0 | D1 | FL | S | H | L | K
--- | --- | --- | --- | --- | --- | --- | ---
75.0 | 100% | 115% | 125 | 150 | 160 | 175 | 200 | 250 | 300 | 350

Part No. with required radius (R): Example: E4.42.30.300.0 = crossbars every link / H4.42.30.300.0 = crossbars every 2nd link / R4.42.30.300.0 = fully enclosed

Notes:
- ESD version available from stock
- Crossbars every link (crossbars removable along the inner and outer radius)
- Crossbars every 2nd link (crossbars removable along the inner and outer radius)
- Fully enclosed (crossbars removable along the outer radius, from one side)

More information ➤ www.igus.co.uk/E4.1

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1
**E4.42 | e-chains® E4.42-H4.42 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

**E4.42 | e-tubes R4.42 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

### Table: KMA Pivoting and Locking

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>E4.420.05 [12 C]</td>
<td>E4.421.05 [12 C]</td>
<td>50</td>
</tr>
<tr>
<td>06</td>
<td>E4.420.06 [12 C]</td>
<td>E4.421.06 [12 C]</td>
<td>68</td>
</tr>
<tr>
<td>08</td>
<td>E4.420.08 [12 C]</td>
<td>E4.421.08 [12 C]</td>
<td>87</td>
</tr>
<tr>
<td>10</td>
<td>E4.421.10 [12 C]</td>
<td>E4.421.10 [12 C]</td>
<td>100</td>
</tr>
<tr>
<td>16</td>
<td>E4.421.16 [12 C]</td>
<td>E4.421.16 [12 C]</td>
<td>175</td>
</tr>
<tr>
<td>18</td>
<td>E4.421.18 [12 C]</td>
<td>E4.421.18 [12 C]</td>
<td>200</td>
</tr>
</tbody>
</table>

### Notes:

- Recommended for unsupported and gliding applications
- Recommended for vertical hanging and standing applications
- KMA pivoting
- KMA locking

### Diagrams:

- Fixed end
- Moving end
- KMA mounting brackets
- Pivoting angle depends on radius
- Pivoting angle depends on radius
- Pivoting angle depends on radius

---

**E4.42 | e-tubes R4.42 | Accessories**

KMA mounting brackets | Attachment from any side | Pivoting | Locking

---

### Table: KMA Pivoting and Locking

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>05</td>
<td>R4.420.05 [12 C]</td>
<td>R4.421.05 [12 C]</td>
<td>50</td>
</tr>
<tr>
<td>06</td>
<td>R4.420.06 [12 C]</td>
<td>R4.421.06 [12 C]</td>
<td>68</td>
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<td>R4.421.10 [12 C]</td>
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<tr>
<td>16</td>
<td>R4.421.16 [12 C]</td>
<td>R4.421.16 [12 C]</td>
<td>175</td>
</tr>
<tr>
<td>18</td>
<td>R4.421.18 [12 C]</td>
<td>R4.421.18 [12 C]</td>
<td>200</td>
</tr>
</tbody>
</table>

### Notes:

- Recommended for unsupported and gliding applications
- Recommended for vertical hanging and standing applications

---

**Strain relief**

E.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chain fix range with ordering options. From page 1300
E4.42 | H4.42 | R4.42

**E4.1 | Series E4.42-H4.42-R4.42 | Accessories**

**Interior separation | Increase cable service life**

Previous generation of interior separation with other options | [www.igus.co.uk/E4.42](http://www.igus.co.uk/E4.42)

Note: Please be aware of the minimum lateral gap to the side links! e-tubes: 30mm

As standard separators are fitted every 2 m e-chain link!

**Width = X [mm]**

<table>
<thead>
<tr>
<th><strong>X [mm]</strong></th>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
</tr>
<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
</tr>
<tr>
<td>115</td>
<td>3200.115</td>
<td>3210.115</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>3200.125</td>
</tr>
<tr>
<td>150</td>
<td>3200.150</td>
</tr>
<tr>
<td>175</td>
<td>3200.175</td>
</tr>
<tr>
<td>200</td>
<td>3200.200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>225</td>
<td>3200.225</td>
</tr>
<tr>
<td>250</td>
<td>3200.250</td>
</tr>
</tbody>
</table>

**Shelves**

Width = X [mm]

<table>
<thead>
<tr>
<th><strong>X [mm]</strong></th>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>3200.050</td>
<td>3210.050</td>
</tr>
<tr>
<td>075</td>
<td>3200.075</td>
<td>3210.075</td>
</tr>
<tr>
<td>100</td>
<td>3200.100</td>
<td>3210.100</td>
</tr>
<tr>
<td>115</td>
<td>3200.115</td>
<td>3210.115</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>125</td>
<td>3200.125</td>
</tr>
<tr>
<td>150</td>
<td>3200.150</td>
</tr>
<tr>
<td>175</td>
<td>3200.175</td>
</tr>
<tr>
<td>200</td>
<td>3200.200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>unassembled</strong></th>
<th><strong>assembled</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>225</td>
<td>3200.225</td>
</tr>
<tr>
<td>250</td>
<td>3200.250</td>
</tr>
</tbody>
</table>

**E4.1 | Series E4.42-H4.42-R4.42 | Accessories**

**Interior separation | To allow faster filling**

**Note:** Please be aware of the minimum lateral gap to the side links! e-tubes: 30mm

As standard separators are fitted every 2 m e-chain link!

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**

Separator for igus® QuickLock crossbar 385.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

**For small cables**

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

**For side-mounted applications**

Asymmetrical separator, for defined gap distance. No additional spacers required.

**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Split separators**

In order to fill e-chain® more easily and efficiently, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

**Lean separators New**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

(“Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

**More interior separation options**

**Notch locking separator for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.
**TUB** | Safe guidance for corrugated tubes parallel to the e-chain®

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 07, 10, 12, 17mm to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

<table>
<thead>
<tr>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>For corrugated tube nominal diameter Ø [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outer link right*</td>
<td>Outer link left*</td>
<td>Outer link at both ends*</td>
<td>E4.42,XXX TUB: R,0</td>
</tr>
</tbody>
</table>

*Not visible from the fixed end*  
Part number appended with width index XXX BI and radius (R) e.g., E4.42.100 TUB: 150,0 = with TUB outer sections every 2nd right hand link

**Product range | PMACLIP | Support, one-piece, with safety clip**

PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes

<table>
<thead>
<tr>
<th>Part No.</th>
<th>NW</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>E</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>PMACLIP</td>
<td>Ø [mm]</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
</tr>
<tr>
<td>I-BFH-07-0</td>
<td>07</td>
<td>17.0</td>
<td>20.0</td>
<td>21.5</td>
<td>13.5</td>
<td>40.5</td>
<td>M4</td>
</tr>
<tr>
<td>I-BFH-10-0</td>
<td>10</td>
<td>20.5</td>
<td>20.0</td>
<td>24.5</td>
<td>15.5</td>
<td>47.5</td>
<td>M5</td>
</tr>
<tr>
<td>I-BFH-12-0</td>
<td>12</td>
<td>24.0</td>
<td>20.0</td>
<td>27.0</td>
<td>16.5</td>
<td>54.5</td>
<td>M5</td>
</tr>
<tr>
<td>I-BFH-17-0</td>
<td>17</td>
<td>30.0</td>
<td>20.0</td>
<td>34.0</td>
<td>20.0</td>
<td>68.0</td>
<td>M6</td>
</tr>
</tbody>
</table>

**Extender crossbars with flexible width | Safe guiding for large hoses**

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

**Versions**

<table>
<thead>
<tr>
<th>Hose Ø [mm]</th>
<th>Part No. every link</th>
<th>Part No. every link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extender crossbar</td>
<td>E4.42,XXX HB50: R,0</td>
<td>-</td>
</tr>
<tr>
<td>Extender crossbar on both sides along the inner and outer radius</td>
<td>E4.42,XXX BS50: R,0</td>
<td>H4.42,XXX BS50: R,0</td>
</tr>
<tr>
<td>Extender crossbar along the inner radius</td>
<td>E4.42,XXX B50: R,0</td>
<td>H4.42,XXX B50: R,0</td>
</tr>
<tr>
<td>Extender crossbar along the outer radius</td>
<td>E4.42,XXX B50: R,0</td>
<td>H4.42,XXX B50: R,0</td>
</tr>
</tbody>
</table>

**Available inner widths**

<table>
<thead>
<tr>
<th>BI [mm]</th>
<th>Available inner widths</th>
</tr>
</thead>
<tbody>
<tr>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>262</td>
<td>275</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index XXX BI and the minimum bend radius (R). Example: E4.42.100 BS50: 150,0 = crossbars every link, extender crossbar on both sides along the inner and outer radius

The E4.1 can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination
Extender crossbars with fixed width | Safe guiding for large hoses

- Suitable for hoses with a maximum outer diameter of 105mm.
- Variant 1: extender crossbar with fixed width to combine with standard crossbars
- Variant 2: extender crossbar with fixed width attached directly on the side link
- Optionally openable along the inner "Z" radius
- Gliding with crossbars assembled along the outer radius and a special guide trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Hose Ø</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>385.15RHD115</td>
<td>106</td>
<td>round</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>385.18RD115</td>
<td>106</td>
<td>round</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Order example: 1 combined with openable crossbars
To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain, please add index E: E4.42.10/15RHD115/10,R,0
To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain, please add index Z: E4.42.10/15RHDZ115/10,R,0

Extension links | For extremely wide e-chains<sup>®</sup> up to 3.0m

- Virtually unlimited side-by-side extension
- For extremely wide e-chains<sup>®</sup> up to 3,000mm
- Unsupported length FL<sub>b</sub> max. can be increased when heavy fill weights are required
- e-chains<sup>®</sup> and e-tubes can be combined
- Attached with KMA or steel mounting brackets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension link e-chain&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Extension link e-tube</td>
<td>Extension link as an individual part</td>
</tr>
<tr>
<td>E4.42.Bi/Bi/Bi/Z/R,0</td>
<td>R4.42.Bi/Bi/Bi/Z/R,0</td>
<td>384,R,0</td>
</tr>
</tbody>
</table>

Hinged crossbars | Swivel clip | Openable crossbar remains attached to the e-chain<sup>®</sup>

- When opening crossbars must remain attached to the e-chain<sup>®</sup>
- Hinged crossbars consist of a swivel clip and a shortened crossbar
- Openable crossbar (shortened: Bi = 37.5mm (smallest inner width Bi = 87.5))
- Please consult igus® for assistance with this product

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain&lt;sup&gt;®&lt;/sup&gt; with hinged crossbar</td>
<td>Swivel clip as an individual part</td>
<td>Openable crossbar as an individual part</td>
</tr>
<tr>
<td>E4.42.Bi/Z,R,0</td>
<td>385.02</td>
<td>385.03</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi1/Bi2/Bi3/etc. and the radius (R), Example: E4.42.15/20/100,R,0
E4.1 | Application example

Igus® e-chains® can even withstand the difficult conditions in stone processing facilities. The task of this e-chain® is to supply the tool carriage with energy (up to 100 A), signals, compressed air and water. It can travel up to 12m and achieves speeds of up to 32m/min.
E4.56 - E4.56 - e-chains® Series E4.56
E4.56 - e-chains® Series H4.56 - e-chains® Series R4.56
Crossbars every link (crossbars removable along the inner and outer radius)
Crossbars every 2nd link (crossbars removable along the inner and outer radius)
Fully enclosed (tubes openable along the outer radius, from one side)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>E4.56</th>
<th>H4.56</th>
<th>R4.56</th>
<th>E4.56</th>
<th>H4.56</th>
<th>R4.56</th>
<th>E4.56</th>
<th>H4.56</th>
<th>R4.56</th>
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</thead>
<tbody>
<tr>
<td>E4, 4. –</td>
<td>56, R, 0.</td>
<td>50</td>
<td>84</td>
<td>3.69</td>
<td>3.59</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>E4, 4. –</td>
<td>56, R, 0.55</td>
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<td>89</td>
<td>3.65</td>
<td>3.62</td>
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Available bend radii

- E4.56, 30.300.0 = crosses every link / H4.56, 30.300.0 = crosses every 2nd link / R4.56, 30.300.0 = fully enclosed

- ESD - many sizes from stock
- Standardised product made from unplasticised ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information: www.igus.co.uk/esd

Gilder applications

For long travels from 12m to max. 400m

- LK = S/2 + K2
- Moving end – Guide trough with glide bar
- Fixed end – Guide trough without glide bar

Notes:
- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels between 10 and 12m we recommend an e-chain® with a longer unsupported length.

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### E4.56 | e-chains® E4.56-H4.56 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

#### KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

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</table>

---

### E4.1 | e-tubes R4.56 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

#### KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
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</table>

#### E4.56 | A2 | Order example
To indicate option with brackets pre-fitted C-profile option
Full set
Even numbers of links
Width index
Series

---

### Strain relief
- e-clamps, tie wrap plates, nuggets and plug-in clips are available from stock.
- The complete chain range with ordering options From page 1300

---

[614](#) More information ➤ www.igus.co.uk/E4.56 ➤ www.igus.co.uk/H4.56 ➤ www.igus.co.uk/R4.56

[615](#) 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E4.1
H4.56 | Series E4.56-H4.56-R4.56 | Accessories

Interior separation | Increase cable service life

Previous generation of interior separation with other options ► www.igus.co.uk/E4.56

More information ► www.igus.co.uk/E4.56

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Separator for igus® QuickLock crossbar 450.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

E4.1 | Series E4.56-H4.56-R4.56 | Accessories

Interior separation | To allow faster filling

Previous generation of interior separation with other options ► www.igus.co.uk/E4.56

More information ► www.igus.co.uk/E4.56

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

Split separators
In order to fill e-chains® more easily and quickly, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

Lean separators
New

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

Shelves Width X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
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<th>assembled</th>
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X [mm] unassembled assembled X [mm] unassembled assembled X [mm] unassembled assembled

050 520.050 521.050 150 520.150 521.150 300 520.300 521.300
065 520.065 521.065 175 520.175 521.175 350 520.350 521.350
075 520.075 521.075 200 520.200 521.200 375 520.375 521.375
100 520.100 521.100 225 520.225 521.225 387 520.387 521.387
125 520.125 521.125 250 520.250 521.250 450 520.450 521.450

E4.56
H4.56
R4.56
**E4.56 | Series E4.56·H4.56·R4.56 | Accessories**

More interior separation options

---

**E4.1 | Series E4.56·H4.56·R4.56 | Further accessories**

**TUB New**

---

**TUB | Safe guidance for corrugated tubes parallel to the e-chain®**

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 17, 23, 29, 36, 48mm to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

---

**Part Number**

<table>
<thead>
<tr>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>For corrugated tube nominal diameter</th>
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<tr>
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<td>Outer link left*</td>
<td>Outer link at both ends*</td>
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<td>E4.56.XXXTUBL.R,0</td>
<td>E4.56.XXXTUB.R,0</td>
<td>17 / 23 / 29 / 36 / 48</td>
</tr>
</tbody>
</table>

*As viewed from the fixed end

Part number appended with width index XXX, BI, and radius (R) e.g.

**E4.56.100TUBR.150.0 = with TUB outer sections every 2nd right hand link**

---

**Product range | PMACLIP | Support, one-piece, with safety clip**

**PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes**

---

**Part No. | NW | A | B | C | H | E | M**
<table>
<thead>
<tr>
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<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
<td>mm</td>
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<td>68.0</td>
<td>37.0</td>
<td>143.0</td>
<td>M6</td>
</tr>
</tbody>
</table>

---

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

---

**Notch locking separator for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

---

**Partial height separator**

In conjunction with an additional opening crossbar, part no. 450.Bi.S, it provides the option to separate the upper and lower halves of the e-chain® independently of each other.

---

**Rollclip**

Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

---

**Roller separator**

The roller separator is used in a similar way to the rollclip. It is used like a separator. For rigid cables and hoses.

---

**More information**

www.igus.co.uk/E4.1
Extender crossbars with fixed width | Safe guiding for large hoses

- Suitable for hoses with a maximum outer diameter of 245mm.
- Variant 1: extender crossbar with fixed width to combine with standard crossbars
- Variant 2: extender crossbar with fixed width attached directly on the side link
- Optionally openable along the inner “Z” or outer “E” radius
- Gliding with crossbars assembled along the outer radius and a special guide trough

### Part No. extender crossbar with fixed width, as individual parts

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Hose Ø [mm]</th>
<th>Crossbar shape</th>
<th>Fitted to side link</th>
<th>Combined with openable crossbars</th>
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</thead>
<tbody>
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<td>450.15RH115</td>
<td>115</td>
<td>round</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.17RD115</td>
<td>115</td>
<td>round</td>
<td>Yes</td>
<td>No</td>
</tr>
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<td>square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.30D200</td>
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<td>No</td>
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<td>Yes</td>
</tr>
</tbody>
</table>

Order example: 1 combined with openable crossbars
To receive extender crossbar RH115 pre-fitted along the outer radius of the chain®, please add index E: E4.56.15/15RH115/10.R.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: E4.56.15/15RD115/10.R.0

Order example: 2 fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: E4.56.17RD115/15.R.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: E4.56.17RD115/10.R.0

Extension links | For extremely wide e-chains® up to 3.0m

- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3,000mm
- Unsupported length FLmax can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

### Part No. Extension link e-chain® | Part No. Extension link e-tube | Part No. Extension link as an individual part

Complete Part No. with the width index B1/B2/B3/etc. and the radius (R), Example: E4.56.10/20/10.200.0

With the E4.1 TUB, corrugated tubes can be reliably guided in parallel, saving space
**E4.1 | Series E4.56-H4.56-R4.56 | Further accessories**

**E4 snapclip - clip-on tiewrap**
- For side-mounted applications, compatible with many E4 e-chains®
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as required

More information → [www.igus.co.uk/E4.56](http://www.igus.co.uk/E4.56)

---

**E4.56**

**H4.56**

**R4.56**

---

**Steel support tray for support of the lower run**
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

More information → From page 1264

---

**Swarf up to +850°C**
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material

More information → [www.igus.co.uk/HT](http://www.igus.co.uk/HT)

---

**Reduce assembly time - E4 e-chain® opener**
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information → [www.igus.co.uk/E4savetime](http://www.igus.co.uk/E4savetime)

---

**Heavy-duty version - for very long travels or heavy fill weights**
- High torsional rigidity and tensile strength
- Robust steel mounting brackets
- For long-term operation in very humid environments

Series 4040HD-R8840HD. More information → [www.igus.co.uk/4040HD](http://www.igus.co.uk/4040HD)

---

**Roller crossbars - increase the service life of cables and hoses**
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible

More information → [www.igus.co.uk/roller-crossbar](http://www.igus.co.uk/roller-crossbar)

---

**E4.1 | Application example**

E4.1 as a noise-optimised version with extension links. Un-supported application with high fill weight. Harnessed with rigid hydraulic hoses. The max. noise level can be reduced up to 9dB(A) using the optional rubber dampers.
E4.80 | Series E4.80-H4.80-R4.80 | Product range
Stable due to undercut design, new very large inner height

---

**Part No.** / **Bi** / **Ba**

**e-chains® / e-tubes**

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<tr>
<th></th>
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**Crossbars every link (crossbars removable along the inner and outer radius)**

- **Part No.** / **Bi** / **Ba**
- **e-chains® / e-tubes**

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Available bend radii

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<tbody>
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<td>300</td>
<td>400</td>
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</tbody>
</table>

Complete Part No. with required radius (R). Example:

E4.80.30.30.0.0 = crossbars every link / H4.80.30.30.0.0 = crossbars every 2nd link / R4.80.30.30.0.0 = fully enclosed

**E4.80-H4.80-R4.80 | Installation dimensions**

Unsupported applications | Short travels

**Gliming applications | For long travels from 12m to max. 400m**

**Notes:** We recommend the project planning of such a system to be carried out by igus®. In case of travels between 10 and 12m we recommend an e-chain® with a longer unsupported length.

**3D CAD, configurators, service life calculation and more** | [www.igus.co.uk/E4.1](http://www.igus.co.uk/E4.1)

---

**ESD - many sizes from stock**

- Standardised product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information | [www.igus.co.uk/esd](http://www.igus.co.uk/esd)
E4.80 | E-chains® E4.80-H4.80 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

**Width** | **Part No. full set KMA pivoting** | **Part No. full set KMA locking** | **Bi**
--- | --- | --- | ---
05. | E4.80.05 | 12.0 | 50
05a. | E4.80.055 | 12.C | 55
06. | E4.80.06 | 12.0 | 65
07. | E4.80.07 | 12.0 | 75
08. | E4.80.08 | 12.0 | 87
10. | E4.80.10 | 12.0 | 100
11. | E4.80.11 | 12.0 | 112
12. | E4.80.12 | 12.0 | 125
13. | E4.80.13 | 12.0 | 137
14. | E4.80.14 | 12.0 | 150
15. | E4.80.15 | 12.0 | 162
16. | E4.80.16 | 12.0 | 175
18. | E4.80.18 | 12.0 | 182
19. | E4.80.19 | 12.0 | 197
20. | E4.80.20 | 12.0 | 200
21. | E4.80.21 | 12.0 | 207
22. | E4.80.22 | 12.0 | 212
23. | E4.80.23 | 12.0 | 225
24. | E4.80.24 | 12.0 | 237
25. | E4.80.25 | 12.0 | 250
26. | E4.80.26 | 12.0 | 262
27. | E4.80.27 | 12.0 | 275

**Width** | **Part No. full set KMA pivoting** | **Part No. full set KMA locking** | **Bi**
--- | --- | --- | ---
06. | E4.80.06 | 12.0 | 87
07. | E4.80.07 | 12.0 | 75
08. | E4.80.08 | 12.0 | 87
10. | E4.80.10 | 12.0 | 100
11. | E4.80.11 | 12.0 | 112
12. | E4.80.12 | 12.0 | 125
13. | E4.80.13 | 12.0 | 137
14. | E4.80.14 | 12.0 | 150
15. | E4.80.15 | 12.0 | 162
16. | E4.80.16 | 12.0 | 175
18. | E4.80.18 | 12.0 | 182
19. | E4.80.19 | 12.0 | 197
20. | E4.80.20 | 12.0 | 200
21. | E4.80.21 | 12.0 | 207
22. | E4.80.22 | 12.0 | 212
23. | E4.80.23 | 12.0 | 225
24. | E4.80.24 | 12.0 | 237
25. | E4.80.25 | 12.0 | 250
26. | E4.80.26 | 12.0 | 262
27. | E4.80.27 | 12.0 | 275

Note: The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index (Bi) for odd or even number of links required. Please add index A2 for the preassembled standard version with C-profile. In the inner radius at the moving end and in the outer radius at the fixed end.

**Width** | **Part No. full set KMA pivoting** | **Part No. full set KMA locking** | **Bi**
--- | --- | --- | ---
10. | R4.80.10 | 12.C | 100
15. | R4.80.15 | 12.C | 150
20. | R4.80.20 | 12.C | 200
25. | R4.80.25 | 12.C | 250

E4.80 | R4.80 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting | Locking

KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

**Width** | **Part No. full set KMA pivoting** | **Part No. full set KMA locking** | **Bi**
--- | --- | --- | ---
30. | R4.80.30 | 12.C | 300
35. | R4.80.35 | 12.C | 350
40. | R4.80.40 | 12.C | 400
45. | R4.80.45 | 12.C | 450
50. | R4.80.50 | 12.C | 500
55. | R4.80.55 | 12.C | 550
60. | R4.80.60 | 12.C | 600

**Width** | **Part No. full set KMA pivoting** | **Part No. full set KMA locking** | **Bi**
--- | --- | --- | ---
30. | R4.80.30 | 12.C | 300
35. | R4.80.35 | 12.C | 350
40. | R4.80.40 | 12.C | 400
45. | R4.80.45 | 12.C | 450
50. | R4.80.50 | 12.C | 500
55. | R4.80.55 | 12.C | 550
60. | R4.80.60 | 12.C | 600

E4.80 | R4.80 Pivoting angle on radius

KMA = polymer metal mounting bracket. For the C-profile option please add index C.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options From page 1300

3D CAD, configurators, service life calculation and more | www.igus.co.uk/E4.1

More information | www.igus.co.uk/E4.80 | www.igus.co.uk/H4.80 | www.igus.co.uk/R4.80 | www.igus.co.uk/R4.80
E4.1 | Series E4.80·H4.80·R4.80 | Accessories

Interior separation | Increase cable service life

As standard separators are fitted every 2nd e-chain® link!

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Separator for igus® QuickLock crossbar 450.X.O. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves
Width = X [mm]

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<th>un assembled</th>
<th>assembled</th>
<th>X</th>
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Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time (*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

More information ► www.igus.co.uk/E4.80 ► www.igus.co.uk/H4.80 ► www.igus.co.uk/R4.80
**E4.1 | Series E4.80·H4.80·R4.80 | Accessories**

**More interior separation options**

![Diagram showing interior separation options]

**Notch locking separator for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

**Separator, one end locking**

Offset slots for more variability

**Rollclip**

Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

*Only for e-chain®

**TUB | Safe guidance for corrugated tubes parallel to the e-chain®**

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 17, 23, 29, 36, 48mm to be easily clipped on
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACLIP support and the hose are ordered separately

<table>
<thead>
<tr>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>Part No. TUB</th>
<th>For corrugated tube nominal diameter</th>
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<tr>
<td>Outer link right*</td>
<td>Outer link left*</td>
<td>Outer link at both ends*</td>
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<td>E4.80.XXXTUBR.R,0</td>
<td>E4.80.XXXTUBL.R,0</td>
<td>E4.80.XXXTUB.R,0</td>
<td>17 / 23 / 29 / 36 / 48</td>
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</table>

*Part number appended with width index XXX, BI and radius (R) e.g. E4.80.100TUBR,150.0 = with TUB outer sections every 2nd right hand link

**Product range | PMACLIP | Support, one-piece, with safety clip**

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<tr>
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<td>37.0</td>
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PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes
Extender crossbars with fixed width

<table>
<thead>
<tr>
<th>Part No. extender crossbar with fixed width, as individual parts</th>
<th>Hose Ø mm</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
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<td>450.15RHD115</td>
<td>115</td>
<td>Ø round</td>
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<td>Yes</td>
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<td>450.25D150</td>
<td>150</td>
<td>Ø square</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>450.30D200</td>
<td>200</td>
<td>Ø square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.35D250</td>
<td>220</td>
<td>Ø square</td>
<td>Yes</td>
<td>No</td>
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<td>450.40D300</td>
<td>270</td>
<td>Ø square</td>
<td>Yes</td>
<td>No</td>
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<td>450.20HD150</td>
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<td>Ø square</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>450.25HD200</td>
<td>200</td>
<td>Ø square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.30HD250</td>
<td>220</td>
<td>Ø square</td>
<td>No</td>
<td>Yes</td>
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</table>

Order example: combined with openable crossbars
To receive extender crossbar RHD115 pre-fitted along the outer radius of the-chain®, please add index E: E4.80.15RHD115/10.0
To receive extender crossbar RHD115 pre-fitted along the inner radius of the-chain®, please add index Z: E4.80.15RHD115/10.0

Order example: fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the-chain®, please add index E: E4.80.17RD115/10.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index Z: E4.80.17RD115/10.0

Extension links

<table>
<thead>
<tr>
<th>Part No. extention link as an individual part</th>
<th>Part No. extention link e-chain®</th>
<th>Extension link e-tube</th>
</tr>
</thead>
</table>


Due to the undercut design igus® E4.1 series feature high lateral stability. High lateral accelerations of up to 8m/s² can be managed on this milling machine for bicycles.
E4 snapclip - clip-on tiewrap
- For side-mounted applications, compatible with many E4 e-chains®
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as required
More information ► www.igus.co.uk/E4.80

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ► From page 1264

Swarf up to +850°C
- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material
More information ► www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
More information ► www.igus.co.uk/E4savetime

Heavy-duty version - for very long travels or heavy fill weights
- High torsional rigidity and tensile strength
- Robust steel mounting brackets
- For long-term operation in very humid environments
Series 5050HD·R9850HD. More information ► www.igus.co.uk/5050HD

Roller crossbars - increase the service life of cables and hoses
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
More information ► www.igus.co.uk/roller-crossbar

E4.1 in an earth drilling machine. This vertically standing installation works even under strong vibration and harsh environments due to its plastic construction and having no loose parts such as rivets or screws.
e-chains® | Series E4.112 | Crossbars every link (crossbars removable along the inner and outer radius)

e-tubes | Series R4.112 | Fully enclosed (tubes operable along the outer radius, from one side)

### Part No. | E4.112 / E4.112 | Bi | Ba | Bi | Ba | Bi | Ba |
<table>
<thead>
<tr>
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Available bend radii

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<td>1,700</td>
<td>1,900</td>
<td>2,050</td>
</tr>
<tr>
<td>K2</td>
<td>1,573</td>
<td>1,716</td>
<td>1,859</td>
<td>2,288</td>
<td>2,574</td>
<td>2,860</td>
<td>3,146</td>
<td>3,432</td>
<td>3,861</td>
</tr>
</tbody>
</table>

Note: We recommend the project planning of such a system to be carried out by igus®.
In case of travels between 11 and 14m we recommend an e-chain® with a longer unsupported length.

**Unsupported applications**

**Short travels**

For long travels from 14m to max. 450m

The required clearance height: \( H_f = H \times 100 \)mm (with 5.0kg/m fill weight)

*Radius not available for e-tubes*
Steel pivoting
Recommended for unsupported and gliding applications
Recommended for vertical hanging and vertical standing applications

Steel locking

Fixed end
- E4.1120.4
- E4.1120.2
- E4.1120.1

Moving end
- pivoting
- Locking
- E4.1120.3
- E4.1120.10

Part
E4.1120.4
E4.1120.2
E4.1120.1
Description
steel pivoting
mounting bracket
E4.1120.4 (34 VS)
Full set (both ends),
- ending with outer side link, screwed - standard

E4.1120.2 (34 VS)
Full set (both ends) - beginning with outer side link
- (moving end) - ending with inner side link (fixed end), screwed - standard

E4.1120.1 (34 VS)
Stainless steel version available. Please add index E [Material: stainless steel 1.4301]

Part
E4.1120.4
E4.1120.2
E4.1120.1
Description
steel locking
mounting bracket
E4.1120.4 (12 VS)
Full set (both ends),
- ending with outer side link, screwed - standard

E4.1120.2 (12 VS)
Full set (both ends) - beginning with outer side link
- (moving end) - ending with inner side link (fixed end), screwed - standard

E4.1120.1 (12 VS)
Stainless steel version available. Please add index E [Material: stainless steel 1.4301]

Note: Depending on the chain length, the e-chain® may end with either an outer or an inner side link. For the best appearance, make sure the e-chain® ends with either side links whenever possible. (With odd number of links)

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
E4.1 | e-tubes R4.112 | Accessories (e-chains® ► previous page)

Interior separation | Increase cable service life | Only for e-tubes

Previous generation of interior separation with other options ► www.igus.co.uk/R4.112

Note: Please be aware of the minimum lateral gap to the side links! e-tubes: 32mm
As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

<table>
<thead>
<tr>
<th>Width X</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>1120.050</td>
<td>1121.050</td>
</tr>
<tr>
<td>065</td>
<td>1120.065</td>
<td>1121.065</td>
</tr>
<tr>
<td>075</td>
<td>1120.075</td>
<td>1121.075</td>
</tr>
<tr>
<td>100</td>
<td>1120.100</td>
<td>1121.100</td>
</tr>
<tr>
<td>125</td>
<td>1120.125</td>
<td>1121.125</td>
</tr>
</tbody>
</table>

Standard separator, wide base
 unassembled 108.1
 assembled 108.1.1

Shelf, lockable
 unassembled 1120.X
 assembled 1121.X

Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 16mm
As standard separators are fitted every 2nd e-chain® link!

Split separators*
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

Lean separators* New
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time
("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

More interior separation options

Note locking separator for increased holding force
Note locking separators* offer higher crossbar opening forces with high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Rollclip®
Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

*Only for e-chain®

Compact design, custom configuration: two nested E4.112 e-chains® each around 12m long carry very heavy fill weights
E4.1 | Series E4.112-R4.112 | Further accessories

Extender crossbar with fixed width

- Suitable for hoses with a maximum outer diameter of 270mm
- Variant 1 extender crossbar with fixed width to combine with standard crossbars
- Variant 2 extender crossbar with fixed width attached directly on the side link
- Optionally operable along the inner "Z" or outer "E" radius
- Gliding with crossbars assembled along the outer radius and a special guide trough

Extender crossbars with fixed width | Safe guiding for large hoses

- Round or square extender crossbar ① combined with openable crossbars or ② attached directly on the side link (as viewed from the fixed end)

<table>
<thead>
<tr>
<th>Part No. extender crossbar with fixed width, as individual parts</th>
<th>Hose Ø z [mm]</th>
<th>Extender crossbar shape</th>
<th>① Fitted to side link</th>
<th>② Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15RHD115</td>
<td>115</td>
<td>① round</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.17RD115</td>
<td>115</td>
<td>① round</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.25D150</td>
<td>150</td>
<td>① square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.30D200</td>
<td>200</td>
<td>① square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.35D250</td>
<td>220</td>
<td>① square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.40D300</td>
<td>270</td>
<td>① square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.20HD150</td>
<td>150</td>
<td>① square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.25HD200</td>
<td>200</td>
<td>① square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.30HD250</td>
<td>220</td>
<td>① square</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Part No. extender crossbar with fixed width

Order example: ① combined with openable crossbars
To receive extender crossbar RHD115 pre-fitted along the outer radius of the-chain®, please add index E: E4.112.10/10RD115/10.R0
To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index Z: E4.112.10/10RD115/10.R0

Order example: ② fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the-chain®, please add index E: E4.112.17RD115/15.R0
To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index Z: E4.112.17RD115/15.R0

E4.1 | Series E4.112-R4.112 | Further accessories

Extension links

<table>
<thead>
<tr>
<th>Extention links</th>
<th>For extremely wide e-chains® up to 3.0m</th>
</tr>
</thead>
<tbody>
<tr>
<td>● Virtually unlimited side-by-side extension</td>
<td></td>
</tr>
<tr>
<td>● For extremely wide e-chains® up to 3,000mm</td>
<td></td>
</tr>
<tr>
<td>● Unsupported length FL_max. can be increased when heavy fill weights are required</td>
<td></td>
</tr>
<tr>
<td>● e-chains® and e-tubes can be combined</td>
<td></td>
</tr>
<tr>
<td>● Attached with KMA or steel mounting brackets</td>
<td></td>
</tr>
</tbody>
</table>

Extension links | For extremely wide e-chains® up to 3.0m

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension link e-chain®</td>
<td>Extension link e-tube</td>
<td>Extension link as an individual part</td>
</tr>
<tr>
<td>E4.112.R1/10/10RD115.R0</td>
<td>R4.112.01/10/03.2.R0</td>
<td>6002.R.</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi1/Bi2/Bi3/etc. and the radius (R). Example: E4.112.10/10RD115/10.0200.0

Swarf up to +850°C

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material
- More information ▶ www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
- More information ▶ www.igus.co.uk/E4savetime

Roller crossbars - increase the service life of cables and hoses

- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
- More information ▶ www.igus.co.uk/roller-crossbar
E4.1 | Series E4.162 | Product range
heavy fill weights, new large inner height

E4.162

... E4.162

---

**e-chains® | Series E4.162 | Crossbars every link**
(crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.162 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.162 .20 .R.0</td>
<td>200</td>
<td>256</td>
<td>10.45</td>
</tr>
<tr>
<td>E4.162 .25 .R.0</td>
<td>250</td>
<td>306</td>
<td>10.74</td>
</tr>
<tr>
<td>E4.162 .30 .R.0</td>
<td>300</td>
<td>356</td>
<td>10.99</td>
</tr>
<tr>
<td>E4.162 .32 .R.0</td>
<td>325</td>
<td>381</td>
<td>11.02</td>
</tr>
<tr>
<td>E4.162 .35 .R.0</td>
<td>350</td>
<td>406</td>
<td>11.21</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E4.162 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.162 .40 .R.0</td>
<td>400</td>
<td>456</td>
<td>11.51</td>
</tr>
<tr>
<td>E4.162 .45 .R.0</td>
<td>450</td>
<td>506</td>
<td>11.65</td>
</tr>
<tr>
<td>E4.162 .50 .R.0</td>
<td>500</td>
<td>556</td>
<td>11.83</td>
</tr>
<tr>
<td>E4.162 .55 .R.0</td>
<td>550</td>
<td>606</td>
<td>12.11</td>
</tr>
<tr>
<td>E4.162 .60 .R.0</td>
<td>600</td>
<td>656</td>
<td>12.45</td>
</tr>
</tbody>
</table>

**Available bend radii**

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>550</th>
<th>600</th>
<th>750</th>
<th>1,000</th>
</tr>
</thead>
</table>
| Complete Part No. with required radius (R), Example: E4.162.40.350.0 = crossbars every link

---

**Reduce assembly time - E4 e-chain® opener**

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ➤ www.igus.co.uk/E4savetime

---

**E4.1 | Series E4.162 | Installation dimensions**

Unsupported applications  | Short travels

---

**Chart values are provisional**

---

**Gliding applications | For long travels from 14m to max. 450m**

**LK = S/2 + K2**

Moving end

Guide trough with glide bar

Fixed end

Guide trough without glide bar

Total length of guide trough

---

**Notes:** We recommend the project planning of such a system to be carried out by igus®. In case of travels between 12 and 14m we recommend an e-chain® with a longer unsupported length.

**Values such as unsupported applications** **Values upon request**
**E4.162 | Series E4.162 | Accessories**

**Steel pivoting**
**Steel locking**

**Steel pivoting | Recommended for unsupported and gliding applications**
**Steel locking | Recommended for vertical hanging and vertical standing applications**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.16210.34.VS.E</td>
<td>Full set (both ends), ending with outer side link, screwed - standard</td>
</tr>
<tr>
<td>E4.16210.34.VS.E</td>
<td>Full set (both ends) - beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - standard</td>
</tr>
</tbody>
</table>

Stainless steel version available. Please add index [E] (Material: stainless steel 1.4301)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.16210.12.VS.E</td>
<td>Full set (both ends), ending with outer side link, screwed - standard</td>
</tr>
<tr>
<td>E4.16210.12.VS.E</td>
<td>Full set (both ends) - beginning with outer side link (moving end), ending with inner side link (fixed end), screwed - standard</td>
</tr>
</tbody>
</table>

Stainless steel version available. Please add index [E] (Material: stainless steel 1.4301)

---

**Strain relief**

- e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock.
- The complete chainfix range with ordering options ► From page 1300

---

**E4.162 | Series E4.162 | Accessories**

**Interior separation | Increase cable service life**

**Shelves**

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>X [mm] unassembled</th>
<th>X [mm] assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>1120.050</td>
<td>1121.050</td>
</tr>
<tr>
<td>065</td>
<td>1120.065</td>
<td>1121.065</td>
</tr>
<tr>
<td>075</td>
<td>1120.075</td>
<td>1121.075</td>
</tr>
<tr>
<td>100</td>
<td>1120.100</td>
<td>1121.100</td>
</tr>
<tr>
<td>125</td>
<td>1120.125</td>
<td>1121.125</td>
</tr>
</tbody>
</table>

**Note:** Depending on the chain length, the e-chain® may end with ◆ either an outer or an □ inner side link. For the best appearance, make sure the e-chain® ends with ◆ outer side links whenever possible. (with odd number of links)

---

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

**Horizontal separation**

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

More information ► www.igus.co.uk/E4.112 ► www.igus.co.uk/R4.112

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E4.1
e-chains® | Series 800 | Crossbars every link
(crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>800 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains® 800.20. R.0</td>
<td>200</td>
<td>260</td>
<td>≈15.09</td>
</tr>
<tr>
<td>800.25. R.0</td>
<td>250</td>
<td>310</td>
<td>≈15.50</td>
</tr>
<tr>
<td>800.30. R.0</td>
<td>300</td>
<td>360</td>
<td>≈15.89</td>
</tr>
<tr>
<td>800.32. R.0</td>
<td>325</td>
<td>385</td>
<td>≈16.05</td>
</tr>
<tr>
<td>800.35. R.0</td>
<td>350</td>
<td>410</td>
<td>≈16.22</td>
</tr>
</tbody>
</table>

Available bend radii
R [mm] | 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1,000 |
Complete Part No. with required radius (R). Example: 800.40.400.0 = crossbars every link

Reduce assembly time - E4 e-chain® opener
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information | www.igus.co.uk/E4savetime
### Steel pivoting | For unsupported, gliding, vertical hanging and vertical standing applications

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8000</td>
<td>Steel pivoting</td>
</tr>
<tr>
<td>8000.2</td>
<td>Full set (both ends), ending with outer side link, screwed - standard</td>
</tr>
<tr>
<td>8000.10</td>
<td>Full set (both ends) - beginning with outer side link (moving end) - ending with inner side link (fixed end), screwed only on the moving end - standard</td>
</tr>
</tbody>
</table>

Note: Depending on the chain length, the e-chain® may end with either an outer or an inner side link. For the best appearance, make sure the e-chain® ends with outer side links whenever possible. (with odd number of links)

### Strain relief
- e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

---

### Modular shelving system | Series 800

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Design</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Width (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>unassembled</td>
<td>assembled</td>
<td>Snap in tab</td>
<td>Separator</td>
<td>Crossbar</td>
<td></td>
</tr>
<tr>
<td>8001H1</td>
<td>8011H1</td>
<td>one side</td>
<td>8001</td>
<td>450.XX.A</td>
<td>50-600</td>
</tr>
<tr>
<td>8001H2</td>
<td>8011H2</td>
<td>both sides</td>
<td>8001</td>
<td>450.XX.A</td>
<td>50-600</td>
</tr>
</tbody>
</table>

Secure separation even for large cables. Easy assembly.
Robust, even for large cable diameters. Modular. Widths from 50 to 600mm.

---

### Interior separation

**Note:** Please be aware of the minimum lateral gap to the side links! e-chain® 6mm links standard separators are fitted every 2nd e-chain® link!

**Slotted separator**
- For a vertical subdivision. The slot allows basic vertical/horizontal shelving arrangements.

**Spacer**
- Separators can be fixed in position using spacers. The available interior height is reduced by 2mm per spacer (4mm when spacers are fitted on both sides). To avoid this, the parts can also be installed on the outside of the opening crossbar.

---

### Steel mounting brackets | Pivoting

- **Fixed end**
- **Moving end**

---

More information ▶ [www.igus.co.uk/800](http://www.igus.co.uk/800)
**E4.1 | Series 840 | Product range**

For tough applications, very large inner height

---

**e-chains® | Series 840 | Crossbars every link** (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>840</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>840</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td></td>
<td></td>
<td></td>
<td>e-chains®</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>840.13.R0</td>
<td>100</td>
<td>160</td>
<td>13.84</td>
<td>840.36.R0</td>
<td>325</td>
<td>385</td>
<td>15.09</td>
</tr>
<tr>
<td>840.15.R0</td>
<td>113</td>
<td>173</td>
<td>13.87</td>
<td>840.37.R0</td>
<td>338</td>
<td>398</td>
<td>15.11</td>
</tr>
<tr>
<td>840.16.R0</td>
<td>125</td>
<td>185</td>
<td>13.95</td>
<td>840.38.R0</td>
<td>350</td>
<td>410</td>
<td>15.15</td>
</tr>
<tr>
<td>840.17.R0</td>
<td>138</td>
<td>198</td>
<td>14.04</td>
<td>840.40.R0</td>
<td>363</td>
<td>423</td>
<td>15.34</td>
</tr>
<tr>
<td>840.18.R0</td>
<td>150</td>
<td>210</td>
<td>14.13</td>
<td>840.41.R0</td>
<td>375</td>
<td>435</td>
<td>15.39</td>
</tr>
<tr>
<td>840.20.R0</td>
<td>163</td>
<td>223</td>
<td>14.17</td>
<td>840.42.R0</td>
<td>388</td>
<td>448</td>
<td>15.50</td>
</tr>
<tr>
<td>840.21.R0</td>
<td>175</td>
<td>235</td>
<td>14.22</td>
<td>840.43.R0</td>
<td>400</td>
<td>460</td>
<td>15.57</td>
</tr>
<tr>
<td>840.22.R0</td>
<td>188</td>
<td>248</td>
<td>14.27</td>
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<td>313</td>
<td>373</td>
<td>15.06</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Available bend radii

\[ R \text{ [mm]} = 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1,000 \]

Complete Part No. with required radius (R). Example: 840.40.400.0 = crossbars every link

---

**Reduce assembly time - E4 e-chain® opener**

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information | www.igus.co.uk/E4savetime

---

**E4.1 | Series 840 | Installation dimensions**

Unsupported applications | Short travels

**Gliding applications | For long travels from 15m to max. 450m**

**Notes:**

- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels between 12 and 15m we recommend an e-chain® with a longer unsupported length.

**R** | 325 | 350 | 400 | 450 | 500 | 600 | 750 | 1,000

**H₂** | 906 | 1,036 | 1,136 | 1,236 | 1,436 | 1,736 | 2,236 |

**D** | 818 | 843 | 893 | 943 | 993 | 1,093 | 1,243 | 1,493 |

**K** | 2,000 | 2,000 | 2,500 | 3,000 | 3,250 | 4,000 | * | * |

**ACL** | 250 | 300 | 550 | 750 | 1,050 | 1,400 | * | * |

*Values upon request

---

**3D CAD, configurators, service life calculation and more | www.igus.co.uk/E4.1**
Steel pivoting | For unsupported, gliding, vertical hanging and vertical standing applications

**Part No.** full set | Description
---|---
**steel pivoting** | mounting bracket

- 8000.12.VS.E: Full set (both ends), ending with outer side link, screwed - standard
- 8000.12.VS.E: Full set (both ends) - beginning with outer side link (moving end) - ending with inner side link (fixed end), screwed only on the moving end - standard

Stainless steel version available. Please add index E (Material: stainless steel 1.4301)

**Note:** Depending on the chain length, the e-chain® may end with either an outer or an inner side link. For the best appearance, make sure the e-chain® ends with outer side links whenever possible. (with odd number of links)

---

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
E4.350 now available as ESD-version

- Safe electrostatic discharge through material and design
- Permanently constant discharge due to a positive connection of the e-chain® links to one another

More information: www.igus.co.uk/ESD

igus® Series E4.350 - inner height: 350mm

- Please ask for our advice when using this series
- Please design with support from the igus® project team
- Please consult igus® Phone (01604) 677240

The world's largest polymer e-chain®: lighter than comparable steel chains, it effortlessly carries more than 100kg of fill weight per metre on a 138m travel

More information: www.igus.co.uk/E4.350
Steel mounting brackets

Mounting brackets for series E4.350 according to your requirements. Steel or stainless steel available. (Material: stainless steel 1.4301)

Robust steel mounting bracket for secure fixation and connection.

Separator for vertical subdivision

For a vertical separation with 450.X

Horizontal shelves

For horizontal separation with clips separators for vertical subdivision. Horizontal shelves of various widths can be fitted at 3 different heights.

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>450.050</td>
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<tr>
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</table>

More information ► www.igus.co.uk/E4.350

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E4.1
E4/light

Large, light and strong

Advantages of the E4/light system:
- Large inner heights combined with low weight
- E4/light e-chains® offer optimum price and performance solutions for many applications
- Especially suitable for short travel distances, hanging and standing designs

When to use another e-chain® series:
- When the e-chain® needs to be extremely quiet with very low vibration
  ➤ E6.1, page 750
- When the e-chain® is to be used in cleanrooms
  ➤ E6.1, page 750
- If large unsupported lengths are required for side-mounted applications
  ➤ E4.1, page 566
- When longer unsupported lengths and longer travels are required
  ➤ E4.1, page 566
- When the current standard up to 64mm is preferred
  ➤ E4.1L, page 524
E4/light | Introduction | Advantages

Large, light and strong - E4/light system

Weight reduction, a larger interior space and a reduced price. The characteristics of the E4/light system: thinner side links (for all types) and a thinner crossbar (for some types: 14240, 14340). E4/light e-chains® represent solutions with an optimum price/performance ratio for many applications. Especially for short travels, hanging and small standing applications. E4/light types are often first choice.

Typical industries and applications
- Machine tools
- Material handling equipment
- Stone-cutting machines
- Woodworking machines
- Vehicles
- Construction machinery
- Limited application for long travel distances
- General mechanical engineering etc.

Attachments from any side: with KMA mounting brackets

Quiet operation: optional noise dampers

Swarf protection: openable lids

Long service life: lateral gliding surfaces

High strength: due to undercut design

25% faster: easy assembly with QuickLock crossbars

Electrically conductive ESD e-chains® - several series available from stock

Side-mounted - unsupported

High torsional rigidity

Available from stock. Ready to ship in 24 - 48 hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
E4/light | Features | Accessories

Flexible extender crossbar range - e-chain® extender for enlarging the interior, large range of widths possible

Strain relief e.g. clamps, tie-wrap plates, nuggets, etc. ► From page 1300

The extension link design allows virtually unlimited side-by-side extension

Aluminium®“SuperTrough” - the standard igus® guide trough ► From page 1208

KMA mounting brackets with attachment options from any side

Support tray kit - for support of the lower run ► From page 1264

E4/light undercut design, for high stability and strength

E4/light - high strength even for side-mounted applications

Crossbars operable on both sides

E4/light | Technical data | Overview

Technical data

- **Speed gliding / acceleration gliding**
  - ≤ 5 [m/s] / ≤ 50 [m/s²]

- **Speed FL₉ / acceleration FL₉**
  - ≤ 20 [m/s] / ≤ 200 [m/s²]

- **Speed FL₈ / acceleration FL₈**
  - ≤ 3 [m/s] / ≤ 6 [m/s²]

- **Material - permitted temperature °C, igumid G**
  - -40°C / +120°C

- **Flammability class, igumid G**
  - VDE 0304 IIC UL94-HB

  FL₉ = unsupported with straight upper run

  FL₈ = unsupported with permitted sag

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
<th>Rotary</th>
<th>Zig-zag</th>
<th>Unsupported length lower run</th>
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</thead>
<tbody>
<tr>
<td>14040/14140/R18840</td>
<td>≤ 8.0m</td>
<td>≤ 150m</td>
<td>≤ 80m</td>
<td>≤ 6.0m</td>
<td>≤ 2.0m</td>
<td>with rework upon request upon request</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14240/14340</td>
<td>≤ 8.0m</td>
<td>≤ 150m</td>
<td>≤ 80m</td>
<td>≤ 6.0m</td>
<td>≤ 2.0m</td>
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<td></td>
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<td>≤ 250m</td>
<td>≤ 90m</td>
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<td>≤ 250m</td>
<td>≤ 100m</td>
<td>≤ 6.0m</td>
<td>≤ 2.0m</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15250/15350</td>
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<td>≤ 100m</td>
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<td>1640/R1608</td>
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<td>with rework upon request upon request</td>
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</table>

More information ► www.igus.co.uk/E4light

3D CAD, service life calculation, configurators and more ► www.igus.co.uk/E4light
## E4/light | Options and order keys

### Options with order keys | Examples based on series 14040/14140/18840

#### Standard
Quick opening crossbar - reduce assembly time by up to 25%

<table>
<thead>
<tr>
<th>Part No.</th>
<th>QuickLock crossbar along the inner radius</th>
<th>QuickLock crossbar along the outer radius</th>
<th>QuickLock crossbar on both sides</th>
</tr>
</thead>
<tbody>
<tr>
<td>14040.30.R.0</td>
<td>14040.30RQ.R.0</td>
<td>14040.30QR.R.0</td>
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<td>14040.30.R.0</td>
<td>14040.30RQ.R.0</td>
<td>14040.30QR.R.0</td>
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</tbody>
</table>

#### Order example | Examples based on series 14040

**Order example for complete e-chain® (3.0m), colour black, with mounting brackets and interior separation:**

- e-chain® (3.0m) Please indicate e-chain® length or number of links: 3.0m or 33 links
- + Mounting brackets 1 set (with integrated C-profiles)
- Interior separation with 2 separators assembled every 2nd link

**Order text:**

- 3 m 14040.30.300.0 + 14140.30.12.C + 2 x 56.1.1

### Order key and colour examples | Examples based on series 14040/14140/18840

**Order key**

- e-chain® with crossbars every link
- e-tube fully enclosed

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>14040.30.300.0</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>14040.30.300.0</td>
</tr>
<tr>
<td>White</td>
<td>14040.30.300.0</td>
</tr>
</tbody>
</table>

**Colour index**

- Standard black:
- Light grey:
- Special black:
- Special grey:
- Special yellow:

**Above special colours available from stock.**
Series 14040
Series 14140
Series R18840

Part No. | Bi | Ba | 14040 | 14140 | 18840
------- | --- | --- | ----- | ----- | -----
14040. | 05. | R0 | 50 | 76 | 2.47 | 2.48
14040. | 06. | R0 | 65 | 91 | 2.66 | 2.51
14040. | 07. | R0 | 75 | 101 | 2.75 | 2.32
14040. | 08. | R0 | 87 | 113 | 2.84 | 2.44
14040. | 10. | R0 | 100 | 128 | 3.26 | 3.49
14040. | 11. | R0 | 112 | 139 | 3.58 | 3.47
14040. | 12. | R0 | 125 | 151 | 3.91 | 3.85
14040. | 13. | R0 | 137 | 164 | 4.32 | 3.77
14040. | 15. | R0 | 150 | 176 | 4.73 | 4.28
14040. | 16. | R0 | 162 | 189 | 5.14 | 4.86
14040. | 17. | R0 | 175 | 201 | 5.54 | 5.44
14040. | 18. | R0 | 182 | 209 | 5.95 | 5.94
14040. | 19. | R0 | 197 | 214 | 6.35 | 5.97
14040. | 20. | R0 | 200 | 226 | 6.76 | 6.98
14040. | 21. | R0 | 207 | 234 | 7.17 | 7.01
14040. | 22. | R0 | 225 | 251 | 7.58 | 7.27
14040. | 23. | R0 | 237 | 264 | 8.00 | 7.14
14040. | 25. | R0 | 250 | 276 | 8.42 | 8.18
14040. | 26. | R0 | 262 | 289 | 8.84 | 8.32
14040. | 27. | R0 | 275 | 301 | 9.27 | 8.85

Part No. | Bi | Ba | 14040 | 14140 | 18840
------- | --- | --- | ----- | ----- | -----
14040. | 28. | R0 | 287 | 314 | 4.29 | 3.29
14040. | 30. | R0 | 300 | 326 | 4.51 | 4.30
14040. | 31. | R0 | 312 | 339 | 4.67 | 4.32
14040. | 32. | R0 | 325 | 351 | 4.80 | 4.34
14040. | 33. | R0 | 337 | 364 | 4.77 | 4.33
14040. | 35. | R0 | 350 | 376 | 4.90 | 4.31
1400. | 36. | R0 | 362 | 389 | 4.84 | 4.31
1400. | 37. | R0 | 375 | 401 | 4.85 | 4.32
1400. | 38. | R0 | 387 | 414 | 5.04 | 4.36
1400. | 40. | R0 | 400 | 426 | 5.24 | 4.37
1400. | 41. | R0 | 412 | 439 | 5.39 | 4.34
1400. | 42. | R0 | 425 | 451 | 5.54 | 4.32
1400. | 43. | R0 | 437 | 464 | 5.61 | 4.35
1400. | 45. | R0 | 450 | 476 | 5.68 | 4.38
1400. | 46. | R0 | 462 | 489 | 5.79 | 4.39
1400. | 47. | R0 | 475 | 510 | 5.83 | 4.36
1400. | 48. | R0 | 487 | 514 | 5.86 | 4.38
1400. | 50. | R0 | 500 | 526 | 5.98 | 4.33
1400. | 51. | R0 | 512 | 539 | 5.84 | 4.44
1400. | 52. | R0 | 525 | 551 | 6.03 | 4.48
1400. | 53. | R0 | 537 | 564 | 6.18 | 4.42
1400. | 55. | R0 | 550 | 576 | 6.67 | 4.49
1400. | 60. | R0 | 600 | 626 | 6.98 | 4.58

Note: For recommended design, long inner height

Available bend radii


Complete Part No. with required radius (R). Example:

- 14040.30.300.0 = crossbars every link / 14140.30.300.0 = crossbars every 2nd link / 18840.30.300.0 = fully enclosed

Gilding applications | For long travels from 12m to max. 150m

- Lk = S/2 + K2
- Moving end
- Guide trough with glide bar
- Total length of guide trough

Notes: We recommend the project planning of such a system to be carried out by igus.
In case of travels between 8 and 12m we recommend an e-chain® with a longer unsupported length.

The required clearance height: H = R + 60 mm (with 2.0kg/m fill weight)

Radius not available for e-tubes
E4/light | Series 14040-14140-R18840 | Accessories

Interior separation | Increase cable service life

Preceding generation of interior separation with other options | www.igus.co.uk/14040

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain*: 16mm

As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Separator for igus® QuickLock crossbar 450.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Separators

- Standard separator, wide base
  - unassembled: 56.1
  - assembled: 56.1.1

- Separator for QuickLock crossbar
  - unassembled: 56.2
  - assembled: 56.2.1

- Separator, narrow
  - unassembled: 56.3
  - assembled: 56.3.1

- Separator, asymmetrical
  - unassembled: 56.4
  - assembled: 56.4.1

- Notch separator for notched crossbar
  - unassembled: 56.5
  - assembled: 56.5.1

- Shelf, lockable
  - unassembled: 520.X
  - assembled: 521.X

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>X mm</td>
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</tr>
</tbody>
</table>

More information | www.igus.co.uk/14040 | www.igus.co.uk/14140 | www.igus.co.uk/R18840

Lean separators - New
New design allows extremely fast filling of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Split separators
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time
("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

3D CAD, service life calculation, configurators and more | www.igus.co.uk/E4light
E4/light | Series 14040-14140-R18840 | Accessories

More interior separation options

**Round or square extender crossbar**
- combined with openable crossbars
- attached directly on the side link (as viewed from the fixed end)

Extender crossbar with fixed width

**Notch locking separator for increased holding force**
Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

**Partial height separator**
In conjunction with an additional opening crossbar, part no. 450.3i.S, it provides the option to separate the upper and lower halves of the e-chain independently of each other.

**Rollclip**
Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain and hose.

**Roller separator**
The roller separator is used in a similar way to the rollclip. It is used like a separator. For rigid cables and hoses.

*Only for e-chains

**Part No. extender crossbar with fixed width, as individual parts**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Hose Ø</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15RHD115</td>
<td>115</td>
<td>round</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.17RD115</td>
<td>115</td>
<td>round</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.25D150</td>
<td>150</td>
<td>square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.30D200</td>
<td>180</td>
<td>square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.35D250</td>
<td>195</td>
<td>square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.40D300</td>
<td>245</td>
<td>square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.20HD150</td>
<td>150</td>
<td>square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.25HD200</td>
<td>180</td>
<td>square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.30HD250</td>
<td>195</td>
<td>square</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Order example: 1 combined with openable crossbars
To receive extender crossbar RHD115 pre-fitted along the outer radius of the e-chain®, please add index E: 14040.10/15RHD115/R.0
To receive extender crossbar RHD115 pre-fitted along the inner radius of the e-chain®, please add index Z: 14040.10/15RHD2115/R.0

Order example: 2 fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the e-chain®, please add index E: 14040.17RD115/R.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the e-chain®, please add index Z: 14040.17RD2115/R.0

---

E4/light | Series 14040-14140-R18840 | Further accessories

Extender crossbar with fixed width

**Safe guiding for large hoses**
- Suitable for hoses with a maximum outer diameter of 245 mm.
- Option 1 extender crossbars with fixed width to combine with openable crossbars
- Option 2 extender crossbars with fixed width attached directly on the side link
- Optionally operable along the inner “Z” or the outer radius “E”
- Gliding with crossbars assembled along the outer radius and a special guide trough

---

**Notch locking separator**
Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

**Partial height separator**
In conjunction with an additional opening crossbar, part no. 450.3i.S, it provides the option to separate the upper and lower halves of the e-chain independently of each other.

**Rollclip**
Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain and hose.

**Roller separator**
The roller separator is used in a similar way to the rollclip. It is used like a separator. For rigid cables and hoses.

*Only for e-chains

---

Part No.

- Notch locking separator: 450.15
- Partial height separator*: 450.3i.S
- Rollclip for e-chains®: 450.20
- Roller separator*: 450.25

---

**Suitable for hoses with a maximum outer diameter of 245 mm.**

**Option 1 extender crossbars with fixed width to combine with openable crossbars**

**Option 2 extender crossbars with fixed width attached directly on the side link**

**Optionally operable along the inner “Z” or the outer radius “E”**

**Gliding with crossbars assembled along the outer radius and a special guide trough**

---

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!
Extension links | For extremely wide e-chains® up to 3.0m

- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3000mm
- Unsupported length FLmax can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>14040.B1/B2/B3.R.0</td>
<td>Extension link e-chain®</td>
<td>Extension link as an individual part</td>
</tr>
</tbody>
</table>

More information ➤ www.igus.co.uk/E4light
Stable due to undercut design, large inner height

**e-chains®** | Series 14240 | Crossbars every link (crossbars removable along the inner and outer radius)
--- | --- | ---
**e-chains®** | Series 14340 | Crossbars every 2nd link (crossbars removable along the inner and outer radius)

### Part No. Bi Ba 14240 14340 Bi Ba 14240 14340
14240, 14340, 05, R0 50 76 +2.37 +2.32 14240, 14340, 05, R0 212 239 +0.96 +0.80
14240, 14340, 06, R0 68 94 +2.40 +2.33 14240, 14340, 23, R0 225 251 +3.01 +2.83
14240, 14340, 07, R0 75 101 +2.42 +2.34 14240, 14340, 23, R0 237 264 +3.04 +2.85
14240, 14340, 08, R0 87 114 +2.47 +2.36 14240, 14340, 25, R0 250 276 +3.10 +2.88
14240, 14340, 09, R0 97 123 +2.51 +2.38 14240, 14340, 26, R0 262 289 +3.11 +2.89
14240, 14340, 10, R0 100 126 +2.52 +2.39 14240, 14340, 28, R0 275 301 +3.19 +2.72
14240, 14340, 11, R0 108 134 +2.56 +2.40 14240, 14340, 29, R0 287 314 +3.20 +2.73
14240, 14340, 12, R0 112 139 +2.59 +2.41 14240, 14340, 30, R0 300 326 +3.30 +2.78
14240, 14340, 14, R0 125 151 +2.60 +2.44 14240, 14340, 31, R0 321 339 +3.31 +2.79
14240, 14340, 15, R0 137 164 +2.66 +2.46 14240, 14340, 32, R0 325 351 +3.37 +2.81
14240, 14340, 16, R0 150 176 +2.72 +2.49 14240, 14340, 33, R0 337 364 +3.40 +2.83
14240, 14340, 17, R0 162 189 +2.73 +2.49 14240, 14340, 35, R0 350 376 +3.56 +2.91
14240, 14340, 18, R0 168 194 +2.79 +2.52 14240, 14340, 36, R0 362 389 +3.61 +2.93
14240, 14340, 19, R0 175 201 +2.82 +2.53 14240, 14340, 37, R0 375 401 +3.64 +2.94
14240, 14340, 20, R0 187 214 +2.84 +2.55 14240, 14340, 38, R0 387 414 +3.69 +2.97
14240, 14340, 21, R0 200 226 +2.89 +2.58 14240, 14340, 40, R0 400 426 +3.73 +2.99

1) Available as ESD version from stock

Available bend radii

**R [mm]** | 135 | 150 | 175 | 200 | 250 | 300 | 400 | 500
--- | --- | --- | --- | --- | --- | --- | --- | ---
**Bi [mm]** | 14240, 14340, 120, 300, 0 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200
**Ba [mm]** | 14240, 14340, 120, 300, 0 | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200

Complete Part No. with required radius (R). Example:

14240.20,300,0 = crossbars every link / 14340.20,300,0 = crossbars every 2nd link

---

**ESD - many sizes from stock**

- Standardized product made from igus® ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information: [www.igus.co.uk/esd](http://www.igus.co.uk/esd)
KMA locking

Recommended for unsupported and gliding applications

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set</th>
<th>Part No. full set Bi</th>
<th>Part No. full set</th>
<th>Part No. full set Bi</th>
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</thead>
<tbody>
<tr>
<td>05.</td>
<td>143400.06...12.C</td>
<td>142400.05...12.C</td>
<td>06.</td>
<td>143400.06...12.C</td>
</tr>
<tr>
<td>06.</td>
<td>143400.06...12.C</td>
<td>142400.06...12.C</td>
<td>07.</td>
<td>143400.07...12.C</td>
</tr>
<tr>
<td>07.</td>
<td>143400.08...12.C</td>
<td>142400.08...12.C</td>
<td>08.</td>
<td>143400.08...12.C</td>
</tr>
<tr>
<td>09.</td>
<td>143400.09...12.C</td>
<td>142400.09...12.C</td>
<td>10.</td>
<td>143400.10...12.C</td>
</tr>
<tr>
<td>10.</td>
<td>143400.11...12.C</td>
<td>142400.11...12.C</td>
<td>11.</td>
<td>143400.11...12.C</td>
</tr>
<tr>
<td>11.</td>
<td>143400.12...12.C</td>
<td>142400.12...12.C</td>
<td>12.</td>
<td>143400.12...12.C</td>
</tr>
<tr>
<td>13.</td>
<td>143400.13...12.C</td>
<td>142400.13...12.C</td>
<td>14.</td>
<td>143400.15...12.C</td>
</tr>
<tr>
<td>14.</td>
<td>143400.16...12.C</td>
<td>142400.16...12.C</td>
<td>15.</td>
<td>143400.17...12.C</td>
</tr>
<tr>
<td>15.</td>
<td>143400.18...12.C</td>
<td>142400.18...12.C</td>
<td>16.</td>
<td>143400.18...12.C</td>
</tr>
<tr>
<td>17.</td>
<td>143400.20...12.C</td>
<td>142400.20...12.C</td>
<td>18.</td>
<td>143400.20...12.C</td>
</tr>
</tbody>
</table>

KMA pivoting

(KMA = polymer metal mounting bracket) For the C-profile option please add index C

Order example: 143400.20...12.C.A2

Options for KMA mounting brackets. To receive KMA pre-fitted with brackets please add index A. Please add index A2 for the standard version with C-profile. In the inner radius at the moving end and in the outer radius at the fixed end.

Strain relief e.g. clamps, tie-mount plates, nuts and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Interior separation | Increase cable service life

Previous generation of interior separation with other options ► www.igus.co.uk/14240

Standard - for any application

Separator with a wide base for maximum holding force in the e-chains®.

For even faster installation

Separator for igus® QuickLock crossbar 385-X.O. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Locks securely in preset increments

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Accessories

E4/light | e-chains® 14240-14340 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting | Locking

Website:

www.igus.co.uk/14240

www.igus.co.uk/14340

More information ► www.igus.co.uk/14240 ► www.igus.co.uk/14340

3D CAD, service life calculation, configurators and more ► www.igus.co.uk/E4light
**E4/light | Series 14240-14340 | Further accessories**

**e-chain® with openable extender crossbars**

New

---

**Extender crossbars with flexible width | Safe guiding for large hoses**

- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

---

### Versions with extender crossbars

<table>
<thead>
<tr>
<th>e-chain® with extender crossbar</th>
<th>Hose Ø [mm]</th>
<th>Part No. crossbars every link</th>
<th>Part No. crossbars every 2nd link</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Extender crossbar and standard crossbar alternating along the inner and outer radius 1)</td>
<td>34</td>
<td>14240.XXXHB50/R,0</td>
<td>–</td>
</tr>
<tr>
<td>2) Extender crossbar on both sides along the inner and outer radius 2)</td>
<td>140</td>
<td>14240.XXXB50/R,0</td>
<td>14340.XXXB50/R,0</td>
</tr>
<tr>
<td>3) Extender crossbar along the outer radius 3)</td>
<td>100</td>
<td>14240.XXXBZ50/R,0</td>
<td>14340.XXXBZ50/R,0</td>
</tr>
<tr>
<td>4) Extender crossbar along the inner radius 4)</td>
<td>100</td>
<td>14240.XXXHBZ50/R,0</td>
<td>–</td>
</tr>
<tr>
<td>5) Extender crossbar and standard crossbar alternating along the outer radius 5)</td>
<td>34</td>
<td>14240.XXXHBE55/R,0</td>
<td>–</td>
</tr>
<tr>
<td>6) Extender crossbar and standard crossbar alternating along inner radius 6)</td>
<td>34</td>
<td>14240.XXXHBZ50/R,0</td>
<td>–</td>
</tr>
</tbody>
</table>

1) Minimal bend radius: R 135
2) Minimal bend radius: R 150
3) Minimal bend radius: R 195

---

The E4/light can be fitted with openable extender crossbars, which increase the size of the interior of the e-chain®. Crossbars can be fitted in various ways: from one or both sides, alternating with standard crossbars and or any combination.

---

**E4/light | Series 14240-14340 | Further accessories**

**Extender crossbar with fixed width**

---

**Extender crossbars with fixed width | Safe guiding for large hoses**

- Suitable for hoses with a maximum outer diameter of 115mm.
- Option 1) extender crossbars with fixed width to combine with openable crossbars
- Option 2) extender crossbars with fixed width attached directly on the side link
- Optionally openable along the inner “Z” or the outer radius “E”
- Gliding with crossbars assembled along the outer radius and a special guide trough

---

**Order example:** 1) combined with openable crossbars

To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain®, please add index E: 14240.10/15RHD115/10/R,0

To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain®, please add index Z: 14240.10/15RHD115/10/R,0

Order example: 1) fitted to side link

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 14240.18RD115/10/R,0

To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 14240.18RDZ115/10/R,0

---

More information: [www.igus.co.uk/14240](http://www.igus.co.uk/14240) | [www.igus.co.uk/14340](http://www.igus.co.uk/14340)

3D CAD, service life calculation, configurators and more: [www.igus.co.uk/E4light](http://www.igus.co.uk/E4light)
Hinged crossbars | Swivel clip | Openable crossbar remains attached to the e-chain®

- When opening crossbars must remain attached to the e-chain®
- Hinged crossbars consist of a swivel clip and a shortened crossbar
- Openable crossbar (shortened): Bi = 37.5mm (smallest inner width Bi = 87.5)
- Please consult igus® for assistance with this product

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No. openable</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chain® with hinged crossbar</td>
<td>14240.Bi.Z.R.0</td>
<td>Bi-37.5 mm</td>
</tr>
<tr>
<td>385.02</td>
<td>385.03</td>
<td>Bi-37.5 mm</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi, the index Z for the required option and the radius (R). Example: 14240.137.1.200.0

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ► From page 1264

Hot swarf up to +850°C
- e-tubes to withstand 850°C hot swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material
More information ► www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
More information ► www.igus.co.uk/E4savetime

Roller crossbars - increase the service life of cables and hoses
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
More information ► www.igus.co.uk/roller-crossbar

E4/light e-tubes protect cables and hoses against dirt and swarf
### e-chains® | Series 14550 e-chains® | Series 14650 e-tubes | Part No. R19050

#### Crossbars every link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>14550</th>
<th>14550</th>
<th>14550</th>
</tr>
</thead>
<tbody>
<tr>
<td>14550.</td>
<td>65.</td>
<td>66.</td>
<td>14650</td>
<td>14650</td>
<td>14650</td>
</tr>
<tr>
<td>14550.</td>
<td>75.</td>
<td>76.</td>
<td>14650</td>
<td>14650</td>
<td>14650</td>
</tr>
</tbody>
</table>

#### Crossbars every 2nd link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>14550</th>
<th>14550</th>
<th>14550</th>
</tr>
</thead>
<tbody>
<tr>
<td>14550.</td>
<td>65.</td>
<td>66.</td>
<td>14650</td>
<td>14650</td>
<td>14650</td>
</tr>
<tr>
<td>14550.</td>
<td>75.</td>
<td>76.</td>
<td>14650</td>
<td>14650</td>
<td>14650</td>
</tr>
</tbody>
</table>

#### Fully enclosed (e-chains operable along the outer radius, from one side)

<table>
<thead>
<tr>
<th>Bi</th>
<th>14550</th>
<th>14550</th>
<th>14550</th>
</tr>
</thead>
<tbody>
<tr>
<td>14550.</td>
<td>65.</td>
<td>66.</td>
<td>14650</td>
</tr>
<tr>
<td>14550.</td>
<td>75.</td>
<td>76.</td>
<td>14650</td>
</tr>
</tbody>
</table>

---

**Note:**
- For e-chains, Part No. 14550.65, 14550.75, 14550.66, 14550.76 are not available.
- For e-tubes, Part No. 14650.65, 14650.75, 14650.66, 14650.76 are not available.

---

### Installation dimensions

**Unsupported applications | Short travels**

<table>
<thead>
<tr>
<th>Inner height [mm]</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pitch [mm/rev]</td>
<td>91</td>
</tr>
<tr>
<td>Links/n</td>
<td>11</td>
</tr>
</tbody>
</table>

---

**The required clearance height:** $H_R = H + 50$mm (with 2.5kg/m fill weight)

*Radius not available for e-tubes*

---

**Gliding applications | For long travels from 12m to max. 250m**

**Notes:**
- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels between 8 and 12m we recommend an e-chain® with a longer unsupported length.

---

**Available bend radii**

<table>
<thead>
<tr>
<th>$R$ [mm]</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>450</th>
<th>500</th>
<th>600</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R_{190}$</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
<td>266</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius $R$. Example:

- 14550.30.30.0 = crossbars every link / 14650.30.30.0 = crossbars every 2nd link / 19050.30.30.0 = fully enclosed

---

**3D CAD, service life calculation, configurators and more | www.igus.co.uk/E4light**

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More information: www.igus.co.uk/14550 | www.igus.co.uk/14650 | www.igus.co.uk/R19050

---

3D CAD, service life calculation, configurators and more | www.igus.co.uk/E4light
**KMA pivoting**

Recommended for unsupported and gliding applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set KMA locking</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>05.</td>
<td>145500.05</td>
<td>145510.05</td>
<td>12</td>
</tr>
<tr>
<td>06.</td>
<td>145500.06</td>
<td>145510.06</td>
<td>12</td>
</tr>
<tr>
<td>07.</td>
<td>145500.07</td>
<td>145510.07</td>
<td>12</td>
</tr>
<tr>
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<td>145510.08</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>145500.10</td>
<td>145510.10</td>
<td>12</td>
</tr>
<tr>
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<td>12</td>
</tr>
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<td>12</td>
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<td>145510.16</td>
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<tr>
<td>17.</td>
<td>145500.17</td>
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<td>12</td>
</tr>
<tr>
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<td>145510.25</td>
<td>12</td>
</tr>
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</table>

**KMA locking**

Recommended for vertical hanging and standing applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>Part No. full set KMA pivoting</th>
<th>Bi</th>
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</thead>
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<tr>
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<tr>
<td>25.</td>
<td>145500.25</td>
<td>145510.25</td>
<td>12</td>
</tr>
</tbody>
</table>

**Fixed end**

145500/145510 ... 1

**Moving end**

145500/145510 ... 2

**Front view of KMA**

40°
Interior separation | Increase cable service life

Previous generation of interior separation with other options: www.igus.co.uk/14550

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm / e-chain: 16mm

As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Separator for igus® QuickLock crossbar 450.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

<table>
<thead>
<tr>
<th>Width X (mm)</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
<td>520.050</td>
<td>521.050</td>
</tr>
<tr>
<td>065</td>
<td>520.065</td>
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<tr>
<td>125</td>
<td>520.125</td>
<td>521.125</td>
</tr>
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</table>

Order example: 1 combined with openable crossbars
To receive extender crossbar RD115 pre-fitted along the outer radius of the-chain®, please add index E: 14550.10/15RHD115/10/R.0.
To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index Z: 14550.10/15RD115/10/R.0.

Order example: 1 fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the-chain®, please add index E: 14550.17RD115/R.0.
To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index Z: 14550.17RD115/R.0.
Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ➤ From page 1264

Hot swarf up to +850°C
- e-tubes to withstand 850°C hot swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material
More information ➤ www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
More information ➤ www.igus.co.uk/E4savetime

Roller crossbars - increase the service life of cables and hoses
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
More information ➤ www.igus.co.uk/roller-crossbar

E4/light | Application example

Various igus® e-chains® installed vertically including light-weight E4/light e-chains®

E4/light | Series 14550-14650-R19050 | Further accessories

More information ➤ www.igus.co.uk/14550 ➤ www.igus.co.uk/14650 ➤ www.igus.co.uk/R19050

3D CAD, service life calculation, configurators and more ➤ www.igus.co.uk/E4light
**Part No.**

- **e-chains®**
  - Series 15050
  - Series 15150
  - Series R19850

- **e-tubes**
  - Series 15050
  - Series 15150
  - Series R19850

**Crossbars every link** (crossbars removable along the inner and outer radius)

**Crossbars every 2nd link** (crossbars removable along the inner and outer radius)

**Fully enclosed** (e-chains®) (e-chains® removable along the outer radius, from one side)

---

**Available bend radii**

<table>
<thead>
<tr>
<th><strong>R (mm)</strong></th>
<th><strong>150</strong></th>
<th><strong>200</strong></th>
<th><strong>250</strong></th>
<th><strong>300</strong></th>
<th><strong>350</strong></th>
<th><strong>400</strong></th>
<th><strong>500</strong></th>
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<tr>
<td><strong>R19850</strong></td>
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<td>30-300</td>
<td>30-300</td>
<td>30-300</td>
<td>30-300</td>
</tr>
</tbody>
</table>

**Notes:**

- Standardised product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation, 24hrs, from stock

---

**E4-light | 15050-15150-R19850**

"Light" design, large inner height

---

**Gliding applications | For long travels from 12m to max. 250m**

**Total length of guide trough**

**Guide trough with glide bar**

**Guide trough without glide bar**

**K<sub>L</sub> = S/2 + K<sub>2</sub>**

**Notes:**

- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels between 9 and 12m we recommend an e-chain® with a longer unsupported length.

---

**3D CAD, service life calculation, configurators and more | www.igus.co.uk/E4light**
<table>
<thead>
<tr>
<th>Width Index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
<th>Width Index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
<th>Bi [mm]</th>
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<td>151500.06.12.C</td>
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<td>32.</td>
<td>150500.32.12.C</td>
<td>151500.32.12.C</td>
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<tr>
<td>27.</td>
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<td>151500.27.12.C</td>
<td>275</td>
<td>60.</td>
<td>150500.60.12.C</td>
<td>151500.60.12.C</td>
<td>600</td>
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</tbody>
</table>

**KMA pivoting** | **Recommended for unsupported and gliding applications**

**KMA locking** | **Recommended for vertical hanging and standing applications**

---

**KMA pivoting** | **Recommended for unsupported and gliding applications**

**KMA locking** | **Recommended for vertical hanging and standing applications**

---

**Order example**

- R19850 25.12.C 250
- R19650 30.12.C 300
- R19950 35.12.C 350

---

**Strain relief**
e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainix range with ordering options ➤ From page 1300
**Interior separation | Increase cable service life**

Previous generation of interior separation with other options: [www.igus.co.uk/15050]

**Series 15050·15150·R19850**

Assembled/unassembled

- **assembled**
- **unassembled**

**Width = X [mm]**

- **min.40**: Notch separator for symmetrical separation with other options.
- **40mm**: Also available for QuickLock crossbar for more flexibility.

**Standard separator, wide base**

- **unassembled**: 80.1
- **assembled**: 80.1.1

**Separator for QuickLock crossbar**

- **unassembled**: 80.2
- **assembled**: 80.2.1

**Separator, narrow**

- **unassembled**: 80.3
- **assembled**: 80.3.1

**Separator, asymmetrical**

- **unassembled**: 80.4
- **assembled**: 80.4.1

**Notch separator for notched crossbar**

- **unassembled**: 80.5
- **assembled**: 80.5.1

**Shelf, lockable**

- **unassembled**: 520.X
- **assembled**: 521.X

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain*: 16mm

As standard separators are fitted every 2nd e-chain* link!

**Interchangeable aluminum separators**

- Standard - for any application
- For even faster installation
- For small cables
- For side-mounted applications

**Horizontal separation**

- Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

**Shelves Width = X [mm]**

<table>
<thead>
<tr>
<th>X</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>050</td>
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</tr>
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<td>521.100</td>
</tr>
<tr>
<td>125</td>
<td>520.125</td>
<td>521.125</td>
</tr>
</tbody>
</table>

**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain*: 16mm

As standard separators are fitted every 2nd e-chain* link!

**Split separators**

- In order to fill e-chain* more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

**Lean separators**

- **New**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain*.

- **Lean separator design** - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long e-chain* fitted with 12 cables in the igus® readychain® factory")

---

More information: [www.igus.co.uk/15050](http://www.igus.co.uk/15050) | [www.igus.co.uk/15150](http://www.igus.co.uk/15150) | [www.igus.co.uk/R19850](http://www.igus.co.uk/R19850)

---

3D CAD, service life calculation, configurators and more: [www.igus.co.uk/E4light](http://www.igus.co.uk/E4light)
E4/light | Series 15050-15150-R19850 | Accessories

More interior separation options

![Diagram of extender crossbar with fixed width]

Notch locking separator for increased holding force
Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Separator, one end locking
Offset slots for more variability

Rollclip*
Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

*Only for e-chain®

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

E4/light | Series 15050-15150-R19850 | Further accessories

Extender crossbar with fixed width

![Diagram of extender crossbar with fixed width]

Extension extender crossbars with fixed width | Safe guiding for large hoses

- Suitable for hoses with a maximum outer diameter of 270mm
- Option 1 extender crossbars with fixed width to combine with openable crossbars
- Option 2 extender crossbars with fixed width attached directly on the side link
- Optionally openable along the inner "Z" or the outer radius "E"
- Gliding with crossbars assembled along the outer radius and a special guide trough

<table>
<thead>
<tr>
<th>Part No. extender crossbar with fixed width, as individual parts</th>
<th>Hose Ø [mm]</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15RHD115</td>
<td>115</td>
<td>o round</td>
<td>No</td>
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<tr>
<td>450.17RD115</td>
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<td>Yes</td>
<td>No</td>
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<td>450.25D150</td>
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<td>Yes</td>
<td>No</td>
</tr>
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<td>450.25HD200</td>
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<td>No</td>
<td>Yes</td>
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<td>450.30HD250</td>
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<td>o square</td>
<td>No</td>
<td>Yes</td>
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</tbody>
</table>

Order example: 1 combined with openable crossbars
To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain®, please add index E: 15050.10/15RHD115/10/R.0
To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain®, please add index Z: 15050.10/15RHD115/10/R.0

Order example: 2 fitted to side link
To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 15050.17RD115/10/R.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 15050.17RD115/10/R.0

Note: Please be aware of the minimum lateral gap to the side links!
**Extension links**

**For extremely wide e-chains® up to 3.0m**
- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3000mm
- Unsupported length FL max. can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extension link e-chain®</td>
<td>Extension link e-tube</td>
<td>Extension link as an individual part</td>
</tr>
</tbody>
</table>

Complete Part No. with the width index Bi1/Bi2/Bi3/etc. and the radius (R). Example: 14040.10/20/10.200.0

---

**Handling unit indoor crane - long unsupported span with an igus® E4 series**

---

**3D CAD, service life calculation, configurators and more ➤ www.igus.co.uk/E4light**
e-chains® | Series 15250
Crossbars every link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
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<th>15350</th>
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<td>200</td>
<td>1519</td>
<td>1519</td>
</tr>
</tbody>
</table>

Available bend radii

Available bend radii

Complete Part No. with required radius (R).

Example:

15250.20,300.0 = crossbars every link / 15350.20,300.0 = crossbars every 2nd link

Note: We recommend the project planning of such a system to be carried out by igus®.

In case of travels between 9 and 12m we recommend an e-chain® with a longer unsupported length.
KMA mounting brackets | Attachment from any side | Pivoting | Locking

**Recommended for unsupported and gliding applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set KMA pivoting</th>
<th>Part No. full set KMA locking</th>
</tr>
</thead>
<tbody>
<tr>
<td>60.</td>
<td>152500.012.C</td>
<td>153500.05.12.C</td>
</tr>
<tr>
<td>60.</td>
<td>152500.06.12.C</td>
<td>153500.06.12.C</td>
</tr>
<tr>
<td>67.</td>
<td>152500.08.12.C</td>
<td>153500.08.12.C</td>
</tr>
<tr>
<td>100.</td>
<td>152500.10.12.C</td>
<td>153500.10.12.C</td>
</tr>
<tr>
<td>110.</td>
<td>152500.11.12.C</td>
<td>153500.11.12.C</td>
</tr>
<tr>
<td>150.</td>
<td>152500.15.12.C</td>
<td>153500.15.12.C</td>
</tr>
</tbody>
</table>

For even faster installation

Separator for igus® QuickLock crossbar 385.X.O. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

---

3D CAD, service life calculation, configurators and more | www.igus.co.uk/E4light

---

E4/light | Series 15250-15350 | Accessories

Interior separation | Increase cable service life

Previous generation of interior separation with other options | www.igus.co.uk/15250

---

More information | www.igus.co.uk/15250 | www.igus.co.uk/15350

---

igus® 15250-15350 | Accessories

---

15250 - 15350

---

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options | From page 1300
### E4/light | Series 15250-15350 | Further accessories

- **e-chain® with openable extender crossbars**
  - New

#### Extender crossbars with flexible width | Safe guiding for large hoses
- For guiding and protecting large hoses
- With mounting for noise dampers
- Cable-friendly design, high crossbar holding force
- The openable extender crossbars can be fitted in different ways and combinations
- Optionally openable along the inner or outer radius

#### Extenor crossbars with fixed width

**Extender crossbar with fixed width**

- Suitable for hoses with a maximum outer diameter of 115mm.
- Option 1 extender crossbars with fixed width to combine with openable crossbars
- Optionally openable along the inner "Z" or the outer radius "E"
- Gliding with crossbars assembled along the outer radius and a special guide trough

#### Crossbar combinations

<table>
<thead>
<tr>
<th>Part No. extender crossbar with fixed width, as individual parts</th>
<th>Hose Ø [mm]</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>385.15RHD115</td>
<td>115</td>
<td>O round</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>385.18RHD115</td>
<td>115</td>
<td>O round</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

Order example: 1) combined with openable crossbars

To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain®, please add index E: 15250.10/15RHD115/10/R.0

To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain®, please add index Z: 15250.10/15RHD115/10/R.0

Order example: option 2 fitted to side link

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 15250.18RDE115/R.0

To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 15250.18RDE115/R.0

---

<table>
<thead>
<tr>
<th>Versions</th>
<th>e-chains® with extender crossbar</th>
<th>Hose Ø [mm]</th>
<th>Part No. extender crossbars every link</th>
<th>Part No. extender crossbars every 2nd link</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4/light</td>
<td>1) Extender crossbar and standard crossbar alternating along the inner and outer radius</td>
<td>34</td>
<td>15250.XXXHB50/R.0</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2) Extender crossbar on both sides along the inner and outer radius</td>
<td>150</td>
<td>15250.XXXBSO/R.0</td>
<td>15350.XXXBSO/R.0</td>
</tr>
<tr>
<td></td>
<td>3) Extender crossbar along the outer radius</td>
<td>120</td>
<td>15250.XXXBSO/R.0</td>
<td>15350.XXXBSO/R.0</td>
</tr>
<tr>
<td></td>
<td>4) Extender crossbar along the inner radius</td>
<td>120</td>
<td>15250.XXXBSO/R.0</td>
<td>15350.XXXBSO/R.0</td>
</tr>
<tr>
<td></td>
<td>5) Extender crossbar and standard crossbar alternating along the outer radius</td>
<td>34</td>
<td>15250.XXXHB50/R.0</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6) Extender crossbar and standard crossbar alternating along the inner radius</td>
<td>34</td>
<td>15250.XXXHB50/R.0</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Versions</th>
<th>e-chains® with extender crossbar</th>
<th>Hose Ø [mm]</th>
<th>Part No. extender crossbars every link</th>
<th>Part No. extender crossbars every 2nd link</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4/light</td>
<td>1) Minimum bend radius R 125</td>
<td>15250.100B50,150/R.0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Hinged crossbars | Swivel clip | Openable crossbar remains attached to the e-chain®

- When opening crossbars must remain attached to the e-chain®
- Hinged crossbars consist of a swivel clip and a shortened crossbar
- Openable crossbar (shortened): Bi-37.5 mm (smallest inner width Bi = 87.5 mm)
- Please consult igus® for assistance with this product

Part No. openable crossbar
Swivel clip as an individual part
385.02
385.03

Part No.
E4/light e-chain®
15250 Bi Z R.0

Part No.
Swivel clip as an individual part
385.02

Part No.
Hinged crossbar
15250 Bi Z R.0

Complete Part No. with the width index Bi, the index Z for the required option and the radius (R). Example: 15250.137.1 R.0

System E4/light e-chains® - can be filled with cables of diameters up to 100 mm

Steel support tray for support of the lower run

- Simple one-piece support trays for the lower run
- To your requirements and specifications
- 4 options available
- More information ➤ From page 1264

Hot swarf up to +850°C

- E-tubes to withstand 850°C hot swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material
- More information ➤ www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener

- E-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
- More information ➤ www.igus.co.uk/E4savetime

Roller crossbars - increase the service life of cables and hoses

- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
- More information ➤ www.igus.co.uk/roller-crossbar

More information ➤ www.igus.co.uk/15250
More information ➤ www.igus.co.uk/15350
More information ➤ www.igus.co.uk/E4light
Series R1608
Stable due to undercut design, new very large inner height

E4/light

Series 1640
Radius not available for e-tubes

Series 1640
Crossbars every link (crossbars removable along the inner and outer radius)

Crossbars every link (crossbars removable along the inner and outer radius) (lids openable along the outer radius, from one side)
Steel pivoting | For unsupported, gliding, vertical hanging and vertical standing applications

<table>
<thead>
<tr>
<th>Part No. full set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>16000.12.VS.E</td>
<td>Full set (both ends), ending with outer side link, screwed standard</td>
</tr>
<tr>
<td>16000.12.VS.E</td>
<td>Full set (both ends) - beginning with outer side link (moving end) - ending with inner side link (fixed end), screwed standard</td>
</tr>
</tbody>
</table>

Stainless steel version available. Please add the index .E (Material: stainless steel 1.4301)

Note: Depending on the chain length, the e-chain® may end with either an outer or an inner side link. For the best appearance, make sure the e-chain® ends with outer side links whenever possible. (with odd number of links)

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300
### Interior separation | Increase cable service life | Only for e-tubes

#### Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

#### Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

#### Shelves

<table>
<thead>
<tr>
<th>Width [X mm]</th>
<th>Unassembled</th>
<th>Assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>1120.050</td>
<td>1121.050</td>
</tr>
<tr>
<td>60</td>
<td>1120.065</td>
<td>1121.065</td>
</tr>
<tr>
<td>70</td>
<td>1120.075</td>
<td>1121.075</td>
</tr>
<tr>
<td>80</td>
<td>1120.100</td>
<td>1121.100</td>
</tr>
<tr>
<td>90</td>
<td>1120.125</td>
<td>1121.125</td>
</tr>
</tbody>
</table>

### Interior separation | To allow faster filling

#### Split separators
In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

#### Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

#### More interior separation options
- **Notch locking separator** for increased holding force: Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.
- **Rollclip**®: Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.
Extender crossbars with fixed width | Safe guiding for large hoses

- Suitable for hoses with a maximum outer diameter of 300mm.
- Option 1 extender crossbars with fixed width to combine with openable crossbars
- Option 2 extender crossbars with fixed width attached directly on the side link
- Optionally openable along the inner "Z" or the outer radius "E"
- Gliding with crossbars assembled along the outer radius and a special guide trough

### Table: Extender crossbars with fixed width

<table>
<thead>
<tr>
<th>Part No. extender crossbar with fixed width, as individual parts</th>
<th>Hose Ø [mm]</th>
<th>Extender crossbar shape</th>
<th>Fitted to side link</th>
<th>Combine with openable crossbars</th>
</tr>
</thead>
<tbody>
<tr>
<td>450.15RD115</td>
<td>115</td>
<td>Round</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.17RD115</td>
<td>115</td>
<td>Round</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.25D150</td>
<td>150</td>
<td>Square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.30D200</td>
<td>200</td>
<td>Square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.35D250</td>
<td>250</td>
<td>Square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.40D300</td>
<td>300</td>
<td>Square</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>450.20HD150</td>
<td>150</td>
<td>Square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.25HD200</td>
<td>200</td>
<td>Square</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>450.30HD250</td>
<td>250</td>
<td>Square</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Order example: 1 combined with openable crossbars

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 1640.10/15HD115/R10.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 1640.10/15HD115/R10.0

Order example: 2 fitted to side link

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 1640.17RD115/R10.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 1640.17RD115/R10.0

Circular movements (also with Reverse Bend Radius ‘RBR’) are possible

---

Extension links | For extremely wide e-chains® up to 3.0m

- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3000mm
- Unsupported length FLmax can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

### Table: Extension links

<table>
<thead>
<tr>
<th>Part No. Extension link e-chain®</th>
<th>Part No. Extension link e-tube</th>
<th>Part No. Extension link as an individual part</th>
</tr>
</thead>
</table>

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index E: 1640.10/20/200.0
To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index Z: 1640.10/20/200.0
E4/light | Series 1640-R1608 | Further accessories

E4 snapclip - clip-on tiewrap
- For side-mounted applications, compatible with many E4 e-chains®
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as required
More information ➤ www.igus.co.uk/1640

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ➤ From page 1264

Hot swarf up to +850°C
- e-tubes to withstand 850°C hot swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material
More information ➤ www.igus.co.uk/HT

Reduce assembly time - E4 e-chain® opener
- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction
More information ➤ www.igus.co.uk/E4savetime

Roller crossbars - increase the service life of cables and hoses
- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible
More information ➤ www.igus.co.uk/roller-crossbar

E4/light | Application example

Side-mounted E4 Light e-tubes - machine tool fitted with a swarf-repellent e-tube from the E4 modular system

More information ➤ www.igus.co.uk/1640 ➤ www.igus.co.uk/R1608

3D CAD, service life calculation, configurators and more ➤ www.igus.co.uk/E4light
T3 Light, highly flexible and low-vibration

Advantages of the T3 system:
- Very low weight e-chain®
- For high speeds and accelerations
- Virtually no polygon effect
- Small bend radii and installation space
- Fast, easy filling and assembly
- Low noise 33dB(A)\(^1\) - extremely low noise and low vibration due small pitch
- Cleanroom ISO Class 2\(^2\) - virtually no wear or abrasion

1) Extremely low-noise - tested at the igus® lab
2) Cleanroom - Series T3.29.050.038.0

When to use another igus® e-chain® series:
- When an e-chain® for more fill weight is required
  ➤E6.1, page 750
- When larger interior heights are required
  ➤E6.1, page 750
- When Cleanroom ISO Class 1 is required
  ➤E6.1, page 750
- When an enclosed e-chain® for smooth running is required
  ➤R6, page 788
Smooth running "T-band", quiet, cost-effective - T3 system

The T3 system combines low noise operation, simple assembly and economy. The side bands, which snap together, replace a conventional pin/bore connection and prevent relative movements between the joints giving extremely low wear. This means virtually no wear or abrasion (cleanroom). The geometrical shape of the t-band, means that hardly any polygon effect is generated in operation. The t-band therefore rolls in a very smooth arc, giving extremely low vibration and noise. In order to reduce the manufacturing and installation costs, the t-band is made in a segment of 8 links (similar to the igus® E3 system). Due to its low mass, the igus® t-band, is suitable for applications with low fill weights and short strokes, combined with high speeds and accelerations.

1) Extremely low-noise - tested at the igus® lab
2) Cleanroom - Series T3.29.050.038.0

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

IPA Qualification Certificate2) - Report IG 1303-640-1:
ISO Class 2, according to DIN EN ISO 14644-1 for system T3, series T3.29.050.038.0 at v = 0.5 m/s, 1 m/s, 2 m/s

igus® tests at 1 m measuring distance:
= 33 dB(A) for T3.29.050.038.0 at v = 1 m/s and 26.5 dB(A) basic sound level
T3 | Technical data | Overview

**Technical data**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed $F_{L_0}$ / acceleration $F_{L_0}$</td>
<td>$\leq 20$ [m/s] / $\leq 200$ [m/s$^2$]</td>
</tr>
<tr>
<td>Speed $F_{L_a}$ / acceleration $F_{L_a}$</td>
<td>$\leq 3$ [m/s] / $\leq 6$ [m/s$^2$]</td>
</tr>
<tr>
<td>Material - permitted temperature °C</td>
<td>upon request</td>
</tr>
<tr>
<td>Flammability class</td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
</tbody>
</table>

[Rb] = unsupported with straight upper run  [Rb] = unsupported with permitted sag

---

**T3 e-chains® and modules for circular movement**

- T3 e-chains® with Reverse Bend Radii: RBR
- Several Reverse Bend Radii: 55, 75, 100, 150
- Wide range of interior separation layouts
- Quiet operation
- Low wear.

Please consult igus® for delivery time.

More information: [www.igus.co.uk/circularmovement](http://www.igus.co.uk/circularmovement)

**T3 RBR module for Reverse Bend Radii**

- Consists of 4 elements: T3 RBR e-chain®, guiding system, chainflex® cables, iglidur® PRT slewing ring bearing
- Compact guide trough
- Inner or outer radius rotation
- For high speeds
- Quiet
- Several mounting options.

Please consult igus® for delivery time.

More information: [www.igus.co.uk/circularmovement](http://www.igus.co.uk/circularmovement)

---

**Options with order keys | Examples based on series T3.29**

**Options with order keys**

- Standard
- NC version - (No Camber)
- Reverse Bend Radius (RBR) for circular movements

**Part No.**

- **Standard**
- **NC version**
- **RBR**

**Delivery time**

- 2-5 business days
- 5-10 business days

**Ready to ship**

- in 24 - 48hrs.

**Order example**

**Order key and colour examples**

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**

- e-chain® (1.0m) Please indicate e-chain® length or number of links: 1.0m or 67 links T3.29.050.038.0
- Mounting brackets 1 set (with tie-wrap plates) T3.29.050.12PZ
- Interior separation with 2 separators assembled every 2nd link 2 x .29.11

**Order text:**

1 m T3.29.050.038.0 + T3.050.12 + 2 x .29.11

**Order key**

1-shaped band e-chains®

- T3.29.050.038.0

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard</td>
<td>Orange</td>
<td>Special</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special</td>
<td>Yellow</td>
<td>Special</td>
</tr>
<tr>
<td>White</td>
<td>Special</td>
<td>Light grey</td>
<td>Special</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special</td>
<td>Special</td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock.

Above special colours upon request.

---

**Order index for colour options**

- Black
- Orange
- Silver-grey
- Yellow
- White
- Light grey
- Grey-white

More information: [www.igus.co.uk/T3](http://www.igus.co.uk/T3)

3D CAD, configurators, service life calculation and more: [www.igus.co.uk/T3](http://www.igus.co.uk/T3)
**T3 | Series T3.29 | Product range**
e-chain® t-band for highly dynamic applications

---

**e-chains® | Series T3.29 | Crossbars removable along the inner and outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>T3.29.030.R.0</td>
<td>30</td>
<td>55</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.040.R.0</td>
<td>40</td>
<td>85</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.050.R.0</td>
<td>50</td>
<td>105</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.060.R.0</td>
<td>60</td>
<td>105</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.070.R.0</td>
<td>70</td>
<td>95</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.080.R.0</td>
<td>80</td>
<td>105</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.090.R.0</td>
<td>90</td>
<td>115</td>
<td>038</td>
</tr>
<tr>
<td>T3.29.100.R.0</td>
<td>100</td>
<td>125</td>
<td>038</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: T3.29.100.038.0

---

**Installation dimensions**

![Diagram showing installation dimensions]

**T3 | Series T3.29 | Accessories**

Mounting brackets | Polymer | Mounting angle

---

Moving end

Fixed end

![Diagram showing mounting brackets]

**Width index**

<table>
<thead>
<tr>
<th>A</th>
<th>Bi</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>030.</td>
<td>15</td>
<td>20</td>
</tr>
<tr>
<td>040.</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>050.</td>
<td>30</td>
<td>50</td>
</tr>
<tr>
<td>060.</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>070.</td>
<td>15 + 20*</td>
<td>70</td>
</tr>
<tr>
<td>080.</td>
<td>60</td>
<td>80</td>
</tr>
<tr>
<td>090.</td>
<td>20 + 30*</td>
<td>90</td>
</tr>
<tr>
<td>100.</td>
<td>80</td>
<td>100</td>
</tr>
<tr>
<td>110.</td>
<td>30 + 40*</td>
<td>110</td>
</tr>
<tr>
<td>120.</td>
<td>40 + 40*</td>
<td>120</td>
</tr>
<tr>
<td>140.</td>
<td>60 + 40*</td>
<td>140</td>
</tr>
</tbody>
</table>

*Strain relief consisting of 2 tiewrap plates

---

**Strain relief**

e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
T3 | Series T3.29 | Accessories

Interior separation | Increase cable service life

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. E6.29.02.Z. More information ➤ From page 1326

Separator, narrow top

Separated, narrow top

Notch separator for notched crossbar

Shelf, lockable

Standard separator, wide base

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Standard separator, wide base unassembled 29.1 assembled 29.1.1

Separator, narrow top unassembled 29.2 assembled 29.2.1

Notch separator for notched crossbar unassembled 29.5 assembled 29.5.1

Shelves Width = X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
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<tr>
<td>025</td>
<td>2300.025</td>
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<td>2300.030</td>
<td>2310.030</td>
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<td>2300.038</td>
<td>2310.038</td>
</tr>
<tr>
<td>040</td>
<td>2300.040</td>
<td>2310.040</td>
</tr>
<tr>
<td>050</td>
<td>2300.050</td>
<td>2310.050</td>
</tr>
<tr>
<td>057</td>
<td>2300.057</td>
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<tr>
<td>060</td>
<td>2300.060</td>
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<td>2300.062</td>
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<td>070</td>
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<tr>
<td>075</td>
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<td>2300.110</td>
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</tr>
<tr>
<td>120</td>
<td>2300.120</td>
<td>2310.120</td>
</tr>
<tr>
<td>125</td>
<td>2300.125</td>
<td>2310.125</td>
</tr>
</tbody>
</table>

Perfect match. Cleanroom-suitable igus® chainflex® cables are safely guided in a T3 e-chain®. 1,125 chainflex® cables are certified according to IPA ISO Class 1 or Class 2 and are available from stock.

More information ➤ www.igus.co.uk/T3.29

From page 1326
Advantages of the E3 system:
- For high speeds and accelerations
- For extremely fast opening and closing
- Low noise 38dB(A)\(^1\) - low noise and low vibration due small pitch
- Cleanroom ISO Class 1\(^2\) - virtually no wear or abrasion

When to use another e-chain\(^\circ\) series:
- When a larger e-chain\(^\circ\) with cleanroom Class 1 is required
  - E6.1, page 750
- When a more cost-effective, openable solution is required
  - easy chain\(^\circ\), page 198
- When longer unsupported lengths are required
  - E6.1, page 750

\(^1\) Extremely low-noise - tested at the igus\(^\circ\) lab. \(^2\) Cleanroom - Series E3.15.040.075.0
E3 | Introduction | Advantages

High dynamics and cleanroom compatible - System E3

E3 combines small pitch, smooth running, low noise, stability, easy assembly and low cost. The spring connector element replaces the pin and bore and avoids relative movement between the joints. This means virtually no wear or abrasion (cleanroom). To reduce production and assembly costs, the spring connector is on a segment of ten e-chain® links.

Typical industries and applications
- Semi-conductor manufacturing and handling
- Pick and place robots
- Optics
- Material handling technology
- Measuring technology
- Printers and plotters
- Cleanroom environments
- General mechanical engineering

Cleanroom ISO Class 1®
- Virtually no wear or abrasion

Universal:
polymer mounting brackets
or mounting angles

Low noise from 38dB(A)\(^1\):
small pitch for low noise,
smooth running

Fast assembly:
zip-open along the outer radius

Dynamic:
for high speeds and accelerations

Modular design:
crossbars, interior separation
and links all in one band

Modular:
easy to lengthen and shorten at any point

IPA Qualification Certificate® - Report IG 0704-400:
ISO Class 1, according to DIN EN ISO 14644-1 for system E3, series E3.15.040.075.0 at v = 0.5m/s, 1m/s, 2m/s

Long-term tests in our acoustics laboratory at a speed of 1.8m/s and an acceleration of 3m/s\(^2\) showed reductions of 19-20dB(A) compared to conventional e-chains®

More information ➤ www.igus.co.uk/E3

E3 | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Unsupported length ≤ [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.10</td>
<td>10</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>15</td>
<td>15 - 48</td>
<td>0.70</td>
</tr>
<tr>
<td>E3.15</td>
<td>15</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>20</td>
<td>32 - 75</td>
<td>0.90</td>
</tr>
<tr>
<td>E3.22</td>
<td>22</td>
<td>20 - 60</td>
<td>32 - 72</td>
<td>27</td>
<td>44 - 75</td>
<td>1.20</td>
</tr>
</tbody>
</table>

System E3 - 3-piece e-chains®
crossbars on a strip - zip-open along the outer radius

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/E3

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E3
1,125 chainflex® cables are certified according to IPA ISO Class 1 or Class 2 and are available from stock.
e-chains® | Series E3.10 | Crossbars on a strip - zip-open along the outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii [mm]</th>
<th>E3.10</th>
<th>[kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E3.10.020.R0</td>
<td>20</td>
<td>32</td>
<td>[015</td>
<td>028</td>
<td>038*</td>
</tr>
<tr>
<td>E3.10.040.R0</td>
<td>40</td>
<td>52</td>
<td>[015</td>
<td>028*</td>
<td>038</td>
</tr>
<tr>
<td>E3.10.060.R0</td>
<td>60</td>
<td>72</td>
<td>[015</td>
<td>028*</td>
<td>038</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: E3.10.060.015.0

Installation dimensions

- Inner height [mm]: 10
- Pitch [mm/link]: 16.7
- Links/m: 60
- Corresponds to [mm]: 1,002
- e-chain® length: \( L + 1.5 + K \)

The required clearance height: \( H_F = H + 50 \text{mm} \) (with 0.1 kg/m fill weight)

More information: [www.igus.co.uk/E3.10](http://www.igus.co.uk/E3.10)

E3 | Series E3.10 | Accessories

Mounting brackets, polymer | Pivoting

- Fixed end
- Moving end

Width index Part No. full set without tie-wrap plates A [mm] B [mm] Part No. strain relief at both ends

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Part No. strain relief at both ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>020.</td>
<td>E3.100.020.12</td>
<td>28</td>
<td>36</td>
<td>E3.020.12</td>
</tr>
<tr>
<td>040.</td>
<td>E3.100.040.12</td>
<td>48</td>
<td>56</td>
<td>E3.020.12</td>
</tr>
<tr>
<td>060.</td>
<td>E3.100.060.12</td>
<td>68</td>
<td>76</td>
<td>E3.020.12</td>
</tr>
</tbody>
</table>

Order example

- Part No. E3.100.XXX.12
  - Full set without strain relief Tie-wrap plates must be ordered separately.

- Part No. E3.00.020
  - Tie-wrap plate as an individual part

Possible orientations for assembled polymer mounting brackets.
E3 | Series E3.10 | Accessories

Mounting angle, polymer | Locking

Possible attachments options for assembled polymer mounting angles.

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

Slotted separator
Separators can be arranged at any position in the chain cross section to divide the interior of the e-chain®.

Part No. E3.10.XXX.12
Full set with strain relief at both ends
2 tiewrap plates + 4 mounting angles

Part No. E3.10.00
Mounting angle as an individual part

Part No. E3.00.020
Tiewrap plate as an individual part

Order example

E3.10.060.12
Full set
Width index
Series

Note: If the mounting brackets are used, two links each end must be added to the calculated e-chain® length, because the first two links are fixed by the mounting brackets.

More information ➤ www.igus.co.uk/E3.10

E3 e-chains® in optional white colour; ideal for cleanroom and medical applications, available upon request
E3 | Series E3.15 | Crossbars on a strip - zip-open along the outer radius

Part No. Bi Ba R Available bend radii

R | mm | mm | E3.15
15

| E3.15 | 020 .R.0 | 20 | 32 | 032 | 048 | 075 | 0.22 |
| E3.15 | 040 .R.0 | 40 | 52 | 032 | 038 | 048 | 075 | 0.25 |
| E3.15 | 060 .R.0 | 60 | 72 | 032 | 038 | 048 | 075 | 0.32 |

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: E3.15.060.032.0

Installation dimensions

- Inner height $H_F = H + 50\text{mm}$
- Pitch $P = 16.7\text{mm}$
- Links/m $L = \frac{1}{60}$
- Corresponds to $K$ with $R$ for e-chain® length $L_e + 1.5 + K$

E3.15

---

E3 | Series E3.15 | Accessories

Fixed end

Moving end

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>without tie wrap plates</td>
<td>E3.15.020.020.12</td>
<td>28</td>
<td>36</td>
</tr>
<tr>
<td>E3.15.040.040.12</td>
<td>48</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>E3.15.060.060.12</td>
<td>68</td>
<td>76</td>
<td></td>
</tr>
</tbody>
</table>

Part No. E3.150.XXX.12
Full set without strain relief Tiewrap plates must be ordered separately.

Part No. E3.00.020
Tiewrap plate as an individual part

Possible orientations for assembled polymer mounting brackets.

Order example

Full set Width index Series

More information ➤ www.igus.co.uk/E3.15

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E3

742

743
**Part No. E3.15.XXX.12**

Full set with strain relief at both ends
2 tiewrap plates + 4 mounting angles

**Part No. E3.15.00**

Mounting angle as an individual part

**Part No. E3.00.020**

Tiewrap plate as an individual part

**Possible attachments**

options for assembled polymer mounting angles.

---

**Part No. E3.15.00**

Mounting angle as an individual part

---

**Note:** If the mounting brackets are used, two links each end must be added to the calculated e-chain® length, because the first two links are fixed by the mounting brackets.

---

**Slotted separator**

Separators can be arranged at any position in the chain cross section to divide the interior of the e-chain®.

---

**Slotted separator on a strip**

Five vertical separators altogether on one strip over ten e-chain® links are mounted on the openable crossbars. In this way separate chambers are formed, protecting the cables. Dimensions same as E3.15.01.

---

**E3.15.01 - E3.15.11**

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

---

**E3.15.020.12**

E3.15.060.12

---

**Order example**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set strain relief at both ends + 4 mounting angles*</th>
<th>Part No. mounting angle* (single part)</th>
<th>Part No. strain relief at both ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>020.</td>
<td>E3.15.020.12</td>
<td>E3.00.00</td>
<td>E3.020.12</td>
</tr>
<tr>
<td>040.</td>
<td>E3.15.040.12</td>
<td>E3.00.00</td>
<td>E3.040.12</td>
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<tr>
<td>060.</td>
<td>E3.15.060.12</td>
<td>E3.00.00</td>
<td>E3.060.12</td>
</tr>
</tbody>
</table>

---

**Dimensions**

- Width index
- Part No. full set strain relief at both ends + 4 mounting angles*
- Part No. mounting angle* (single part)
- Part No. strain relief at both ends

---

**Slotted separator on a strip**

Five vertical separators altogether on one strip over ten e-chain® links are mounted on the openable crossbars. In this way separate chambers are formed, protecting the cables. Dimensions same as E3.15.01.

---

**E3.15.01 - E3.15.11**

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

---

**E3.15.020.12**

E3.15.060.12

---

**Order example**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set strain relief at both ends + 4 mounting angles*</th>
<th>Part No. mounting angle* (single part)</th>
<th>Part No. strain relief at both ends</th>
</tr>
</thead>
<tbody>
<tr>
<td>020.</td>
<td>E3.15.020.12</td>
<td>E3.00.00</td>
<td>E3.020.12</td>
</tr>
<tr>
<td>040.</td>
<td>E3.15.040.12</td>
<td>E3.00.00</td>
<td>E3.040.12</td>
</tr>
<tr>
<td>060.</td>
<td>E3.15.060.12</td>
<td>E3.00.00</td>
<td>E3.060.12</td>
</tr>
</tbody>
</table>

---

**Dimensions**

- Width index
- Part No. full set strain relief at both ends + 4 mounting angles*
- Part No. mounting angle* (single part)
- Part No. strain relief at both ends

---

**Slotted separator on a strip**

Five vertical separators altogether on one strip over ten e-chain® links are mounted on the openable crossbars. In this way separate chambers are formed, protecting the cables. Dimensions same as E3.15.01.
E3 | Series E3.22 | Product range
Fast opening, for high accelerations

Image with plastic mounting bracket

E3 | Series E3.22 | Crossbars on a strip - zip-open along the outer radius

e-chains® | Series E3.22

Part No. | Bi [mm] | Ba [mm] | R [mm] | Available bend radii [mm] | Fill weight [kg/m] |
--- | --- | --- | --- | --- | --- |
E3.22.200 | 0.20 | 32 | 0.44 | 0.05 | 0.075 |
E3.22.040 | 0.40 | 52 | 0.44 | 0.05 | 0.075 |
E3.22.060 | 0.60 | 72 | 0.44 | – | 0.075 |

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: E3.22.060.044.0

Installation dimensions

Inner height [mm]: 22
Pitch [mm/link]: 16.7
Links/m: 60
Corresponds to [mm]: 1,002
E-chain® length: \(L_e + \frac{16}{100} + K\)

The required clearance height: \(H_F = H + 50\)mm (with 0.3kg/m fill weight)

More information: www.igus.co.uk/E3.22

E3 | Series E3.22 | Accessories
Mounting brackets, polymer | Pivoting

Fixed end
E3.220 ... 2
Moving end
E3.220 ... 1

Width index
Part No. full set
without tiewrap plates
A [mm] | B [mm]
--- | --- |
020. | E3.220.020.12 | 28 | 36 |
040. | E3.220.040.12 | 48 | 56 |
060. | E3.220.060.12 | 68 | 76 |

Part No. strain relief at both ends
E3.220.12

Part No. E3.220.XXX.12
Full set without strain relief TieWrap plates must be ordered separately.

Part No. E3.00.020
TieWrap plate as an individual part

Possible orientations for assembled polymer mounting brackets.

Order example
Full set
Width index
Series

E3.220.060.12

More information: www.igus.co.uk/E3

3D CAD, configurators, service life calculation and more
E3 | Series E3.22 | Accessories
Mounting angle, polymer | Locking

**Width index** | **Part No. full set strain relief at both ends + 4 mounting angles** | **Part No. mounting angle (single part) + strain relief at both ends** | **Ba** [mm]
---|---|---|---
020. | E3.22.020.12 | E3.22.00 | E3.020.12 | 32
040. | E3.22.040.12 | E3.22.00 | E3.040.12 | 52
060. | E3.22.060.12 | E3.22.00 | E3.060.12 | 72

* Note: If the mounting brackets are used, two links each end must be added to the calculated e-chain® length, because the first two links are fixed by the mounting brackets.

Part No. E3.22.XXX.12
Full set with strain relief at both ends
2 tiewrap plates + 4 mounting angles

Part No. E3.22.00
Mounting angle as an individual part

Part No. E3.00.020
Tiewrap plate as an individual part

Possible attachments options for assembled polymer mounting angles.

**E3.22.060.12**
Order example

---
**Slotted separator**
Separators can be arranged at any position in the chain cross section to divide the interior of the e-chain®.

**Part No. E3.00.020**
Tiewrap plate as an individual part

**Part No. E3.22.00**
Mounting angle as an individual part

**Part No. E3.22.XXX.12**
Full set with strain relief at both ends
2 tiewrap plates + 4 mounting angles

**E3.22.060.12**
Order example
E6.1
Dynamic, quiet, light and cleanroom suitable

Advantages of the E6.1 system:
- Extremely quiet, low-vibration e-chain®
- For very high speeds and accelerations
- Ideal ratio of internal and external dimensions with thinner outer links and optimised crossbar geometry
- High push-pull forces
- Small bend radii
- Low-noise 32dB(A) - extremely low noise and vibration
- Cleanroom ISO Class 1 - virtually no wear or abrasion

1) Extremely low-noise - tested at the igus® lab Series E61.29.070.055.0
2) Cleanroom - Series E61.29.50.075.0 and Series E61.29.50.075.0.CR

When to use another e-chain® series:
- For side-mounted applications
  - E2/000, page 360
- When a Reverse Bend Radius RBR is required
  - E2/000, page 360
- For longer unsupported lengths
  - E2/000, page 360
- For long travels
  - E2/000, page 360
- When an enclosed e-chain® for smooth running is required
  - R6, page 788
E6.1 | Introduction | Advantages

**Dynamic, quiet, light and cleanroom suitable - E6.1**

The E6.1 series is a development of the E6 series. It incorporates all the advantages of the E6 such as strength, cleanroom-compatibility and low weight in addition to even quieter operation at higher maximum speeds. In addition, its accessibility to the interior and the assembly and handling have been improved.

- Low-noise - from a noise level of 32dB(A)$^{1)}$
- Weight savings approx. 30% compared to the System E6
- Highly dynamic
- Extremely low vibration
- Cleanroom-compatible due to principle of low-abrasion for connectors, without pin/bore connection
- Virtually no polygon effect, smooth rolling operation
- Smooth interior design for a long lifetime for cables and hoses
- Crossbars removable along the inner and outer radius
- Option without camber (NC) simply by turning the inner link

1) Extremely low-noise - tested at the igus® lab Series E61.29.070.055.0
2) Cleanroom - Series E61.29.50.075.0 and Series E61.29.50.075.0.CR

Typical industries and applications

- Semiconductor industry
- Studio equipment and camera tracking systems
- Printer/plotter industry
- In applications with extremely high accelerations
- When noise minimisation and a low level of abrasion are important

**Series E61.29 special feature:** crossbar openable along inner and outer radius, from both sides

$^{1)}$ 32dB(A)$^{1)}$ - level determined at the igus® test-lab, v = 1.0m/s unsupported, series E61.29.070.055.0

---

**E6.1 | Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height $h$ [mm]</th>
<th>Inner width $b_i$ [mm]</th>
<th>Outer width $b_a$ [mm]</th>
<th>Outer height $h_a$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Unsupported length $l$ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.29</td>
<td>29</td>
<td>30 - 140</td>
<td>44 - 14</td>
<td>35</td>
<td>055 - 150</td>
<td>1.75</td>
<td>758</td>
</tr>
<tr>
<td>E61.35</td>
<td>35</td>
<td>30 - 140</td>
<td>46 - 156</td>
<td>42</td>
<td>055 - 150</td>
<td>1.90</td>
<td>764</td>
</tr>
<tr>
<td>E61.40</td>
<td>40</td>
<td>40 - 300</td>
<td>56 - 316</td>
<td>54</td>
<td>063 - 200</td>
<td>2.50</td>
<td>768</td>
</tr>
<tr>
<td>E61.52</td>
<td>52</td>
<td>40 - 300</td>
<td>64 - 324</td>
<td>65</td>
<td>075 - 150</td>
<td>3.00</td>
<td>774</td>
</tr>
<tr>
<td>E61.62</td>
<td>62</td>
<td>50 - 400</td>
<td>82 - 432</td>
<td>84</td>
<td>115</td>
<td>4.00</td>
<td>778</td>
</tr>
<tr>
<td>E61.80</td>
<td>80</td>
<td>50 - 600</td>
<td>78 - 628</td>
<td>108</td>
<td>150</td>
<td>5.25</td>
<td>782</td>
</tr>
</tbody>
</table>

**E61.29 - Series EF61.29**

- Series EF61.29 - 29mm inner height
- Available at an even lower price without the pivoting function of the crossbars
- Crossbars removable from both sides
- Otherwise, technically the same as the E61.29 series.

More information ➤ www.igus.co.uk/EF61.29

---

Cost-effective - Series EF61.29

- Series EF61.29 - 29mm inner height
- Available at an even lower price without the pivoting function of the crossbars
- Crossbars removable from both sides
- Otherwise, technically the same as the E61.29 series.

More information ➤ www.igus.co.uk/EF61.29

---

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
E6.1 for cleanrooms

Cleanroom qualification of E6.1 e-chains®

By using a special material, the already low abrasion of the e-chain® can be reduced even further. In many applications where cumbersome special solutions are required, a simple standard e-chain® can be used instead. IPA tests confirm that standard igus® e-chains® meet cleanroom requirements. "Tested and certified as very good!" e-chains® for cleanroom applications demand very high wear resistance of moving parts in order to meet the normal requirements for such a sensitive environment.

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 = 0.5m/s, 1m/s, 2m/s.

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 = 0.5m/s, 1m/s, 2m/s.

System E6.1 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®

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 = 0.5m/s, 1m/s, 2m/s.

The results of the E61.29 series noise-measurement tests in the igus® test laboratory showed noise levels below the already very low values for the E6.29 series. 32dB(A) - level determined at the igus® test-lab, v = 1.0m/s unsupported, series E61.29.070.055.0.

Strain relief e.g. clamps, tie-wrap plates, nuggets, etc. ► From page 1300

Lean separators enable extremely fast cable filling in several layers

Openable mechanism, Series E61.29 is openable on left or right

KMA mounting brackets with attachment options from any side

Pivoting KMA mounting brackets - pivot angle corresponds to the bend radius

Aluminum and steel support tray for support of the lower run ► From page 1264

E6.1 for cleanrooms
E6.1 | Technical data | Overview

Technical data

- Speed gliding\(^{2}\)/ acceleration gliding\(^{1}\) upon request
- Speed \(FL_a\) / acceleration \(FL_a\) \(\leq 20 \text{ [m/s]} / \leq 200 \text{ [m/s}^2]\)
- Speed \(FL_b\) / acceleration \(FL_b\) \(\leq 3 \text{ [m/s]} / \leq 6 \text{ [m/s}^2]\)
- Material - permitted temperature °C, igumid G upon request
- Flammability class, igumid G VDE 0304 IIC UL94-HB

\(^{1}\) Gliding applications for long travels are available upon request, please consult igus®.

Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding (^{1})</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>EF61.29/E61.29</td>
<td>(\leq 3.50\text{m}) upon request</td>
<td>(\leq 25\text{m})</td>
<td>(\leq 2.0\text{m})</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E61.35</td>
<td>(\leq 3.80\text{m}) upon request</td>
<td>(\leq 30\text{m})</td>
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<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E61.40</td>
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<td></td>
</tr>
<tr>
<td>E61.52</td>
<td>(\leq 6.00\text{m}) upon request</td>
<td>(\leq 50\text{m})</td>
<td>(\leq 2.0\text{m})</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E61.62</td>
<td>(\leq 8.00\text{m}) upon request</td>
<td>(\leq 60\text{m})</td>
<td>(\leq 3.0\text{m})</td>
<td>upon request</td>
<td></td>
</tr>
<tr>
<td>E61.80</td>
<td>(\leq 10.0\text{m}) upon request</td>
<td>(\leq 60\text{m})</td>
<td>(\leq 4.0\text{m})</td>
<td>upon request</td>
<td></td>
</tr>
</tbody>
</table>

\(^{1}\) Gliding applications for long travels are available upon request, please consult igus®.

E6.1 | Options and order keys

Options with order keys | Examples based on series E61.52

- **Standard**
  - Simply turn outer side link, no additional rework

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>NC version</td>
</tr>
<tr>
<td>E61.52.100.R.0</td>
<td>E61.52.100.R.0.NC</td>
</tr>
</tbody>
</table>

- **Ready to ship** in 24 - 48hrs.
- **Ready to ship** in 24 - 48hrs.

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Order example | Order key and colour examples | Examples based on series E61.52

- **Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**
  - Please indicate e-chain® length or number of links: 1.0m or 34 links
  - E61.52.100.075.0
  - + Mounting brackets
  - KMA pivoting - 1 set
  - E61.520.100.12
  - Interior separation
  - with 2 separators assembled every 2\(^{nd}\) link
  - E61.52.100.12 + 2 x E6.521.1
  - Order text: 1 m E61.52.100.075.0 + E61.520.100.12 + 2 x E6.521.1

- **Order key**
  - Crossbars removable
  - E61.52.100.075.0
  - Order index for colour options

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard .0</td>
<td>Orange</td>
<td>Special .2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special .31</td>
<td>Yellow</td>
<td>Special .4</td>
</tr>
<tr>
<td>White</td>
<td>Special .1</td>
<td>Light grey</td>
<td>Special .14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special .1S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains® available from stock.
Above special colours upon request.

More information ➤ [www.igus.co.uk/E6.1](http://www.igus.co.uk/E6.1)

3D CAD, configurators, service life calculation and more ➤ [www.igus.co.uk/E6.1](http://www.igus.co.uk/E6.1)
E6.1 | Series EF61.29 · E61.29 | Product range
Dynamic, quiet, light, cleanroom suitable and easy to open

e-chains® | EF61.29 | Crossbars removable along the inner and outer radius
e-chains® | E61.29 | Crossbars removable along the inner and outer radius, from both sides

Available bend radii

Part No. crossbars removable
EF61.29, 030, R, 0 E61.29, 030, R, 0
EF61.29, 040, R, 0 E61.29, 040, R, 0
EF61.29, 050, R, 0 E61.29, 050, R, 0
EF61.29, 060, R, 0 E61.29, 060, R, 0
EF61.29, 070, R, 0 E61.29, 070, R, 0
EF61.29, 080, R, 0 E61.29, 080, R, 0

Part No. crossbars removable
EF61.29, 090, R, 0 E61.29, 090, R, 0
EF61.29, 100, R, 0 E61.29, 100, R, 0
EF61.29, 110, R, 0 E61.29, 110, R, 0
EF61.29, 120, R, 0 E61.29, 120, R, 0
EF61.29, 140, R, 0 E61.29, 140, R, 0

Available crossbars removable along inner and outer radius, from both sides

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>EF61.29</th>
<th>E61.29</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>44</td>
<td>0.558</td>
<td>0.588</td>
</tr>
<tr>
<td>40</td>
<td>54</td>
<td>0.580</td>
<td>0.580</td>
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<tr>
<td>50</td>
<td>64</td>
<td>0.603</td>
<td>0.603</td>
</tr>
<tr>
<td>60</td>
<td>74</td>
<td>0.630</td>
<td>0.630</td>
</tr>
<tr>
<td>70</td>
<td>84</td>
<td>0.667</td>
<td>0.667</td>
</tr>
<tr>
<td>80</td>
<td>94</td>
<td>0.692</td>
<td>0.692</td>
</tr>
</tbody>
</table>

Available at an even lower price without the pivoting function of the crossbars

EF61.29, 090, R, 0 / E61.29, 100, R, 0

Available to order in EF61.29, 090, R, 0 / E61.29, 100, R, 0

Series EF61.29 special feature: openable crossbars
Crosbars openable along inner and outer radius, from both sides

Assembly video available online at ➤ www.igus.co.uk/E61_assembly

Cost-effective - Series EF61.29
- Series EF61.29 - 29mm inner height
- Crossbars removable at both sides
- Otherwise, technically the same as the EF61.29 series

More information ➤ www.igus.co.uk/EF61.29

E6.1 | EF61.29-E61.29 | Installation dimensions
Unsupported applications | Short travels

If a gliding application is required for a long travel, please consult igus®.

The required clearance height: \( H = H + 40 \text{mm} \) (with 2.0kg/m fill weight)

<table>
<thead>
<tr>
<th>R (mm)</th>
<th>055</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>175</td>
<td>215</td>
<td>265</td>
<td>315</td>
<td>365</td>
</tr>
<tr>
<td>D</td>
<td>105.5</td>
<td>125.5</td>
<td>150.5</td>
<td>175.5</td>
<td>200.5</td>
</tr>
<tr>
<td>K</td>
<td>220</td>
<td>260</td>
<td>360</td>
<td>440</td>
<td>520</td>
</tr>
</tbody>
</table>

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ➤ From page 1270

More information ➤ www.igus.co.uk/E61.29
KMA pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>30</td>
<td>E61.290.030.12</td>
<td>40</td>
<td>89.5</td>
<td>80</td>
</tr>
<tr>
<td>50</td>
<td>E61.290.040.12</td>
<td>60</td>
<td>89.5</td>
<td>60</td>
</tr>
<tr>
<td>70</td>
<td>E61.290.060.12</td>
<td>80</td>
<td>89.5</td>
<td>70</td>
</tr>
<tr>
<td>90</td>
<td>E61.290.080.12</td>
<td>100</td>
<td>109.5</td>
<td>90</td>
</tr>
</tbody>
</table>

KMA = polymer metal mounting bracket. KMA mounting brackets are only available for an uneven number of links.

Strain relief e.g. clamps, tiewraps, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Order example E61.290.050.12.A

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator easy to assemble without any screws Part No. E6.29.02.Z. More information ► From page 1326

More information ► www.igus.co.uk/E61.29 | www.igus.co.uk/E61.29
Lean separators

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

Cleanroom suitable E6.1 series as harnessed readychain® system for a semiconductor industry
Installation note - system E6.1
Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/E61_assembly

e-chains® | Series E61.35 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E61.35 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.35, 030.R,0</td>
<td>30</td>
<td>46</td>
<td>≈0.653</td>
</tr>
<tr>
<td>E61.35, 040,R,0</td>
<td>40</td>
<td>56</td>
<td>≈0.675</td>
</tr>
<tr>
<td>E61.35, 050,R,0</td>
<td>50</td>
<td>66</td>
<td>≈0.696</td>
</tr>
<tr>
<td>E61.35, 060,R,0</td>
<td>60</td>
<td>76</td>
<td>≈0.718</td>
</tr>
<tr>
<td>E61.35, 070,R,0</td>
<td>70</td>
<td>86</td>
<td>≈0.739</td>
</tr>
<tr>
<td>E61.35, 080,R,0</td>
<td>80</td>
<td>96</td>
<td>≈0.761</td>
</tr>
</tbody>
</table>

Available bend radii

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>055</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Part No. with required radius (R). Example: E61.35.100,100.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Unsupported applications | Short travels

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

More information ► www.igus.co.uk/E61.35
**KMA mounting brackets** are only available for an uneven number of links.

---

### KMA pivoting

<table>
<thead>
<tr>
<th>Width index</th>
<th>KMA pivoting Part No.</th>
<th>Width [mm]</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>Bi [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>000</td>
<td>E61.350.000.12</td>
<td>40</td>
<td>56</td>
<td>24</td>
<td>12</td>
</tr>
<tr>
<td>000</td>
<td>E61.350.010.000.12</td>
<td>50</td>
<td>66</td>
<td>36</td>
<td>18</td>
</tr>
<tr>
<td>000</td>
<td>E61.350.020.000.12</td>
<td>60</td>
<td>72</td>
<td>48</td>
<td>24</td>
</tr>
<tr>
<td>000</td>
<td>E61.350.030.000.12</td>
<td>70</td>
<td>82</td>
<td>60</td>
<td>30</td>
</tr>
<tr>
<td>000</td>
<td>E61.350.040.000.12</td>
<td>80</td>
<td>92</td>
<td>72</td>
<td>40</td>
</tr>
</tbody>
</table>

**Order example**

- **E61.350.100.12.A**
- **Part No. full set**
- **Width [mm]**
- **A [mm]**
- **B [mm]**
- **Bi [mm]**

**KMA pivoting**

- **Full fit**
- **Partial shelf**
- **Universal shelf**

---

### Strain relief

- **e.g. clamps, tie wraps, plates, nuts and plug-in clips**
- **Available from stock**
- **Complete **chainfix** range with ordering options**

---

**Series E61.35 | Accessories**

**Recommended for unsupported applications**

- **KMA pivotings**
- **Part No. full set**

---

**Notes:**

- **Please be aware of the minimum lateral gap to the side links!**
- **E6.35.1/E6.35.2 = 1mm | E6.35.5 = 13mm**

---

**Recommended for side-mounted applications.**

**For even faster installation**

- **Wide on one side for high holding force, narrow on opposite side for easy cable fitting.**

---

**Horizontal separation**

- **Full-width shelf locks securely into separators at both ends,**
  giving a fixed width. Can be used as full-width or partial shelf.

---

**Separator with integrated strain relief teeth**

- **Can be integrated into the mounting bracket or placed at any point in the e-chain®**
- **Combines strain relief and interior separation, for restricted space conditions**
- **Separator is easy to assemble without any screws**

**Part No. E6.35.02.Z. More information**
e-chains® | Series E61.40 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E61.40 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.40.040 R.0</td>
<td>40</td>
<td>56</td>
<td>0.913</td>
</tr>
<tr>
<td>E61.40.050 R.0</td>
<td>50</td>
<td>66</td>
<td>0.936</td>
</tr>
<tr>
<td>E61.40.052 R.0</td>
<td>52</td>
<td>68</td>
<td>0.967</td>
</tr>
<tr>
<td>E61.40.062 R.0</td>
<td>62</td>
<td>78</td>
<td>0.994</td>
</tr>
<tr>
<td>E61.40.070 R.0</td>
<td>70</td>
<td>86</td>
<td>1.023</td>
</tr>
<tr>
<td>E61.40.075 R.0</td>
<td>75</td>
<td>91</td>
<td>1.042</td>
</tr>
<tr>
<td>E61.40.087 R.0</td>
<td>87</td>
<td>103</td>
<td>1.086</td>
</tr>
<tr>
<td>E61.40.100 R.0</td>
<td>100</td>
<td>116</td>
<td>1.134</td>
</tr>
</tbody>
</table>

Part No.  | Bi [mm] | Ba [mm] | E61.40 [kg/m] |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E61.40.125 R.0</td>
<td>125</td>
<td>141</td>
<td>1.226</td>
</tr>
<tr>
<td>E61.40.150 R.0</td>
<td>150</td>
<td>166</td>
<td>1.318</td>
</tr>
<tr>
<td>E61.40.175 R.0</td>
<td>175</td>
<td>191</td>
<td>1.410</td>
</tr>
<tr>
<td>E61.40.200 R.0</td>
<td>200</td>
<td>216</td>
<td>1.502</td>
</tr>
<tr>
<td>E61.40.225 R.0</td>
<td>225</td>
<td>241</td>
<td>1.596</td>
</tr>
<tr>
<td>E61.40.250 R.0</td>
<td>250</td>
<td>266</td>
<td>1.687</td>
</tr>
<tr>
<td>E61.40.275 R.0</td>
<td>275</td>
<td>291</td>
<td>1.779</td>
</tr>
<tr>
<td>E61.40.300 R.0</td>
<td>300</td>
<td>316</td>
<td>1.871</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Available bend radii

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175*</th>
<th>200</th>
</tr>
</thead>
</table>

Complete Part No. with required radius (R). Example: E61.40.100.100.0

Installation note - system E6.1
Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/E61_assembly

E61.40  | Series E61.40  | Product range
Dynamic, quiet, light and cleanroom suitable

E61.40  | Series E61.40  | Installation dimensions
Unsupported applications | Short travels

Un-supported length B = H - K
K = (H - F) / 2
F = H + 40
H = D + 40

The required clearance height: H = H + 40 [mm] (with 2.0 kg/m fill weight)
*Radius available upon request. Please consult igus® for delivery time.

If a gliding application is required for a long travel, please consult igus®.

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through
More information ► From page 1270

www.igus.co.uk/E6.1
www.igus.co.uk/E61.40
KMA pivoting | Recommended for unsupported applications

<table>
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<tr>
<th>Width</th>
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KMA = polymer metal mounting bracket. For the C-profile option please add index A4. KMA mounting brackets are only available for an uneven number of links.

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainflex range with ordering options ➤ From page 1300
No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!

Lean separators
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

(*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

Very small bend radii are possible with chainflex® CF98 control cable in this E6.1 readychain® system. It offers smooth operation and is suitable for cleanrooms.
e-chains® | Series E61.52 | Crossbars removable along the inner and outer radius

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*Radius available upon request. Please consult igus® for delivery time.

Available bend radii

- R (mm) | 075 | 100 | 125 | 150 | 175 | 200 |
- E61.52.100,100,0

Installation note - system E6.1

Open by removing the crossbar with a screwdriver.
Repeat the procedure on the other side.
Assembly video available online at ➤ www.igus.co.uk/E61_assembly

Steel support tray for support of the lower run

- Simple one-piece support trays for the lower run
- To your requirements and specification
- 3 options available

More information ➤ From page 1264
KMA pivoting | Recommended for unsupported applications

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KMA pivoting | Recommended for unsupported applications

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KMA = polymer metal mounting bracket. For the C-profile option please add index A. KMA mounting brackets are only available for an uneven number of links.

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainflex range with ordering options ➤ From page 1300
e-chains® | Series E61.52 | Crossbars removable along the inner and outer radius

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*Radius available upon request. Please consult igus® for delivery time.

Available bend radii

R [mm] | 115 | 150* | 200* | 250* | 300* | 350* |
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</table>

The required clearance height: H_r = H + 80mm (with 2.0kg/m fill weight)

*Radius available upon request. Please consult igus® for delivery time.

If a gliding application is required for a long travel, please consult igus®.

Installation note - system E6.1

Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.

Assembly video available online at  www.igus.co.uk/E61_assembly

Steel support tray for support of the lower run

- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

More information ➤ From page 1264
KMA pivoting | Recommended for unsupported applications

<table>
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KMA = polymer metal mounting bracket. For the C-profile option please add index C. KMA mounting brackets are only available for an uneven number of links.

Order example

E61.620.100.12.C Order example A: To indicate option with brackets pre-fitted C-profile option

Width Index

Series

Strain relief e.g., clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/E61.62
e-chains® | Series E61.80 | Crossbars removable along the inner and outer radius

Part No. | Bi (mm) | Ba (mm) | E61.80 (kg/m)
--- | --- | --- | ---
E61.80.05. R0 | 50 | 100 | 2.058
E61.80.06. R0 | 65 | 115 | 2.797
E61.80.07. R0 | 75 | 125 | 3.028
E61.80.08. R0 | 87 | 137 | 3.099
E61.80.10. R0 | 100 | 150 | 3.150
E61.80.11. R0 | 112 | 162 | 3.239
E61.80.12. R0 | 125 | 175 | 3.272
E61.80.13. R0 | 137 | 187 | 3.301
E61.80.15. R0 | 150 | 200 | 3.394
E61.80.16. R0 | 162 | 212 | 3.453
E61.80.17. R0 | 175 | 225 | 3.516
E61.80.18. R0 | 187 | 237 | 3.575
E61.80.20. R0 | 200 | 250 | 3.658
E61.80.21. R0 | 212 | 262 | 3.697
E61.80.22. R0 | 225 | 275 | 3.760
E61.80.23. R0 | 237 | 287 | 3.819
E61.80.25. R0 | 250 | 300 | 3.862
E61.80.26. R0 | 262 | 312 | 3.941
E61.80.27. R0 | 275 | 325 | 4.004
E61.80.28. R0 | 287 | 337 | 4.063
E61.80.30. R0 | 300 | 350 | 4.127

Part No. | Bi (mm) | Ba (mm) | E61.80 (kg/m)
--- | --- | --- | ---
E61.80.31. R0 | 312 | 362 | 4.185
E61.80.32. R0 | 325 | 375 | 4.249
E61.80.33. R0 | 337 | 387 | 4.302
E61.80.35. R0 | 350 | 400 | 4.371
E61.80.36. R0 | 362 | 412 | 4.429
E61.80.37. R0 | 375 | 425 | 4.483
E61.80.38. R0 | 387 | 437 | 4.551
E61.80.40. R0 | 400 | 450 | 4.615
E61.80.41. R0 | 412 | 462 | 4.673
E61.80.42. R0 | 425 | 475 | 4.732
E61.80.43. R0 | 437 | 487 | 4.792
E61.80.45. R0 | 450 | 500 | 4.847
E61.80.46. R0 | 462 | 512 | 4.902
E61.80.47. R0 | 475 | 525 | 4.962
E61.80.48. R0 | 487 | 537 | 5.027
E61.80.50. R0 | 500 | 550 | 5.087
E61.80.51. R0 | 512 | 562 | 5.147
E61.80.52. R0 | 525 | 575 | 5.207
E61.80.53. R0 | 537 | 587 | 5.267
E61.80.55. R0 | 550 | 600 | 5.327
E61.80.60. R0 | 600 | 650 | 5.557

*Radius available upon request. Please consult igus® for delivery time.

Available bend radii

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<tr>
<th>R (mm)</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
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Complete Part No. with required radius (R). Example: E61.80.100,150.0

Installation note - system E6.1

Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.

Assembly video available online at www.igus.co.uk/E61_assembly

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E61.80
E61.80 | Series E61.80 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting

**KMA pivoting | Recommended for unsupported applications**

|-------------|------------------|--------|--------|------|-------------|------------------|--------|--------|------|

KMA = polymer metal mounting bracket. For the C-profile option please add index A. KMA mounting brackets are only available for an uneven number of links.

---

**E61.80.100.12.C/A2 Order example**

A1 to indicate option with brackets for pre-fixing

C-profile option

Full set

Width (mm)

Series

---

E61.80.100.10.12.C/A2

---

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

---

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E61.80
Lean separators

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

(*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)
Advantages of the E6 system:

- For very high speeds and accelerations
- For small bend radii
- High strength
- Available as closed e-tube for some sizes
- Low-noise 37dB(A)\(^1\) - extremely low noise and vibration
- Cleanroom ISO Class 1\(^2\) - virtually no wear or abrasion

1) Extremely low noise - tested at the igus® lab
2) Cleanroom - series E6.29.060.150.0.CR

When to use another e-chain® series:

- With only limited suitability for side-mounted applications
  - E4.1L, page 524 → E2/000, page 360
- When a Reverse Bend Radius (RBR) is required
  - E4.1L, page 524 → E2/000, page 360
- For longer unsupported lengths
  - E4.1L, page 524 → E2/000, page 360
- For long travels
  - E4.1, page 566 → E2/000, page 360
- For even less vibration and noise or even greater dynamics
  - E6.1, page 750
**Extremely low noise, vibration and abrasion, cleanroom suitable - system E6**

The E6 series offers numerous advantages in addition to long life. It provides extremely quiet, low vibration operation, complimenting low vibration linear drives. It minimises 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 product range offers the right e-chain size for any application; a wide range of interior separation is also available.

1) Extremely low noise - tested at the igus test lab. 2) Cleanroom - series E6.29.060.150.0.CR

**Typical industries and applications**
- Cleanroom
- Stage and theatre technology
- Printing machines
- Automation
- Machine tools
- Measuring machines
- Semiconductor industry
- Medical industry
- Electronic industry
- General machinery

**E6 e-chains**
- Crossbars removable along the inner and outer radius - standard

**R6 e-tubes**
- Fully enclosed - lids removable along the inner and outer radius

**IPA Qualification Certificate**
- Report IG 0704-400:
  - ISO Class 1, according to DIN EN ISO 14644-1 for system E6, series E6.29.060.150.0.CR at v = 0.5m/s, 2m/s
  - 37dB(A)\(^1\) - value determined at the igus® test lab, v = 1.0m/s unsupported, series E6.29.080.075.0

**E6 system - extremely quiet operation**

Study by the Laboratorium für Werkzeugmaschinen und Betriebstheorie (WZL) of the RWTH Aachen, Germany, on "Vibration tests on energy supply chains". Results: the "E6" energy supply system made by igus® GmbH, Cologne, is characterised by extremely low vibration and smooth operation.

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**Selection table**

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<th>Outer width</th>
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<td>30 - 140</td>
<td>50 - 160</td>
<td>42</td>
<td>055 - 150</td>
<td>1.90</td>
<td>802</td>
</tr>
<tr>
<td>E6.40</td>
<td>40</td>
<td>40 - 300</td>
<td>60 - 320</td>
<td>54</td>
<td>063 - 200</td>
<td>2.50</td>
<td>806</td>
</tr>
<tr>
<td>E6.52</td>
<td>52</td>
<td>40 - 300</td>
<td>64 - 324</td>
<td>65</td>
<td>075 - 250</td>
<td>3.00</td>
<td>812</td>
</tr>
<tr>
<td>E6.62</td>
<td>62</td>
<td>50 - 400</td>
<td>86 - 436</td>
<td>84</td>
<td>115 - 350</td>
<td>4.00</td>
<td>818</td>
</tr>
<tr>
<td>E6.80L</td>
<td>80</td>
<td>87 - 550</td>
<td>115 - 578</td>
<td>108</td>
<td>150 - 300</td>
<td>2.50</td>
<td>822</td>
</tr>
<tr>
<td>E6.80</td>
<td>80</td>
<td>50 - 600</td>
<td>100 - 650</td>
<td>108</td>
<td>150 - 450</td>
<td>5.25</td>
<td>828</td>
</tr>
</tbody>
</table>

\(1\) Extremely low noise - tested at the igus® lab

*Radius available upon request. Please consult igus® for delivery time.

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

**3D CAD, configurators, service life calculation and more**

explore the benefits [www.igus.co.uk/best/E6](http://www.igus.co.uk/best/E6)

---

**Variant:**
- Available as closed e-tube for some sizes
Suitability of E6 e-chains® for cleanrooms - almost no wear or abrasion

By using a special material, the already low abrasion of the e-chain® can be reduced even further. In many applications where cumbersome special solutions are required, a simple e-chain® can be used instead. A comprehensive test programme was devised and performed for both gliding and unsupported use. For many applications, the e-chains® in special materials are virtually abrasion-free. IPA tests confirm that standard igus® e-chains® meet cleanroom requirements.

IPA Qualification Certificate - Report IG 0704-400:
- Special material “cleanroom” - ISO Class 1, according to DIN EN ISO 14644-1 for series E6.29.060.150.0.CR at v = 0.5m/s, 2.0m/s
- Standard material - ISO Class 3, according to DIN EN ISO 14644-1 for series E6.29.060.150.0 at v = 0.5m/s, 2.0m/s and series E6.29.050.055.0 with fitted cables CF34.15.04, CF9.05.12, CF11.02.01.02.PBA.LC.D

E6 e-chains® in low-noise areas - from 37dB(A)

Selected noise tests - external noise corrected measurement values

<table>
<thead>
<tr>
<th>e-chains® series</th>
<th>Test speed and test method</th>
<th>Averaging of the corrected sound pressure levels</th>
</tr>
</thead>
<tbody>
<tr>
<td>igus® Series E6.29®</td>
<td>v = 1.0m/s unsupported</td>
<td>≥ 37 dB(A)</td>
</tr>
<tr>
<td>igus® series E6.52®</td>
<td>v = 0.5m/s side mounted unsupported</td>
<td>≥ 41 dB(A)</td>
</tr>
<tr>
<td>igus® series E6.52</td>
<td>v = 2.0m/s unsupported</td>
<td>≥ 46 dB(A)</td>
</tr>
<tr>
<td>Chain 1 third-party product</td>
<td>v = 2.0m/s unsupported</td>
<td>≥ 77 dB(A)</td>
</tr>
<tr>
<td>Chain 2 third-party product</td>
<td>v = 2.0m/s unsupported</td>
<td>≥ 68 dB(A)</td>
</tr>
<tr>
<td>Chain 3 third-party product</td>
<td>v = 2.0m/s unsupported</td>
<td>≥ 73 dB(A)</td>
</tr>
</tbody>
</table>

Source: TÜV Rheinland *Source: igus® investigations

Noise level ≤ 37dB(A) - A measurement conducted by the Rheinland Technical Inspection Authority (TÜV Rheinland) in May 2002 indicates a value of ≤ 37dB(A) at 2m/s and with an unsupported length of 1.5m with series E6.52.100.100.0, and all this with at least 10dB(A) sound pressure level generated by external noise.

We have received an official noise certificate from the Rheinland Technical Inspection Authority (TÜV Rheinland Berlin Brandenburg) and we are happy to provide you with a copy upon request. A measurement carried out in the igus® laboratory resulted in a value of 37dB(A) at 1m/s for the series E6.29.080.075.0 (unsupported length)
### Technical data

| Speed gliding\(^1\)/ acceleration gliding\(^1\) | upon request |
| Speed FL\(_{10}\)/ acceleration FL\(_{10}\) | \(\leq 20 \text{ [m/s]} / \leq 200 \text{ [m/s}\(^2\)]\) |
| Speed FL\(_{9}\)/ acceleration FL\(_{9}\) | \(\leq 3 \text{ [m/s]} / \leq 6 \text{ [m/s}\(^2\)]\) |
| Material - permitted temperature °C, igumid G | upon request |
| Flammability class, igumid G | VDE 0304 IIC UL94-HB |

\(^1\) Gliding applications for long travels are available upon request, please consult igus®.

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Gliding(^1)</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.29 / R6.29</td>
<td>(\leq 3.50 \text{m})</td>
<td>upon request</td>
<td>(\leq 30 \text{m})</td>
<td>(\leq 2.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.35</td>
<td>(\leq 3.80 \text{m})</td>
<td>upon request</td>
<td>(\leq 30 \text{m})</td>
<td>(\leq 2.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.40 / R6.40</td>
<td>(\leq 5.00 \text{m})</td>
<td>upon request</td>
<td>(\leq 30 \text{m})</td>
<td>(\leq 2.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.52 / R6.52</td>
<td>(\leq 6.00 \text{m})</td>
<td>upon request</td>
<td>(\leq 50 \text{m})</td>
<td>(\leq 2.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.62</td>
<td>(\leq 8.00 \text{m})</td>
<td>upon request</td>
<td>(\leq 60 \text{m})</td>
<td>(\leq 3.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.80L</td>
<td>(\leq 5.00 \text{m})</td>
<td>upon request</td>
<td>(\leq 60 \text{m})</td>
<td>(\leq 4.0 \text{m})</td>
<td>upon request</td>
</tr>
<tr>
<td>E6.80</td>
<td>(\leq 10.5 \text{m})</td>
<td>upon request</td>
<td>(\leq 60 \text{m})</td>
<td>(\leq 4.0 \text{m})</td>
<td>upon request</td>
</tr>
</tbody>
</table>

\(^1\) Gliding applications for long travels are available upon request, please consult igus®.

### Options with order keys

**Options with order key | Examples based on series E6.52**

**Order example | Order key and colour examples | Examples based on series E6.52**

**Order example for complete e-chain\(^\circ\) (1.0m), colour black, with mounting brackets and interior separation:**

- e-chain\(^\circ\) (1.0m) Please indicate e-chain\(^\circ\) length or number of links: 1.0m or 34 links
- E6.52.100,075.0
- + Mounting brackets KMA pivoting - 1 set
- E6.520.100.12
- Interior separation with 2 separators assembled every 2\(^{nd}\) link
- 2 x 38222
- Order text: 1 m E6.52.100,075.0 + E6.520.100.12 + 2 x 38222

**Order key**

- e-chains
- e-tubes
- E6.52.100,075.0
- E6.520.100,075.0

**Order index for colour options**

<table>
<thead>
<tr>
<th>Colour</th>
<th>Order index</th>
<th>Colour</th>
<th>Order index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>Standard .0</td>
<td>Orange</td>
<td>Special colour .2</td>
</tr>
<tr>
<td>Silver-grey</td>
<td>Special colour .1</td>
<td>Yellow</td>
<td>Special colour .4</td>
</tr>
<tr>
<td>White</td>
<td>Special colour .1</td>
<td>Light grey</td>
<td>Special colour .14</td>
</tr>
<tr>
<td>Grey-white</td>
<td>Special colour .1S</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Black e-chains\(^\circ\) available from stock.

Above special colours upon request.
**E6 | Series E6.29-R6.29 | Product range**

Extremely low noise and vibration

**e-chains® | Series E6.29**

Crossbars removable along the inner and outer radius

Lids removable along the inner and outer radius

**e-tubes | Series R6.29**

Part No. | Part No. | Bi | Ba | E6.29 | R6.29 | E6.29 | R6.29
---|---|---|---|---|---|---|---
E6.29.030, R.0 | R6.29.030, R.0 | 30 | 46 | 0.79 | 0.60
E6.29.040, R.0 | R6.29.040, R.0 | 40 | 56 | 0.75 | 0.55
E6.29.050, R.0 | R6.29.050, R.0 | 50 | 66 | 0.78 | 0.69
E6.29.060, R.0 | R6.29.060, R.0 | 60 | 76 | 0.80 | 0.94
E6.29.070, R.0 | R6.29.070, R.0 | 70 | 86 | 0.83 | 0.97
E6.29.080, R.0 | R6.29.080, R.0 | 80 | 96 | 0.86 | 1.03

*Width available upon request. Please consult igus® for delivery time.

Available bend radii

R [mm] | 055 | 075 | 100 | 150
---|---|---|---|---
Part No. | Complete Part No. with required radius (R). Example:
E6.29.080,100.0 = e-chain® / R6.29.080,100.0 = e-tube

**Installation note - system E6**

Open by removing the crossbar with a screwdriver.

Repeat the procedure on the other side.

Assembly video available online at www.igus.co.uk/E6_assembly

**E6 | Series 6.29-R6.29 | Installation dimensions**

Unsupported applications | Short travels

Aluminium support tray

- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing slide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ▶ From page 1270

If a gliding application is required for a long travel, please consult igus®.

The required clearance height: $H_p = H + 40\text{mm}$ (with 2.0kg/m fill weight)

**3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/E6**

796  ▶ www.igus.co.uk/E6.29 ▶ www.igus.co.uk/R6.29  
797  ▶ www.igus.co.uk/E6
KMA pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>060.</td>
<td>E6.290. R6.290. 060.12</td>
<td>60</td>
<td>50</td>
</tr>
<tr>
<td>070.</td>
<td>E6.290. R6.290. 070.12</td>
<td>70</td>
<td>60</td>
</tr>
<tr>
<td>080.</td>
<td>E6.290. R6.290. 080.12</td>
<td>80</td>
<td>70</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time.

KMA pivoting

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted please add Index „A“

Order example

E6.290.060.12.A

Full set

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
</tr>
<tr>
<td>025</td>
<td>2300.025</td>
<td>2310.025</td>
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<tr>
<td>030</td>
<td>2300.030</td>
<td>2310.030</td>
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<tr>
<td>038</td>
<td>2300.038</td>
<td>2310.038</td>
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<td>040</td>
<td>2300.040</td>
<td>2310.040</td>
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<tr>
<td>050</td>
<td>2300.050</td>
<td>2310.050</td>
</tr>
<tr>
<td>057</td>
<td>2300.057</td>
<td>2310.057</td>
</tr>
</tbody>
</table>

Separators with integrated strain relief teeth

- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. E6.29.02.Z. More information ► From page 1326
Note: Please be aware of the minimum lateral gap to the side links! e-tubes: 10mm
As standard separators are fitted every 2nd e-chain® link!

Separator for e-tubes
Notches on the separator indicate the clamping side of the separator. The notches on this separator mark the side that fixes to the lid.

Separator with integrated strain relief teeth
- Can be integrated into the mounting bracket or placed at any point in the e-chain®
- Combines strain relief and interior separation, for restricted space conditions
- Strain relief separator is easy to assemble without any screws

Part No. R6.29.02.Z. More information ► From page 1326

Lean separators*
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

(*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

Long travel length with side-mounted orientation using the low noise and vibration series E6 for a camera application

www.igus.co.uk/E6.29 | www.igus.co.uk/R6.29
### e-chains® | Series E6.35 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.35 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.35. 030, R, 0</td>
<td>30</td>
<td>50</td>
<td>0.88</td>
</tr>
<tr>
<td>E6.35. 040, R, 0</td>
<td>40</td>
<td>60</td>
<td>0.90</td>
</tr>
<tr>
<td>E6.35. 050, R, 0</td>
<td>50</td>
<td>70</td>
<td>0.92</td>
</tr>
<tr>
<td>E6.35. 060, R, 0</td>
<td>60</td>
<td>80</td>
<td>0.94</td>
</tr>
<tr>
<td>E6.35. 070, R, 0</td>
<td>70</td>
<td>90</td>
<td>0.96</td>
</tr>
<tr>
<td>E6.35. 080, R, 0</td>
<td>80</td>
<td>100</td>
<td>0.99</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>E6.35 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.35. 090, R, 0</td>
<td>90</td>
<td>110</td>
<td>1.01</td>
</tr>
<tr>
<td>E6.35. 100, R, 0</td>
<td>100</td>
<td>120</td>
<td>1.03</td>
</tr>
<tr>
<td>E6.35. 110, R, 0</td>
<td>110</td>
<td>130</td>
<td>1.05</td>
</tr>
<tr>
<td>E6.35. 120, R, 0</td>
<td>120</td>
<td>140</td>
<td>1.07</td>
</tr>
<tr>
<td>E6.35. 140, R, 0</td>
<td>140</td>
<td>160</td>
<td>1.11</td>
</tr>
</tbody>
</table>

### Installation note - system E6

Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.

Assembly video available online at [www.igus.co.uk/E6_assembly](http://www.igus.co.uk/E6_assembly)

---

### Unsupported applications | Short travels

#### Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through

More information ► From page 1270

---

### Installation dimensions

Unsupported length FL<sub>G</sub> - FL<sub>B</sub> [m]

<table>
<thead>
<tr>
<th>FL&lt;sub&gt;G&lt;/sub&gt; [m]</th>
<th>FL&lt;sub&gt;B&lt;/sub&gt; [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1.5</td>
<td>1.5</td>
</tr>
<tr>
<td>2.0</td>
<td>2.0</td>
</tr>
<tr>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>

### Part No. e-chains® length

<table>
<thead>
<tr>
<th>Part No.</th>
<th>e-chains® length</th>
</tr>
</thead>
<tbody>
<tr>
<td>E6.35. 030, R, 0</td>
<td>30</td>
</tr>
<tr>
<td>E6.35. 040, R, 0</td>
<td>40</td>
</tr>
<tr>
<td>E6.35. 050, R, 0</td>
<td>50</td>
</tr>
<tr>
<td>E6.35. 060, R, 0</td>
<td>60</td>
</tr>
<tr>
<td>E6.35. 070, R, 0</td>
<td>70</td>
</tr>
<tr>
<td>E6.35. 080, R, 0</td>
<td>80</td>
</tr>
</tbody>
</table>

For delivery time, please consult igus®.
E6 | Series E6.35 | Accessories
KMA mounting brackets | Attachment from any side | Pivoting

Moving end
E6.350 ... 2

Fixed end
E6.350 ... 1

Front view of KMA

KMA pivoting | Recommended for unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
<th>Bi</th>
</tr>
</thead>
<tbody>
<tr>
<td>050.</td>
<td>E6.350. 050.12</td>
<td>72</td>
<td>84</td>
<td>60</td>
</tr>
<tr>
<td>060.</td>
<td>E6.350. 060.12</td>
<td>72</td>
<td>84</td>
<td>60</td>
</tr>
<tr>
<td>070.</td>
<td>E6.350. 070.12</td>
<td>82</td>
<td>94</td>
<td>70</td>
</tr>
<tr>
<td>080.</td>
<td>E6.350. 080.12</td>
<td>92</td>
<td>104</td>
<td>80</td>
</tr>
</tbody>
</table>

KMA pivoting angle corresponds to the radius!

The bracket orientations are set automatically when using an igus® KMA mounting bracket. To receive KMA pre-fitted please add index .A

Order example
E6.350...100.12.A = To indicate option with brackets pre-fitted

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

E6 | Series E6.35 | Accessories
Interior separation | Increase cable service life

Previous generation of interior separation with other options ► www.igus.co.uk/E6.35

As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

<table>
<thead>
<tr>
<th>Width X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
<td>015</td>
<td>2300.015</td>
<td>2310.015</td>
</tr>
<tr>
<td>025</td>
<td>2300.025</td>
<td>2310.025</td>
</tr>
<tr>
<td>030</td>
<td>2300.030</td>
<td>2310.030</td>
</tr>
<tr>
<td>035</td>
<td>2300.035</td>
<td>2310.035</td>
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<td>040</td>
<td>2300.040</td>
<td>2310.040</td>
</tr>
<tr>
<td>050</td>
<td>2300.050</td>
<td>2310.050</td>
</tr>
<tr>
<td>057</td>
<td>2300.057</td>
<td>2310.057</td>
</tr>
</tbody>
</table>

Separator with integrated strain relief teeth
Can be integrated into the mounting bracket or placed at any point in the e-chain®
Combines strain relief and interior separation, for restricted space conditions
Strain relief separator is easy to assemble without any screws

Part No. E6.35.02.Z. More information ► From page 1326

www.igus.co.uk/E6.35
e-tubes
Part No. | Bi [mm] | Ba [mm] | EI [kg/m] | EL [kg/m]
--- | --- | --- | --- | ---
R6.40 | 0.40, R | 40 | 60 | 1.29
R6.40 | 0.50, R | 50 | 70 | 1.33
R6.40 | 0.62, R | 62 | 82 | 1.38
R6.40 | 0.70, R | 70 | 90 | 1.41
R6.40 | 0.87, R | 87 | 107 | 1.48
R6.40 | 1.00, R | 100 | 120 | 1.53

Part No. | Part No. | Bi [mm] | Ba [mm] | EI [kg/m] | EL [kg/m]
--- | --- | --- | --- | --- | ---
R6.40 | 0.40, R | 40 | 60 | 1.29
R6.40 | 0.50, R | 50 | 70 | 1.33
R6.40 | 0.62, R | 62 | 82 | 1.38
R6.40 | 0.70, R | 70 | 90 | 1.41
R6.40 | 0.87, R | 87 | 107 | 1.48
R6.40 | 1.00, R | 100 | 120 | 1.53

e-chains®
Part No. | Bi [mm] | Ba [mm] | EI [kg/m] | EL [kg/m]
--- | --- | --- | --- | ---
R6.40 | 0.40, R | 40 | 60 | 1.29
R6.40 | 0.50, R | 50 | 70 | 1.33
R6.40 | 0.62, R | 62 | 82 | 1.38
R6.40 | 0.70, R | 70 | 90 | 1.41
R6.40 | 0.87, R | 87 | 107 | 1.48
R6.40 | 1.00, R | 100 | 120 | 1.53

Crossbars removable along the inner and outer radius
Lids removable along the inner and outer radius

Installation note - system E6
Open by removing the crossbar with a screwdriver.
Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/E6_assembly

Unsupported applications | Short travels

If a gliding application is required for a long travel, please consult igus®.

Aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width
- Noise-reducing glide step integrated as standard
- Easy installation and connection of the e-chain®
- Open design - dirt and debris fall through
More information ► From page 1270
KMA pivoting | Recommended for unsupported applications

<table>
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<tr>
<th>Width index</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
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</table>

(KMA = polymer metal mounting bracket). For the C-profile option please add index C.

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

E6.40 E6.40-R6.40 Accessories
KMA mounting brackets | Attachment from any side | Pivoting

Moving end E6./R6. 400 ... 2
Fixed end E6./R6. 400 ... 1
Front view of KMA

No lateral gap to side links necessary.
As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Separator with integrated strain relief teeth
*Can be integrated into the mounting bracket or placed at any point in the e-chain®.
*Combines strain relief and interior separation, for restricted space conditions.
*Strain relief separator is easy to assemble without any screws.

E6.40.10.12.CA2 Order example A2 to indicate option with brackets pre-fitted C-profile option Full set Width index Series

More information ▶ www.igus.co.uk/E6.40 ▶ www.igus.co.uk/R6.40
Note: Please be aware of the minimum lateral gap to the side links! e-tubes: 20mm
As standard separators are fitted every 2” e-chain® link!

Separator for e-tubes
Notches on the separator indicate the clamping side of the separator. The notches on this separator mark the side that fixes to the lid.

Full-width shelf for e-tubes
This option is for applications with many small cables with similar diameters. Full-width shelf for full width separation.

<table>
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<tr>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
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<td>110.60</td>
<td>110.60</td>
<td>110.100</td>
</tr>
</tbody>
</table>

Full-width shelves
Width = X [mm]

Lean separators*
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

*Only for e-chain®
e-chains® | Series E6.52
Crossbars removable along the inner and outer radius
Lids removable along the inner and outer radius

Part No. | Part No. | Bi [mm] | Ba [mm] | E6.52 [kg/m] | R6.52 [kg/m]
--- | --- | --- | --- | --- | ---
E6.52, 040, R, 0 | R6.52, 040, R, 0 | 40 | 64 | 1.76 | 1.78
E6.52, 050, R, 0 | R6.52, 050, R, 0 | 50 | 74 | 1.80 | 1.89
E6.52, 052, R, 0 | R6.52, 052, R, 0 | 50 | 74 | 1.80 | 1.89
E6.52, 062, R, 0 | R6.52, 062, R, 0 | 62 | 86 | 1.84 | 1.97
E6.52, 070, R, 0 | R6.52, 070, R, 0 | 70 | 94 | 1.87 | 2.07
E6.52, 075, R, 0 | R6.52, 075, R, 0 | 75 | 99 | 1.89 | 2.12
E6.52, 087, R, 0 | R6.52, 087, R, 0 | 87 | 111 | 1.94 | 2.21
E6.52, 100, R, 0 | R6.52, 100, R, 0 | 100 | 124 | 1.98 | 2.35

Part No. | Part No. | Bi [mm] | Ba [mm] | E6.52 [kg/m] | R6.52 [kg/m]
--- | --- | --- | --- | --- | ---
E6.52, 125, R, 0 | R6.52, 125, R, 0 | 125 | 149 | 2.07 | 2.57
E6.52, 150, R, 0 | R6.52, 150, R, 0 | 150 | 174 | 2.17 | 2.80
E6.52, 175, R, 0 | R6.52, 175, R, 0 | 175 | 199 | 2.28 | 3.03
E6.52, 200, R, 0 | R6.52, 200, R, 0 | 200 | 224 | 2.36 | 3.25
E6.52, 225, R, 0 | R6.52, 225, R, 0 | 225 | 249 | 2.46 | 3.46
E6.52, 250, R, 0 | R6.52, 250, R, 0 | 250 | 274 | 2.54 | 3.68
E6.52, 275, R, 0 | R6.52, 275, R, 0 | 275 | 299 | 2.64 | 3.92
E6.52, 300, R, 0 | R6.52, 300, R, 0 | 300 | 324 | 2.73 | 4.15

e-tubes

Installation note - system E6
Open by removing the crossbar with a screwdriver.
Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/E6_assembly

The required clearance height: \( H_f = H + 40\text{mm} \) (with 2.0kg/m fill weight)

Steel support tray for support of the lower run
● Simple one-piece support trays for the lower run
● To your requirements and specification
● 4 options available
More information ► From page 1264

More information ► www.igus.co.uk/E6.52 ▶ www.igus.co.uk/R6.52
KMA pivoting | Recommended for unsupported applications

<table>
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*Width available upon request. Please consult igus® for delivery times.

(KMA = polymer metal mounting bracket) For the C-profile option please add index C.

E6.520.100.12.C.A2 Order example

A3 to indicate option without C-profile, please add index A.

A2 for the standard version with C-profile, in the inner radius at the moving end in the outer radius at the fixed end.

E6.520.100.12.C.A4

Front view of KMA

Moving end E6/R6. 520 ... 2

Fixed end E6/R6. 520 ... 1

KMA pivoting

Width A

Width B

Shelf, lockable unassembled 2300.X assembled 2310.X

Horizontal separation

Wide full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Standard - for any application

Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation

Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Shelves

Width X [mm]

E6 | Series E6.52-R6.52 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting

Strain relief e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

More information ➤ www.igus.co.uk/E6.52 ➤ www.igus.co.uk/R6.52

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E6
**Separator for e-tubes**

Notches on the separator indicate the clamping side of the separator. The notches on this separator mark the side that fixes to the lid.

---

**Note:** Please be aware of the minimum lateral gap to the side links! **e-tubes:** 20mm

As standard separators are fitted every 2nd e-chain® link!
E6 | Series E6.62 | Product range
Extremely low noise and vibration

e-chains® | Series E6.62 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>Part No.</th>
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<th>Ba [mm]</th>
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Available bend radii

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<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
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Complete Part No. with required radius (R). Example: E6.62 10.250.0

Installation note - system E6
Open by removing the crossbar with a screwdriver.
Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/66_assembly

E6 | Series E6.62 | Installation dimensions
Unsupported applications | Short travels

Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information ► From page 1264

www.igus.co.uk/E6
KMA pivoting | Recommended for unsupported applications

<table>
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<th>Width index</th>
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For even faster installation
Separator for igus® QuickLock crossbar 385.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves Width × X [mm]

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<table>
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<th>X [mm]</th>
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<th>assembled</th>
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Order example
E6.620, 10.12.C.A2

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/E6.62

More information ▶ www.igus.co.uk/E6.62
E6.80L | Product range
Extremely low noise and vibration

... E6.80L

e-chains® | Series E6.80L | Crossbars removable along the inner and outer radius

Part No.

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<td>E6.80L 12, R.0</td>
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<tr>
<td>E6.80L 20, R.0</td>
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</tr>
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</tr>
<tr>
<td>E6.80L 31, R.0</td>
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<td>340</td>
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</table>

Available bend radii

R [mm] | 150 | 175 | 200 | 250 | 300

Complete Part No. with required radius (R). Example: E6.80L, 10, 175.0

Installation note - system E6
Open by removing the crossbar with a screwdriver.
Repeat the procedure on the other side.
Assembly video available online at www.igus.co.uk/E6_assembly

E6.80L | Series E6.80L | Installation dimensions
Unsupported applications | Short travels

Part No.

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Steel support tray for support of the lower run
- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available
More information - From page 1264

3D CAD, configurators, service life calculation and more - www.igus.co.uk/E6
KMA pivoting | Recommended for unsupported applications

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<tr>
<th>Width index</th>
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<th>Part No. full set</th>
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KMA = polymer metal mounting bracket. For the C-profile option please add index C.

Order example:
KMA 06.12 C = E6.80L08.12 C
KMA 10.12 C = E6.80L10.12 C
KMA 12.12 C = E6.80L12.12 C
KMA 15.12 C = E6.80L15.12 C
KMA 16.12 C = E6.80L16.12 C
KMA 17.12 C = E6.80L17.12 C
KMA 18.12 C = E6.80L18.12 C
KMA 20.12 C = E6.80L20.12 C
KMA 21.12 C = E6.80L21.12 C
KMA 22.12 C = E6.80L22.12 C
KMA 23.12 C = E6.80L23.12 C
KMA 25.12 C = E6.80L25.12 C
KMA 26.12 C = E6.80L26.12 C
KMA 27.12 C = E6.80L27.12 C
KMA 28.12 C = E6.80L28.12 C
KMA 30.12 C = E6.80L30.12 C
KMA 31.12 C = E6.80L31.12 C

KMA = polymer metal mounting bracket. For the C-profile option please add index C.

Strain relief e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options. From page 1300
E6 | Series E6.80L | Accessories

Interior separation | To allow faster filling New

Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 16mm
As standard separators are fitted every 2nd e-chain® link

Lean separators*

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

*Only for e-chain®

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

(Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

The E6 system is one of the best ways to guide energy, data and media safely and with very low vibration on printers and plotters.

More information ➤ www.igus.co.uk/E6.80L

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/E6
e-chains® | Series E6.80 | Crossbars removable along the inner and outer radius

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<tr>
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Available bend radii

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Complete Part No. with required radius (R). Example: E6.80.10,300.0

E6.80 | Series E6.80 | Product range

Extremely low noise and vibration

Assembly video available online at www.igus.co.uk/E6.80

Installation note - system E6

Open by removing the crossbar with a screwdriver. Repeat the procedure on the other side.

Assembly video available online at www.igus.co.uk/E6_assembly

E6 | Series E6.80 | Installation dimensions

Unsupported applications | Short travels

Unlimited length: FL / 3.0

Flange length FL corresponds to [mm], 1,040 e-chain® length

Bi [mm]

Ba [mm]

E6.80 [kg/m] (with 5.0kg/m fill weight)

H [mm] 1,016

D [m] 356

K [m] 456

The required clearance height: H = H + 100mm

If a gliding application is required for a long travel, please consult igus®.

Steel support tray for support of the lower run

Simple one-piece support trays for the lower run

To your requirements and specification

4 options available

More information ► From page 1264
KMA pivoting | Recommended for unsupported applications

<table>
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<tr>
<th>Width index</th>
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(KMA = polymer metal mounting bracket) For the C-profile option please add index C.

E6.800.10.D.C.A2.2

Order example: a. To indicate option with brackets pre-fitted. C-profile option

Recommended for KMA mounting brackets. To receive KMA pre-fitted with C-profile please add index A. Please add index D2 for the standard version with C-profile, in the inner radius at the moving end and in the outer radius at the fixed end.

KMA pivoting

Moving end

E6.800 ... 2

Fixed end

E6.800 ... 1

Front view of KMA

Pivoting angle corresponds to the radius.

E6.80 | Series E6.80 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting

Moving end

E6.800 ... 2

Fixed end

E6.800 ... 1

Front view of KMA

Pivoting angle corresponds to the radius.

E6.80 | Series E6.80 | Accessories

Interior separation | Increase cable service life

Previous generation of interior separation with other options ➤ www.igus.co.uk/E6.80

Standard - any application

Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation

Separator for igus® QuickLock crossbar 450.X.Q. Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

Locks securely in preset increments

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

www.igus.co.uk/E6.80
**E6 | Series E6.80 | Accessories**

*Interior separation | To allow faster filling New*

---

**Note:** Please be aware of the minimum lateral gap to the side links! **e-chain®:** 16mm

As standard separators are fitted every 2nd **e-chain®** link.

---

**Lean separators**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full **e-chain®**.

*Only for **e-chain®**

---

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long **e-chain®** fitted with 12 cables in the igus® readychain® factory")

---

More information ▶ www.igus.co.uk/E6.80

---

E6 | Application example

**igus® system E6 guiding an extraction hose - speed 8m/s, acceleration 78.5m/s²**

---

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/E6
Novel energy supply system for cleanrooms

Advantages of the e-skin® series:
- Hose consisting of an upper and lower shell that form a complete enclosure when connected together
- Easy filling with "zipper" function
- Special design allows unsupported lengths
- Less installation space required
- Cable-friendly with defined minimum bend radius
- Available with interior separation
- Prevents unintentional sideways movement
- Simple maintenance and inspection of the cables inside
- Protection against dust and water ingress
- Suitable for cleanrooms according to IPA ISO class 1

When to use another e-chain® series:
- For longer unsupported lengths
  - E3, page 732
  - E6.1, page 750
- For higher speeds
  - E3, page 732
  - E6.1, page 750
- For high exposure to dirt
  - RX e-tubes, page 502
e-skin® | Introduction | Advantages

**Novel energy supply system for cleanrooms - e-skin®**

e-skin® is a hose consisting of an upper and lower shell that form a complete enclosure when connected together. The simple and reclosable opening mechanism enables easy maintenance and inspection of the cables inside. e-skin® has many advantages over conventional corrugated tubes.

- Special design allows unsupported lengths
- Openable, quick assembly
- Available with interior separation
- Less installation space required
- Protection against dust and water ingress

**Cleanroom ISO Class 1: virtually no wear or abrasion**

**Fully enclosed: protection against dust and water ingress**

**Space-saving: less installation space required**

**Cable-friendly: with defined minimum bend radius**

**Strong: prevents unintentional sideways movement**

**Typical industries and applications**
- Cleanroom
- Pick & Place
- Printers
- Any machine that uses corrugated hoses

With the e-skin®, igus® offers a modular corrugated tube with a self-supporting function for energy supply in the smallest possible space. The product is certified in accordance with IPA ISO Class 1 and can be used in cleanrooms. e-skin® provides systems with data, media and energy without generating airborne particles through friction which could contaminate the room.

The corrugated tube is made up of abrasion-resistant plastic and its separable upper and lower shells can be easily put together by a “zipper” to a fully enclosed tube. This simultaneously guarantees cleanroom suitability as well as offering quick filling with cables.
**e-skin® | Comparison - e-skin® vs conventional corrugated tubes**

### igus® e-skin®
- e-skin® consists of two shells (upper and lower). The shells can be configured in order to define movement.
- e-skin® is suitable for short unsupported lengths.
- Lateral stability thanks to an oval geometry of the e-skin®.

### Conventional corrugated tubes
- Corrugated tubes have the same bend radius along their entire length.
- Corrugated tubes cannot be used for unsupported applications.
- Very little any stability in respect of forces acting on the sides.

---

**e-skin® | Comparison - e-skin® vs conventional corrugated tubes**

### igus® e-skin®
- e-skin® supports itself.
- e-skin® can be fitted with interior separation.

### Conventional corrugated tubes
- Corrugated tubes have very little any inherent rigidity. e-rib solves this [www.igus.co.uk/e-rib](http://www.igus.co.uk/e-rib).
- Corrugated tubes (for dynamic applications) cannot be opened.
- The interior of corrugated tubes cannot be divided into sections.

---

More information ➤ [www.igus.co.uk/eskin](http://www.igus.co.uk/eskin)

3D CAD, configurators, service life calculation and more ➤ [www.igus.co.uk/eskin](http://www.igus.co.uk/eskin)
e-skin® | Technical data | Overview

### Technical data

**Speed** $F_L^G / acceleration F_L^B$

- $F_L^G \leq 10 \; \text{[m/s]} / \leq 75 \; \text{[m/s]}^2$

- $F_L^B$ upon request

**e-chain® material - permitted temperature °C, igumid SK**

- +10°C up to +50°C

**Mounting bracket material - permitted temperature °C, igumid NB**

- +10°C up to +50°C

**Flammability class** UL94-HB

- $F_L^G$ = unsupported with straight upper run
- $F_L^B$ = unsupported with permitted sag

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
<th>Side mounted unsupported</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK28</td>
<td>≤ 1.50m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
<tr>
<td>SK40</td>
<td>≤ 2.50m</td>
<td>upon request</td>
<td>upon request</td>
<td>upon request</td>
</tr>
</tbody>
</table>

### Options with order keys | Examples based on series SK28

#### Options with order keys

- **Standard**
- **Reverse Bend Radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. RBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK28.068.02.1</td>
<td>SK28.068.02.02.1</td>
</tr>
</tbody>
</table>

#### Ready to ship*

- in 24 - 48hrs.
- Available upon request

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

**Order example** | **Order key and colour examples** | Examples based on series SK28

**Order example for complete e-chain® (1m), colour white, with mounting brackets and interior separation:**

- e-chain® (1,000mm) Please order the required length in mm
- + Mounting brackets KMA 1 set (with fiewrap plates)
- Interior separation fitted every 112mm

**Order text:**

1.000 mm SK28.068.02.1 + SK280.068.12ZB.1 + 16 x SK28.1.1.01

**Order key**

- Oval design
- Series / Type
- Inner height
- Width index
- Version
- Colour index (standard white)

**Colour**

- White

**Order index**

- Standard
- .1

- White e-skin® e-chains® available from stock.
Series SK28 | Oval design | Can be opened and closed like a zipper

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>hi [mm]</th>
<th>ha [mm]</th>
<th>R min.* [mm]</th>
<th>SK₂₈</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK28.068.02.1</td>
<td>68</td>
<td>95</td>
<td>28</td>
<td>40</td>
<td>055</td>
<td>= 0.54</td>
</tr>
</tbody>
</table>

**Available upon request. Please consult igus® for delivery time. **Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

**Installation dimensions**

- **Chart values are provisional.**
- **FL₉₈ upon request**
- **Inner height [mm]**
- **e-chain® length**
- **L₉₈ * 1/2 + K**

The required clearance height: Hᵢ = H + 265mm (with 0.75kg/m fill weight)

**KMA | Recommended for unsupported, vertical hanging, standing applications**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>068.</td>
<td>SK280.068.12.1</td>
<td>SK280.068.12ZB.1</td>
<td>104</td>
<td>92</td>
<td>68</td>
<td>35</td>
<td>46</td>
<td>21</td>
<td>18</td>
<td>7</td>
</tr>
</tbody>
</table>

**Order example**

SK280.068.12ZB.1.A 
To indicate option with brackets pre-fitted

**Colour index**

- With integrated strain relief tie wrap plates
- Full set
- Width index
- Series

**Strain relief**

- e.g. clamps, tie wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

More information ► www.igus.co.uk/SK28

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/eskin
e-skin® | Series SK28 | Accessories

Vertical separation - slotted separators

The interior separation system for the igus® e-skin® consists of individual separators and full-width shelves, which can be fitted in a variety of ways.

**Full-width shelf**

This option is for applications with many small cables with similar diameters. For full width separation.

---

e-skin® | Application example

Absolutely dust-free environment for printed-circuit-board production using the abrasion-resistant e-skin® from igus®
**Series SK40** | Oval design | Can be opened and closed like a zipper

---

<table>
<thead>
<tr>
<th>Part No.</th>
<th>e-chains®</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>hi [mm]</th>
<th>ha [mm]</th>
<th>R min.* [mm]</th>
<th>SK40 085.02.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>SK40.085.02.1</td>
<td>85</td>
<td>118</td>
<td>38</td>
<td>57</td>
<td>100</td>
<td>≈ 1.15</td>
<td></td>
</tr>
</tbody>
</table>

---

*Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

---

**Installation dimensions**

---

**Chart values are provisional. ** FL<sub>U</sub> upon request

---

**Outer height [mm]**

---

**Inner height [mm]** 38

e-chain® length L<sub>e</sub> = 1/2 * D + K

---

**R min.*** 100

*Note: The minimum bend radius is determined by the bottom of the e-skin® tube!

---

**H** 350

No bend radius is specified in the part number, since it depends on travel and fill weight. The smallest

---

**D** 300

specified radius below is the minimum to guarantee the service life of the cables. In most applications,

---

**K** 693

however, the radius remains larger because the shape of the tube defines this.

---

The required clearance height: H<sub>R</sub> = H + 355mm (with 0.75kg/m fill weight)

---

### e-skin® | Series SK40 | Accessories

**Mounting brackets | Interior separation**

---

**Fixed end** SK400 ... 1

---

**Moving end** SK400 ... 1

---

**KMA | Recommended for unsupported, vertical hanging, standing applications**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set with tiewrap plates</th>
<th>Part No. full set without tiewrap plates</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>Number of teeth</th>
</tr>
</thead>
<tbody>
<tr>
<td>085.</td>
<td>SK400.085.12.B.1</td>
<td>SK400.085.12.B.1</td>
<td>125</td>
<td>113</td>
<td>68</td>
<td>35</td>
<td>66</td>
<td>41</td>
<td>18</td>
<td>10</td>
</tr>
</tbody>
</table>

---

*Width available upon request. Please consult igus® for delivery time.

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► [From page 1300](#)

---

**Order example**

---

3D CAD, configurators, service life calculation and more ► [www.igus.co.uk/eskin](http://www.igus.co.uk/eskin)
**e-skin® | Series SK40 | Accessories**

**Interior separation**

The igus® e-skin® e-chain® can be used for short unsupported lengths in cleanrooms.

**Vertical separation - slotted separators**

The interior separation system for the igus® e-skin® consists of individual separators and full-width shelves, which can be fitted in a variety of ways.

**Full-width shelf**

This option is for applications with many small cables with similar diameters. For full width separation.

---

**Applications example**

The igus® e-skin® e-chain® can be used for short unsupported lengths in cleanrooms.

---

More information ► www.igus.co.uk/SK40

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/eskin
TH3
The first e-chain® designed according to hygienic principles - TH3

Advantages of the TH3 system:
- The first e-chain® designed according to hygienic principles
- Easy to clean due to open design
- FDA- and EU-compliant materials - blue material, typical for plastic parts in the food industry (consists of igumid TH NB for the side parts and igumid TH G for the frames and mounting brackets)
- Good resistance to aggressive cleaning agents and chemicals
- Rounded edges mean that there are no dead spaces or resulting germ formation
- No material on material rubbing
- No bolted connections
- Operating temperature -40°C / +70°C
- reddot award winner 2017

When to use another igus® e-chain® series:
- When hygienic design does not matter but cleanroom capability is required
  - T3, page 722
- When Cleanroom ISO Class 1 is required
  - E6.1, page 750
The first e-chain® designed according to hygienic principles - TH3

The igus® TH3 e-chain® is the world’s first plastic e-chain® developed according to "Hygienic Design Guidelines". The open design of the e-chain® is very easy to clean and, thanks to rounded corners and the absence of bolted connections, dead spaces and the resulting germ formation are avoided. The blue material, which is typical of plastic parts in the food industry, is also highly resistant to aggressive cleaning agents and chemicals. The e-chain® is suitable for applications with the highest hygienic requirements for safe cable and hose guidance.

The igus® material of the TH3 e-chain® is FDA and EU regulation-compliant and reddot award winner 2017.

Typical industries and applications
- Packaging machines
- Food and beverage/filling machines
- Wherever hygiene requirements are very high and cables and hoses have to be guided safely and securely.

System TH3 - hygienic design e-chain®
3-piece, hygienic design consisting of two side parts and an interior separation segment

<table>
<thead>
<tr>
<th>Segment design</th>
<th>Series</th>
<th>Inner height [mm]</th>
<th>Inner width [mm]</th>
<th>Outer width [mm]</th>
<th>Outer height [mm]</th>
<th>Bend radius [mm]</th>
<th>Unsupported length [m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-segment</td>
<td>TH3.25.2/26 New 25.5</td>
<td>70</td>
<td>86</td>
<td>35</td>
<td>070</td>
<td>1.2</td>
<td>856</td>
</tr>
<tr>
<td></td>
<td>TH3.45.2/20 New 2 x 20</td>
<td>70</td>
<td>90</td>
<td>57</td>
<td>090</td>
<td>1.4</td>
<td>860</td>
</tr>
<tr>
<td>3-segment</td>
<td>TH3.25.3/26 New 25.5</td>
<td>95</td>
<td>111</td>
<td>35</td>
<td>070</td>
<td>1.2</td>
<td>856</td>
</tr>
<tr>
<td></td>
<td>TH3.45.3/20 New 2 x 20</td>
<td>95</td>
<td>115</td>
<td>57</td>
<td>090</td>
<td>1.4</td>
<td>860</td>
</tr>
<tr>
<td>4-segment</td>
<td>TH3.25.4/26* New 25.5</td>
<td>120</td>
<td>136</td>
<td>35</td>
<td>070</td>
<td>1.2</td>
<td>856</td>
</tr>
<tr>
<td></td>
<td>TH3.45.4/20* 2 x 20</td>
<td>120</td>
<td>140</td>
<td>57</td>
<td>090</td>
<td>1.4</td>
<td>860</td>
</tr>
<tr>
<td>5-segment</td>
<td>TH3.25.5/26* New 25.5</td>
<td>145</td>
<td>161</td>
<td>35</td>
<td>070</td>
<td>1.2</td>
<td>856</td>
</tr>
<tr>
<td></td>
<td>TH3.45.5/20 New 2 x 20</td>
<td>145</td>
<td>165</td>
<td>57</td>
<td>090</td>
<td>1.4</td>
<td>860</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time.

Available from stock. Ready to ship in 24 - 48 hrs.*
* The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/TH3

igus® 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/TH3
TH3 | Technical data | Overview

### Technical data

- **Speed** $FL_0$ / acceleration $FL_a$ upon request
- **Side part material - permitted temperature °C, igumid TH NB** $-40°C / +70°C$
- **Material interior separation segment - permitted temperature °C, igumid TH G** $-40°C / +70°C$
- **Mounting bracket material - permitted temperature °C, igumid TH G** $-40°C / +70°C$
- **Flammability class, igumid TH NB** VDE 0304 IIC UL94-HB
- **Flammability class, igumid TH G** VDE 0304 IIC UL94-HB

**Notes:** $FL_a$ = unsupported with straight upper run

### Installation types, maximum travels

<table>
<thead>
<tr>
<th>Series</th>
<th>Unsupported</th>
<th>Vertical hanging</th>
<th>Vertical standing</th>
</tr>
</thead>
<tbody>
<tr>
<td>TH3.25</td>
<td>≤ 1.2m</td>
<td>≤ 6.0m</td>
<td>≤ 1.8m</td>
</tr>
<tr>
<td>TH3.45</td>
<td>≤ 1.5m</td>
<td>≤ 6.0m</td>
<td>≤ 2.0m</td>
</tr>
</tbody>
</table>

### Material interior separation segment

- **Permitted temperature °C, igumid TH NB** $-40°C / +70°C$
- **Permitted temperature °C, igumid TH G** $-40°C / +70°C$

### Hygienic design e-chains®

**Order example for complete e-chain® (1.0m), colour blue, with mounting brackets and interior separation:**

- **e-chain® (1.0m)** Indicate e-chain® length or number of side parts
- **+ Mounting brackets** 1 set
- **Interior separation** The interior separation segments connect the side parts of the e-chain®.
- **Order text:** $1\text{m} \text{TH3.45} \text{.3/20.090.8} + 1 \text{set} \text{TH3.450.3/20.12.8}$

**Order key**

- **TH3.45.3/20.090.8** Order index
- **Order index**
  - Colour index (standard blue)
  - Colour index (standard blue)
  - For plastic parts in the food industry; the blue material is FDA-compliant.

**Order index**

- **TH3.45.3/20.090.8**
- **Order index**
  - Colour index (standard blue)
  - Colour index (standard blue)
  - Blue e-chain® made from FDA-compliant material from stock.

**More information** [www.igus.co.uk/TH3](http://www.igus.co.uk/TH3)

**3D CAD, configurators, service life calculation and more** [www.igus.co.uk/TH3](http://www.igus.co.uk/TH3)

---

**TH3 | Order example | Order key**

**Order example for complete e-chain® (1.0m), colour blue, with mounting brackets and interior separation:**

- **e-chain® (1.0m)** Indicate e-chain® length or number of side parts
- **+ Mounting brackets** 1 set
- **Interior separation** The interior separation segments connect the side parts of the e-chain®.
- **Order text:** $1\text{m} \text{TH3.45.3/20.090.8} + 1 \text{set} \text{TH3.450.3/20.12.8}$

**Order key**

- **TH3.45.3/20.090.8** Order index
- **Order index**
  - Colour index (standard blue)
  - Colour index (standard blue)
  - For plastic parts in the food industry; the blue material is FDA-compliant.

**Order index**

- **TH3.45.3/20.090.8**
- **Order index**
  - Colour index (standard blue)
  - Colour index (standard blue)
  - Blue e-chain® made from FDA-compliant material from stock.

**The TH3 e-chain® is the world’s first plastic e-chain® developed according to "Hygienic Design Guidelines" (04/2018)**
World’s first hygienic design e-chain®

**TH3 - 3-piece hygienic design e-chain®**

- The TH3 e-chain® consists of 3 parts, the two side parts and one interior separation segment.
- The interior separation segments connect the side parts of the e-chain®.
- The segments are available in 4 different widths.

### Interior separation segments series TH3.25 | Size overview

<table>
<thead>
<tr>
<th>Segment</th>
<th>Part No.</th>
<th>Chamber width</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-segment</td>
<td>TH3.25.2/26, R, B</td>
<td>26/26</td>
<td>70</td>
<td>86</td>
<td>070</td>
</tr>
<tr>
<td>3-segment</td>
<td>TH3.25.3/26, R, B</td>
<td>26/20.5/26</td>
<td>95</td>
<td>111</td>
<td>070</td>
</tr>
<tr>
<td>4-segment</td>
<td>TH3.25.4/26, R, B</td>
<td>26/20.5/20.5/26</td>
<td>120</td>
<td>135</td>
<td>070</td>
</tr>
<tr>
<td>5-segment</td>
<td>TH3.25.5/26, R, B</td>
<td>26/20.5/20.5/20.5/26</td>
<td>145</td>
<td>161</td>
<td>070</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® sales for delivery time.*

Complete Part No. with required radius (R). Example: TH3.25.3/26,070.8

 Unsupported applications | Short travels

**Unsupported applications**

- Short travels

**Unsupported length**

- FL

- G

**Travel**

- S

- H

**Moving end**

**Fixed end**

Chart values are provisional

- FLG

- R

- Min.*

- H

- 070

- Required clearance height H requires amounts to:

- D

- 110

- Travel distance up to 300m

- 280mm

- K

- 240

- Travel distance from 300 up to 1,000mm

- 300mm

The required clearance height H: H = H + 100 and accordingly H + 120 (with 0.4kg/m fill weight)

**TH3.25**

**Series TH3.25**

**Product range New**

World’s first hygienic design e-chain®

More information | www.igus.co.uk/TH3.25

3D CAD, configurators, service life calculation and more | www.igus.co.uk/TH3
The TH3 interior separation segments are mounted on every 5th link of the e-chain®!

The diagrams show a TH3.25 interior separation segment with 3 chambers and fitted mounting bracket.

### FDA-compliant mounting brackets, locking | For unsupported applications

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No.</th>
<th>A (mm)</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2/26</td>
<td>TH3.250.2/26.12.8</td>
<td>77.5</td>
<td>70</td>
<td>86</td>
</tr>
<tr>
<td>3/26</td>
<td>TH3.250.3/26.12.8</td>
<td>102.5</td>
<td>95</td>
<td>111</td>
</tr>
<tr>
<td>4/26</td>
<td>TH3.250.4/26.12.8*</td>
<td>127.5</td>
<td>120</td>
<td>136</td>
</tr>
<tr>
<td>5/26</td>
<td>TH3.250.5/26.12.8*</td>
<td>152.5</td>
<td>145</td>
<td>161</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time.

**Order example**

TH3.250 3/26.12.8 A

- A... to indicate option with brackets pre-fitted
- Colour, standard blue
- Full set
- Interior separation segment Series

- TH3.250 3/26.12.8 A

The bracket orientations are set automatically when using mounting brackets. To receive brackets pre-fitted please add index A.

**Strain relief**
e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300
**e-chains® | Series TH3.45 | 3-piece, hygienic design**

<table>
<thead>
<tr>
<th>Segment design</th>
<th>Part No.</th>
<th>Chamber width</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>TH3.45</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-segment</td>
<td>TH3.45.2/20, R, 8</td>
<td>20/20</td>
<td>70</td>
<td>90</td>
<td>090</td>
<td>n = 0.82</td>
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<td>3-segment</td>
<td>TH3.45.3/20, R, 8</td>
<td>20/20/20</td>
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<td>115</td>
<td>090</td>
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<td>20/20/20/20</td>
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<td>140</td>
<td>090</td>
<td>n = 0.92</td>
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<tr>
<td>5-segment</td>
<td>TH3.45.5/20, R, 8</td>
<td>20/20/20/20/20</td>
<td>145</td>
<td>165</td>
<td>090</td>
<td>n = 0.96</td>
</tr>
</tbody>
</table>

*Width available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: TH3.45.3/20, 090, 8

---

**Interior separation segments series TH3.45 | Size overview**

---

**TH3 - 3-piece hygienic design e-chain®**

- The TH3 e-chain® consists of 3 parts, the two side parts and one interior separation segment.
- The interior separation segments connect the side parts of the e-chain.
- The segments are available in 4 different widths.
**TH3 | Series TH3.45 | Accessories**

FDA-compliant mounting brackets | Attachment from any side | Locking

**TH3 | Series TH3.45 | Overview**

Interior separation segments

The TH3 interior separation segments are mounted on every 5th link of the e-chain!!

The diagrams show a TH3.45 interior separation segment with 3 chambers and fitted mounting bracket

**FDA-compliant mounting brackets, locking | For unsupported applications**

<table>
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<tr>
<th>Width index</th>
<th>Part No.</th>
<th>A [mm]</th>
<th>B1 [mm]</th>
<th>B2 [mm]</th>
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</table>

*Width available upon request. Please consult igus® for delivery times.

**Strain relief** e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300.

---

*TH3.450.3/20.12.8*

The bracket orientations are set automatically when using mounting brackets. To receive brackets pre-fitted please add index A.

TH3.453/20.12.8 A Order example

A... to indicate option with brackets pre-fitted

Colour, standard blue

Full set

Interior separation segment Series

XX¡

The TH3 series is suitable for applications with the highest hygienic requirements for safe cable and hose guidance

More information ➤ www.igus.co.uk/TH3.45

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/TH3
Robotic, 3D and circular movements: triflex® | twisterchain | twisterband
triflex® R
For multi-axis movements and robots

triflex® R advantages:
- For the most demanding multi-axis applications on industrial robots
- Defined torsion stop-dog
- Defined minimum bend radius
- Easy to lengthen and shorten
- Small bend radius and short pitch
- Fillable from the outside

When to use another 3D e-chain® series:
- For circular movements with high loads
  - twisterchain system, page 966
triflex® R | Introduction | Advantages

For multi-axis movements and robots - triflex® R

triflex® R (R for “round”) is the third generation of multi-axis igus® e-chains®. The key design characteristics of igus® triflex® R have made this product very successful in the robot industry.

- Defined torsion stop-dog on each e-chain® link
- Defined minimum bend radius
- High tensile strength ball and socket joint
- Compact retraction system options to prevent loop formation
- Fibre-rod option for partial directional control and reinforcement
- No extra support elements required e.g. steel cables, spring suspensions etc.
- Wide range of accessories

triflex® R available in 5 versions from stock
- TRC - closed design with smooth and robust exterior
- TRE - “easy” design, easy to fill from outside
- TRCF - closed design with snap lock mechanism
- TRL - very lightweight, with “easy” design
- TRLF - light version with snap lock mechanism

Typical industries and applications
- The first choice for multi-axis robots
- Machine tools
- Handling machines - 6-axis
- Conveyor systems
- Packaging machines
- General mechanical engineering, etc.

Assembly video available online at
► www.igus.co.uk/triflexR_assembly

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

triflex® R | Features | Accessories

- The defined torsion stop ensures an even distribution of the torsional load across the entire length
- A tough, bend radius stop-dog actively prevents cables and hoses from kinking
- Interior separation: two or three chamber design for a reliable cable guidance
- Defined torsion stop-dog actively prevents cables and hoses from kinking
- Openable - series TRCF and TRLF have snap lock mechanism for easy filling
- Tensile strength is absorbed directly by the e-chain® - no additional supports are necessary
- Various heavy duty and compact connections and quick-change units are available

Serie TRC - electrically conductive ESD e-chains® - several series available from stock
UL94-V2 classification
IF product design award 2004 for igus® series TRC
2007 for igus® series TRL
2013 for igus® series TRLF

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/triflexR
1) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value.

2) Max. cable diameter D-4 mm. Max. cable diameter changes to Ø 36 mm, if lengthening or shortening an already populated triflex® R.

3) TRL 30 with 2-channel design.

4) Special size TRLF.85.240.0 with 240 degree bend radius and a range of accessories.

---

**triflex® R | Selection table**

<table>
<thead>
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<th>Series</th>
<th>Inner height</th>
<th>≤ ø cable</th>
<th>Outer width</th>
<th>Bend radius</th>
<th>Pitch</th>
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**triflex® R | Selection table**

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**triflex® R | Retraction system overview**

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<th>System</th>
<th>For triflex® R</th>
<th>For ø Index</th>
<th>Page</th>
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<tr>
<td>RSP - pneumatic retraction system</td>
<td>TRC-TRE-TRCF</td>
<td>60 - 125</td>
<td>TRC-TRE</td>
<td>908</td>
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<tr>
<td>RS - modular retraction system</td>
<td>TRC-TRE</td>
<td>40 - 100</td>
<td>TRC-TRE-TRCF</td>
<td>914</td>
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<tr>
<td>RSE linear - cost-effective retraction system, linear</td>
<td>TRC-TRE-TRCF</td>
<td>40 - 125</td>
<td>TRC-TRE</td>
<td>920</td>
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<tr>
<td>RSE - cost-effective retraction system, for small robots</td>
<td>TRC-TRE</td>
<td>40 - 50</td>
<td>TRC-TRE</td>
<td>926</td>
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1) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value.

2) Max. cable diameter D-4 mm. Max. cable diameter changes to Ø 36 mm, if lengthening or shortening an already populated triflex® R.

3) TRL 30 with 2-channel design.

4) Special size TRLF.85.240.0 with 240 degree bend radius and a range of accessories.

---

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
Reduce installation times with easy-to-use disassembly tools

Easy-to-use disassembly tools for triflex® TRE (B version) and TRCF. Easy disassembly at any point along the e-chain®, even when full.

More information
➤ www.igus.co.uk/triflex_B_disassemblytool

Assembly video available online at
➤ www.igus.co.uk/triflexR_assembly

triflex® R | Technical data

<table>
<thead>
<tr>
<th>Speed / acceleration</th>
<th>upon request</th>
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<tr>
<td>Material - permitted temperature °C, igumid G (TRLF/TRCF)</td>
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<tr>
<td>Material - permitted temperature °C, igumid NB (TRC/TRE/TRL)</td>
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<td>Flammability class, igumid G (TRLF/TRCF)</td>
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<td>Flammability class, igumid NB (TRC/TRE/TRL)</td>
<td>VDE 0304 IIC UL94-V2</td>
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</table>

For series TRE.B Part No. disassembly tool
TRC.40.B MAT0050175
TRC.50.B MAT0050176
TRC.60.B / TRE.70.B MAT0050173
TRC.85.B MAT0050174
TRC.100.B MAT0050172

For series TRE.B Part No. disassembly tool
TRLF.40.B MAT0051135
TRLF.50.B MAT0051136
TRLF.60.B / TRE.70.B MAT0051133
TRLF.85.B MAT0051137
TRLF.100.B MAT0051138

triflex® R | Application example

igus® triflex® R TRLF - light version, easily openable by hand or with a screwdriver

igus® triflex® R TRCF - closed version, openable with a screwdriver

triflex® RS for a low profile retraction system. Integrated fibre rods generate the directed pretension so that loops do not form in the working area

Pneumatic retraction system triflex® RSP - prevents loop formation on the robot

triflex® RTR.RSE.40.L or R, cost-effective and lightweight retraction system with guide roller, for small robots

TR.RSE linear retraction system for triflex® R, sizes 40-125

For series TRE.B Part No. disassembly tool
TR.RSE.40.B MAT0050179
TR.RSE.50.B MAT0050180
TR.RSE.60.B / TRE.70.B MAT0050172
TR.RSE.85.B MAT0050182
TR.RSE.100.B MAT0050184
Closed and chip-repellent - TRC

- Secure, closed and chip-repellent energy supply for multi-axis movements
- Smooth but robust exterior
- High torsional strength
- Easy to lengthen and shorten

Typical industries and applications
- Robotics and automation
- Multi-axis machine tools
- Wet and cold cells
- Painting applications and ESD
- Sand and dust exposure

Impact-resistant, abrasion resistant and chip-resistant but still protects the cables

High strength - thanks to external stop-dogs

Easy assembly and disassembly

Small bend radius and short pitch

Easy attachment and special accessories for the robot or machine

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/TRC

ESD - many sizes from stock
- Standardised product made from igumid ESD
- ESD material tested with over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs, from stock

More information ➤ www.igus.co.uk/ESD

Installation dimensions

Part No. | B1 | B2 | Ba | R | d1 | d2 | Pitch | Links per m | Weight per m
---|---|---|---|---|---|---|---|---|---
TRC. 30, 050, 0 | 12 | 10 | 34.5 | 050 | 10 | 8 | 11.3 | 89 | 0.27
TRC. 40, 058, 0 | 15 | 13 | 43 | 058 | 13 | 11 | 13.9 | 72 | 0.37
TRC. 50, 060, 0 | 18.8 | 16.2 | 54 | 060 | 16.5 | 14 | 17.4 | 58 | 0.59
TRC. 60, 067, 0 | 22.5 | 19.5 | 65 | 067 | 20.5 | 17.5 | 20.4 | 49 | 0.85
TRC. 70, 110, 0 | 28 | 24 | 81 | 110 | 26 | 22 | 25.6 | 39 | 1.32
TRC. 85, 135, 0 | 33 | 28 | 94.5 | 135 | 31 | 26 | 30.6 | 33 | 1.75
TRC. 100, 145, 0 | 37.5 | 32.5 | 108 | 145 | 35.5 | 30.5 | 34.5 | 29 | 2.38
TRC. 125, 162, 0 | 43.3 | 43.3 | 135 | 162 | 41 | 411 | 44.6 | 23 | 4.70
triflex® R | Series TRE | Advantages

Easy to fill - simply press cables in - TRE

- Easy to fill energy supply for multi-axis movements
- High torsional strength
- Easy to shorten and lengthen.
- B version - 4x increase in radial stability, allows larger torsion forces
- C version and TRE.125 - fast assembly due to pin connection and spherical igubal® joint allowing 50% higher tensile forces

Typical industries and applications
- Robotics and automation
- Spot welding and pick and place applications
- When fast cable replacement is needed

High tensile strength thanks to special ball and socket design

Defined torsion stop, allows free movement in any direction but still protects the cables

“Easy” design for fast filling with cables and hoses

Simple tool for fast disassembly of the triflex® B versions

High strength - thanks to external stop-dogs

Small bend radius and short pitch

Electrically conductive ESD e-chains® upon request

Save time - easy disassembly tool available for triflex® R

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/TRE

triflex® R | Series TRE | Product range

Robotic applications, easy filling

e-chains® | Series TRE | "easy" design - simply press cables in

<table>
<thead>
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<th>Part No.</th>
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<th>Bi1</th>
<th>Bi2</th>
<th>Ba</th>
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<th>d2</th>
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</table>

e Series = 4x Higher torsion forces C Series = quick assembly, 50% higher forces
1) Available as C Version Part No. TRE.100.145.0.C
2) For quick and easy fitting or removal of cables using the “easy” design, we recommend a maximum cable diameter of 70% of the specified value
3) TRE 125: max. cable diameter Ø 41mm. Max. cable diameter changes to Ø 36mm when an already populated e-chain needs to be shortened or lengthened TRE.LOCK

Installation dimensions

TRE.LOCK clips
Clips for a secure fit in the mounting bracket. Supplied with every mounting bracket. Please use the Part No. on the right for reordering individual parts

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3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
Enclosed design with snap lock mechanism - TRCF

- Snap lock mechanism for fast opening to insert large cables or hoses
- Snap lock mechanism operable with a screwdriver
- Defined minimum bend radius and torsion stop dog for optimum cable protection
- Enclosed version, for use with dirt and chip exposure
- 3-chamber design for ideal cable distribution and separation
- Easy to lengthen and shorten

Typical industries and applications
- Robotics and automation
- Painting applications
- Large hydraulic hoses
- Screw and rivet feeds
- Tool changer applications
- Robot for laser welding
- Robot for screw and rivet applications

Save time - easy disassembly tool available for triflex® R

Available from stock. Ready to ship in 24 - 48hrs.®

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ► www.igus.co.uk/TRCF
triflex® R | Series TRL | Advantages

Lightweight and cost-effective - TRL

- Very easy to fill
- Multi-axis e-chain® for simple applications
- Easy to lengthen and shorten
- Defined torsion stop, allows free movement in any direction but still protects the cables
- "Easy" design for fast filling with cables and hoses
- Extremely lightweight due to one-piece design
- Small bend radius and short pitch
- Mounting bracket with strain relief also available as intermediate bracket

Typical industries and applications
- Robot axes 1-3
- Non-robotic applications
- Bundling cables for operator controls
- Filament feeds on 3D printers
- Office applications

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

According to the if product design award 2007 igus® Series TRL.

More information ► www.igus.co.uk/TRL

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e-chains® | TRL series | Light version with "easy" design - simply press cables in

<table>
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<th>B2</th>
<th>Ba</th>
<th>d1</th>
<th>d2</th>
<th>Pitch</th>
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<td>–</td>
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</table>

1) Only available with 2-chamber design
2) For quick and easy fitting or removal of cables using the "easy" design, we recommend a maximum cable diameter of 70% of the specified value

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Installation dimensions

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More information ► www.igus.co.uk/triflexR
**Lightweight, with snap lock mechanism - TRLF**

- Snap lock mechanism for fast opening
- Operable by hand or with a screwdriver
- For large, stiff hoses or many cables
- Economical multi-axis e-chain® for less demanding applications
- Easy to lengthen and shorten

**Typical industries and applications**

- Painting hoses
- Rivet feeds
- Robot axes 1-3
- Non-robotic applications
- Special machine construction
- High-tech design

**Installation dimensions**

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**3D CAD, configurators, service life calculation and more**

- **www.igus.co.uk/TRLF**
triflex® R | TRC-TRE-TRCF-TRL-TRLF | Accessories

Standard mounting brackets | With strain relief

With integrated strain relief tiewrap plates
TR.40.01 - TR.100.01

- Recommended for TRC/TRE/TCF,
- also compatible with TRL/TRLF
- Standard fixation onto the robot or
  machine, with strain relief

Strain reliefs are for use on the fixed end and/or moving end.

1) Standard mounting brackets

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- Alternative: light mounting bracket
- Available as ESD version from stock

2) Available as ESD version from stock

3) Only for special size TRCF 85, 240.0 with 240 degree bend radius

4) Available for delivery upon request. Please consult igus® for delivery time.

Standard mounting brackets | Without strain relief

Without strain relief, only for
TR.40.02 - TR.100.02

- Recommended for TRC/TRE/TCF,
- also compatible with TRL/TRLF
- Standard fixation onto the machine/
  robot, without strain relief
- Can also serve as intermediate
  bracket

Standard fixation onto the machine/
robot, without strain relief

| Ø | Part No. without strain relief
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- Only for special size TRCF 85, 240.0 with 240 degree bend radius

Indices:
- Ø: Diameter
- B: Length
- C: Width
- D: Hole Diameter
- E: Thickness
- F: Length

Strain reliefs are for use on the fixed end and/or moving end.

1) Standard through holes in Ø F
2) Available as ESD version from stock
3) Only for special size TRCF 85, 240.0 with 240 degree bend radius
4) Available for delivery upon request. Please consult igus® for delivery time.

More information ➤ www.igus.co.uk/triflexR

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
Light mounting brackets | With strain relief

- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/robot, with strain relief
- Options with long or short strain relief

### Index

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<th>Part No. with long strain relief</th>
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(1) For moving end bolt suitable only for series TRL/TRLF

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Light mounting brackets | Without strain relief

- Recommended for TRL/TRLF, also compatible with TRC/TRE/TRCF
- Light fixation onto the machine/robot, without strain relief
- Can also serve as intermediate bracket

### Without strain relief

#### TL.30.01.Z0 - TL.100.01.Z0

- TL.30.01.Z1
- TL.40.01.Z1
- TL.60.01.Z1
- TL.65.01.Z1
- TL.70.01.Z1
- TL.85.01.Z1
- TL.100.01.Z1

### Intermediate bracket

#### TL.30.01.Z0 - TL.100.01.Z0

- TL.30.01.Z2
- TL.40.01.Z2
- TL.60.01.Z2
- TL.65.01.Z2
- TL.70.01.Z2
- TL.85.01.Z2
- TL.100.01.Z2

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More information ➤ www.igus.co.uk/triflexR

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
Mounting brackets | With radius support, only for TR-40.09 - TR-100.09

- The triflex® R radius support for triflex® R energy supply at the most highly stressed points (axis 6)
- Provides higher operational reliability for robotic applications

Mounting brackets | With radius support, only for TR-125.09

Gliding feed-throughs

- The gliding feed-through enables easy guidance of the e-chain® and can also be used as an additional guide
- Gliding feed-through with swivel bearing ▶ Page 892

Gliding feed-through | For TRC-TRE-TRCF

- Standard: through holes in Ø G
- Option: with insert nuts, steel, M6/M8

Gliding feed-through, only for TL.30.05

- Part No. with gliding feed-through

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*TR-100.05 with 3 holes

Gliding feed-through, only for TR-40.05 + TR-60-85.05

- Part No.

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More information ▶ www.igus.co.uk/triflexR

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/triflexR
Swivel bearing-mounting brackets | With strain relief | For TRC·TRE·TRCF·TRL·TRLF

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4) Only for special size TRCF.85.240.0 with 240 degree bend radius
5) Available upon request. Please consult igus® for delivery time.

Swivel bearing-mounting brackets | Without strain relief | For TRC·TRE·TRCF·TRL·TRLF

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4) Only for special size TRCF.85.240.0 with 240 degree bend radius
Swivel bearing gliding feed-throughs

For TRC·TRE·TRCF

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4) Only for special size TRCF.85.240.0 with 240 degree bend radius

Protectors

For TRC·TRE·TRCF

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</table>

4) Only for special size TRCF.85.240.0 with 240 degree bend radius

Optional protectors can be fitted at contact points
- For extreme operations and long service life
- Easy gliding over edges
- Damping, light, freely positionable
- Easy to fit and quick replacement
- Protector with quick-release fastener also available

More information ➤ www.igus.co.uk/triflexR

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
### Heavy duty connections for axis 6

**Heavy duty connection Standard**

TR.60.20.XX - TR.125.20.XX

- Heavy duty connection - standard
- For cables with large cross section
- For heavy hydraulic hoses
- Double C-profile for CFX clamps
- igus® chainfix clamps must be ordered separately

**Part No. with desired diameter for the axis 6 clamp | ø [mm]**

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**Heavy duty connection - with radius support**

TR.60.23.XX - TR.125.23.XX

- With radius support
- For cables with large cross section
- For heavy hydraulic hoses
- Double C-profile for CFX clamps
- igus® chainfix clamps must be ordered separately

**Part No. with desired diameter for the axis 6 clamp | ø [mm]**

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**Part No. with desired diameter for the axis 6 clamp | ø [mm]**

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For TRC·TRE·TRCF

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**Part No. with desired diameter for the axis 6 clamp | ø [mm]**

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For TRC·TRE·TRCF

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**Part No. with desired diameter for the axis 6 clamp | ø [mm]**

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For TRC·TRE·TRCF

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Compact connections for clamp axis 6 | With strain relief

- With integrated strain relief tie-wrap plates
- Safe and simple securing of the cables with cable ties
- Various adjustment options

Compact connections | With strain relief | For TRC-TRE-TRCF

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Standard clamp for axis 6: ø 30mm

4) Only for special size TRCF.85.240 with 240 degree bend radius
5) Available upon request. Please consult igus® for delivery time.

Part No. with desired diameter for the axis 6 clamp | 30 | 32 | 34 | e.g. TR.100.21.30

Compact connections without strain relief

- Without strain relief
- Space-saving
- Various adjustment options

Compact connections | Without strain relief | For TRC-TRE-TRCF

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<th>Ø</th>
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Standard clamp for axis 6: ø 30mm

4) Only for special size TRCF.85.240 with 240 degree bend radius

Part No. with desired diameter for the axis 6 clamp | 30 | 32 | 34 | e.g. TR.100.21.02.30

More information ► www.igus.co.uk/triflexR
3D CAD, configurators, service life calculation and more ► www.igus.co.uk/triflexR
**triflex® R | Series TRC·TRE·TRCF | Accessories**

Quick exchange kit for clamp axis 6

![Quick exchange kit](image)

- Exchange in seconds
- No-repeat alignment required
- Exchange the triflex® unit incl. cables without tools
- Option available with strain relief

**Quick exchange kit | For TRC·TRE·TRCF**

<table>
<thead>
<tr>
<th>Ø</th>
<th>Part No. quick-change unit</th>
<th>Clamp</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tbody>
<tr>
<td>30.</td>
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<td>32</td>
<td>34</td>
<td>30</td>
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<tr>
<td>40.</td>
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<td>32</td>
<td>34</td>
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<tr>
<td>50.</td>
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<tr>
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<td>30</td>
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<tr>
<td>65, 240</td>
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<tr>
<td>125.</td>
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<td>–</td>
<td>–</td>
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<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

Standard clamp for axis 6: ø 30mm

- Only for special size TRCF.85.240.0 with 240 degree bend radius

Part No. with desired diameter for the axis 6 clamp | Ø 30 | Ø 32 | Ø 34 | e.g. TR.100.22.30

---

**triflex® R | Clamps | Accessories**

**chainfix | Single clamp incl. bottom saddles**

- For use with heavy-duty connection
- TRXX.20 / TRXX.23 and quick release unit TRXX.22
- Reliably absorbs tensile forces even for larger cable diameters
- Specifically recommended for solid welding cables and rigid hydraulic hoses
- Space- and time-saving assembly onto the C-profile
- Simple assembly with hex head set screw
- High strength for dynamic applications with improved stacker elements
- Built-in ribs on the stackers give secure grip on the cables
- Steel (material galvanised steel) or stainless steel (material 1.4301/AISI 304) available

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>≤ Ø</th>
<th>B</th>
<th>H</th>
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<tr>
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<td>stainless steel*</td>
<td>[mm]</td>
<td>[mm]</td>
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<td>CFX12.1.E</td>
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<td>52</td>
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<tr>
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<td>CFX18.1.E</td>
<td>16 - 18</td>
<td>22</td>
<td>54</td>
</tr>
<tr>
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<td>18 - 20</td>
<td>24</td>
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<td>22 - 24</td>
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<td>24 - 26</td>
<td>30</td>
<td>62</td>
</tr>
<tr>
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<td>CFX30.1.E</td>
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<td>71</td>
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<tr>
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<td>CFX34.1.E</td>
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</table>

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
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<th>H</th>
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<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
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<tr>
<td>CFX22</td>
<td>CFX22.1</td>
<td>20 - 22</td>
<td>26</td>
<td>58</td>
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<tr>
<td>CFX24</td>
<td>CFX24.1</td>
<td>22 - 24</td>
<td>28</td>
<td>60</td>
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<td>CFX26</td>
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<td>CFX30</td>
<td>CFX30.1</td>
<td>26 - 30</td>
<td>34</td>
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<tr>
<td>CFX34</td>
<td>CFX34.1</td>
<td>30 - 34</td>
<td>38</td>
<td>75</td>
</tr>
</tbody>
</table>

*Stainless steel material: 1.4301/AISI 304

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Individual strain relief for every cable offers security and easy replacement

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898  More information ▶ www.igus.co.uk/triflexR

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899  3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/triflexR
### triflex® R | Series TRC-TRE-TRL | Accessories

**Mounting brackets for "Universal Robots" - UR brackets**

*Static*

The "Universal Robots" company makes easy-to-use, lightweight robot systems. The triflex® R 30 and 40 sizes are a perfect fit for the UR3, UR5 and UR10 robot systems, both technically and visually. Connecting the system is quick and easy when using the UR brackets.

- Safe cable guidance with triflex® R for "universal robots"
- Easy connection with screw clips
- For UR3, UR5 and UR10 robots
- For TRC, TRE, TRL: Ø 30 and 40mm

#### Overview triflex® R e-chains® | For TRC-TRE-TRL

<table>
<thead>
<tr>
<th>Principle sketch</th>
<th>Part No. series</th>
<th>B1 [mm]</th>
<th>B2 [mm]</th>
<th>B₃ [mm]</th>
<th>R [mm]</th>
<th>d₁ [mm]</th>
<th>d₂ [mm]</th>
<th>Pitch [°]</th>
<th>Links per m</th>
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</thead>
<tbody>
<tr>
<td><strong>Series TRC - enclosed design</strong></td>
<td>TRC.30.050.0</td>
<td>12</td>
<td>10</td>
<td>34.5</td>
<td>050</td>
<td>10</td>
<td>8</td>
<td>11.3</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td>TRC.40.058.0</td>
<td>15</td>
<td>13</td>
<td>43</td>
<td>058</td>
<td>13</td>
<td>11</td>
<td>13.9</td>
<td>72</td>
</tr>
</tbody>
</table>

| **Series TRE - "easy" design** | TRE.30.050.0 | 12     | 10     | 34.5   | 050    | 10     | 8      | 11.3   | 89         |
|                               | TRE.40.058.0.B | 15     | 13     | 43     | 058    | 13     | 11     | 13.9   | 72         |

| **Series TRL - light version of the "easy" design** | TRL.30.050.0 | 12.5   | 11     | 34.5   | 050    | 10     | 8      | 11.3   | 89         |
|                                                    | TRL.40.058.0 | 15     | 45     | 058    | 13     | 11     | 13.9   |          | 72         |

**PMA hoses overview | For PMAFLEX corrugated tubes**

<table>
<thead>
<tr>
<th>Principle sketch</th>
<th>Part No. series</th>
<th>Nominal width</th>
<th>Inner Ø</th>
<th>Outer Ø</th>
<th>Static R [mm]</th>
<th>Dynamic R [mm]</th>
<th>VE</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>I-PIST-29B</td>
<td>39</td>
<td>32</td>
<td>29.0</td>
<td>34.3</td>
<td>45</td>
<td>110</td>
</tr>
</tbody>
</table>

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### triflex® R | Series TRC-TRE-TRCF | Accessories

**Product range | Suitable for TRC.30 · TRE.30 · TRL.30 e-chains®**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. with strain relief</th>
<th>For UR-robot system (mm)</th>
<th>Ø Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.911.965.054.Z0</td>
<td>TR.911.965.054.Z1</td>
<td>UR3</td>
<td>054</td>
</tr>
<tr>
<td>TR.911.965.066.Z0</td>
<td>TR.911.965.066.Z1</td>
<td>UR3</td>
<td>066</td>
</tr>
<tr>
<td>TR.911.965.075.Z0</td>
<td>TR.911.965.075.Z1</td>
<td>UR5</td>
<td>075</td>
</tr>
<tr>
<td>TR.911.965.086.Z0</td>
<td>TR.911.965.086.Z1</td>
<td>UR5</td>
<td>086</td>
</tr>
<tr>
<td>TR.911.965.108.Z0</td>
<td>TR.911.965.108.Z1</td>
<td>UR10</td>
<td>108</td>
</tr>
</tbody>
</table>

**Product range | Suitable for TRC.40 · TRE.40 · TRL.40 e-chains®**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. with strain relief</th>
<th>For UR-robot system (mm)</th>
<th>Ø Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.911.966.054.Z0</td>
<td>TR.911.966.054.Z1</td>
<td>UR3</td>
<td>054</td>
</tr>
<tr>
<td>TR.911.966.066.Z0</td>
<td>TR.911.966.066.Z1</td>
<td>UR3</td>
<td>066</td>
</tr>
<tr>
<td>TR.911.966.075.Z0</td>
<td>TR.911.966.075.Z1</td>
<td>UR5</td>
<td>075</td>
</tr>
<tr>
<td>TR.911.966.086.Z0</td>
<td>TR.911.966.086.Z1</td>
<td>UR5</td>
<td>086</td>
</tr>
<tr>
<td>TR.911.966.108.Z0</td>
<td>TR.911.966.108.Z1</td>
<td>UR10</td>
<td>108</td>
</tr>
</tbody>
</table>

**Product range | Suitable for PMA hose I-PIST-29B (optional)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No. with strain relief</th>
<th>For UR-robot system (mm)</th>
<th>Ø Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.914.836.054.Z0</td>
<td>TR.914.836.054.Z1</td>
<td>UR3</td>
<td>054</td>
</tr>
<tr>
<td>TR.914.836.066.Z0</td>
<td>TR.914.836.066.Z1</td>
<td>UR3</td>
<td>066</td>
</tr>
<tr>
<td>TR.914.836.075.Z0</td>
<td>TR.914.836.075.Z1</td>
<td>UR5</td>
<td>075</td>
</tr>
<tr>
<td>TR.914.836.086.Z0</td>
<td>TR.914.836.086.Z1</td>
<td>UR5</td>
<td>086</td>
</tr>
<tr>
<td>TR.914.836.108.Z0</td>
<td>TR.914.836.108.Z1</td>
<td>UR10</td>
<td>108</td>
</tr>
</tbody>
</table>

---

*Static R = minimum recommended bend radius for static (fixed) installation** Dynamic R = minimum recommended bend radius for dynamic (flexible) laying

For more information visit www.igus.co.uk/UR-brackets
triflex® R | Series TRC·TRE·TRL | Accessories
For KUKA LBR iiwa

Mounting brackets for KUKA LBR iiwa

- Safe cable guidance with triflex® R for KUKA LBR iiwa robots
- For KUKA LBR iiwa 14 R820 and KUKA LBR iiwa 7 R800
- Easy connection with screw clips
- For 2 triflex® R sizes: Ø 30 and 40
- For TRC, TRE and TRL e-chains®

Overview triflex® R e-chains® | For TRC·TRE·TRL

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Without strain relief</th>
<th>With strain relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series TRC - enclosed design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRC.30.050.0</td>
<td>12 10 34.5 050</td>
<td>10 8 11.3 89</td>
</tr>
<tr>
<td>TRC.40.058.0</td>
<td>15 13 43 058</td>
<td>13 11 13.9 72</td>
</tr>
<tr>
<td>Series TRE - &quot;easy&quot; design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRE.30.050.0</td>
<td>12 10 34.5 050</td>
<td>10 8 11.3 89</td>
</tr>
<tr>
<td>TRE.40.058.0</td>
<td>15 13 43 058</td>
<td>13 11 13.9 72</td>
</tr>
<tr>
<td>Series TRL - light version of the &quot;easy&quot; design</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRL.30.050.0</td>
<td>12.5 11 34.5 050</td>
<td>10 8 11.3 89</td>
</tr>
<tr>
<td>TRL.40.058.0</td>
<td>15 – 45 058</td>
<td>13 – 13.9 72</td>
</tr>
</tbody>
</table>

Product range | Suitable for TRC.30 · TRE.30 · TRL.30 e-chains®

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Without strain relief</th>
<th>With strain relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.914.951.Z0</td>
<td>136</td>
<td>LBR iiwa 14 R820</td>
</tr>
<tr>
<td>TR.914.951.Z1</td>
<td>136</td>
<td>LBR iiwa 7 R800</td>
</tr>
</tbody>
</table>

Product range | Suitable for TRC.40 · TRE.40 · TRL.40 e-chains®

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Without strain relief</th>
<th>With strain relief</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.914.952.Z0</td>
<td>136</td>
<td>LBR iiwa 14 R820</td>
</tr>
<tr>
<td>TR.914.952.Z1</td>
<td>136</td>
<td>LBR iiwa 7 R800</td>
</tr>
</tbody>
</table>

More information ➤ www.igus.co.uk/UR-brackets

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
triflex® R | Series TRC·TRE·TRCF·TRL·TRLF | Accessories

Standard protective jacket

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Part No.</th>
<th>Standard lengths(m)</th>
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</thead>
<tbody>
<tr>
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<tr>
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<tr>
<td>125.</td>
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</table>

1) Available upon request. 2) Special lengths upon request
Part No. with the desired standard value for the length XXXX
Example: TR.60.14, 500

Heat shield protective jacket

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Part No.</th>
<th>Standard lengths(m)</th>
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<tbody>
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<td>TR.50.16</td>
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<tr>
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<td>TR.60.16</td>
<td>500 1000 1500 2000</td>
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<tr>
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<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>70.</td>
<td>TR.70.16</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>85.</td>
<td>TR.85.16</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
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<td>TR.100.16</td>
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<tr>
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<td>TR.125.16</td>
<td>500 1000 1500 2000</td>
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</tbody>
</table>

1) Available upon request. 2) Special lengths upon request
Part No. with the desired standard value for the length XXXX
Example: TR.60.16, 500

Wear resistant protective jacket

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Part No.</th>
<th>Standard lengths(m)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>–</td>
</tr>
<tr>
<td>40.</td>
<td>TR.40.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>50.</td>
<td>TR.50.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>60.</td>
<td>TR.60.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>65.</td>
<td>TR.65.19</td>
<td>500 1000 1500 2000</td>
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<tr>
<td>70.</td>
<td>TR.70.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>85.</td>
<td>TR.85.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>100.</td>
<td>TR.100.19</td>
<td>500 1000 1500 2000</td>
</tr>
<tr>
<td>125.</td>
<td>TR.125.19</td>
<td>500 1000 1500 2000</td>
</tr>
</tbody>
</table>

1) Available upon request. 2) Special lengths upon request
Part No. with the desired standard value for the length XXXX
Example: TR.60.19, 500

triflex® R | Filling interior separation configurator

Quick and easy creation of interior separation layouts for triflex® R. After selecting the cables, they can be dragged & dropped into the e-chain® layout. The interior separation configurator creates a parts list of the e-chain® and the cables contained in the configuration. The configurations can be saved and reloaded. The entire configuration can be transferred to the shopping cart with a click.

Quick and easy interior separation configurator
Accounts for maximum filling rules for cables and hoses
Creation of parts lists
Easy enquiry and ordering

More information and interior separation configurator
► www.igus.co.uk/triflexR-IA

1. Select cables, hoses and lengths
2. Select e-chain® and size
3. Fill the e-chain® with cables and hoses
4. Result: parts list, price and drawings

triflex® R - readychain® dress-packs
Customised system consisting of the triflex® R, chainflex® and connectors
• Eliminate storage costs for cables, e-chains® and plugs
• Shorten turnaround times by half, minimise your machine downtime
• Reduce the number of suppliers and orders by 75%

More information ► www.readychain.co.uk
triflex® R retraction systems - prevent loop formation on robots

The global growth in automation for industrial production is leading to more and more complex robotic applications. Target cycle times are getting shorter and downtime must also be reduced. To provide reliable protection against premature system failure and downtime, we recommend the use of a triflex® R e-chain®, especially to bridge the last three axes on robots. The length change that results from the robot’s movement is compensated by our triflex® R retraction systems - prevent loop formation on robots. This constantly guides the igus® e-chain® in a controlled way to prevent the formation of loops in the robot’s working area.

4 triflex® R retraction system types available from stock:

- **RSP**
  - Pneumatic retraction system
  - From page 908
  - Advantages of RSP:
    - For series TRC·TRE·TRCF with ø-index of 60-125 mm
    - For robots with a load capacity from approx. 50 kg
    - Up to 780 mm retraction length possible
    - For applications with a high fill weight
    - For a sensor-based monitoring
    - Constant force over the complete travel
    - Maintenance-free igus®
    - Cost-effective
    - Suitable for highly dynamic movements
    - For series TRC·TRE·TRCF with ø-index of 40-100 mm
    - Up to 500 mm retraction length possible
    - For small robots, very light
    - For series TRC·TRE·TRCF with ø-index of 40-100 mm
    - Up to 670 mm retraction length possible
    - For robots with a load capacity from approx. 10 kg

- **RSE linear**
  - Cost-effective retraction system, linear
  - From page 920
  - Advantages of RSE linear:
    - For series TRC·TRE·TRCF with ø-index of 40-125 mm
    - Special linear guide avoids small bend radii
    - Up to 490 mm retraction length possible
    - Simple, linear retraction without loops, fibre-rod guides or rollers
    - Cost-effective
    - Maintenance-free igus® drylin® W linear unit
    - TRCF not available for each width, see product range

- **RSE**
  - Cost-effective retraction system with deflection
  - From page 926
  - Advantages of RSE:
    - For series TRC·TRE·TRCF with ø-index of 40-50 mm
    - For small robots, very light
    - Up to 500 mm retraction length possible
    - For highly dynamic movements
    - Cost-effective
    - Maintenance-free igus® drylin® W linear unit

- **RS**
  - Modular retraction system
  - From page 914
  - Advantages of RS:
    - For series TRC·TRE with ø-index of 40-100 mm
    - For robots with a load capacity from approx. 10 kg
    - Up to 670 mm retraction length possible
    - If a linear guide system is not needed
    - For use with adverse environmental influences
    - Retraction force provided by integrated fibre-rods

Choosing the right e-chain® size and retraction system

If you want to select a suitable retraction system yourself, please ensure that you observe the maximum cable diameter and usage data.

1. The largest cable diameter \( d_1 \) ...
2. ... and max. usable e-chain® cross section area \( d_2 \) ...
3. ... determine the necessary \( \Omega \) index of the triflex® R ...
4. ... select from 4 retraction systems options:

- **RSP**
- **RS**
- **RSE linear**
- **RSE**

Interior separation configurator - quick and easy creation of interior layouts for triflex® R. More information ▶ www.igus.co.uk/triflexR-IA

Selection tool for triflex® R retraction systems

| Possible \( \Omega \) index for triflex® R retraction systems |
|-----------------|-----------------|-----------------|-----------------|
| **For series** | **RSP** | **RS** | **RSE linear** | **RSE** |
| TRC             | 60 - 125      | 40 - 100       | 40 - 125        | 40 - 50 |
| TRE             | 60 - 125      | 40 - 100       | 40 - 125        | 40 - 50 |
| TRCF            | 65 - 100      | 65 - 100       |                  |        |
| TRL*            | -*            | -*             | -*              | -*    |
| TRLF*           | -*            | -*             | -*              | -*    |

- * Retraction systems not available for this series

Selection tool for triflex® R retraction systems

More information ▶ www.igus.co.uk/triflexR
triflex® R | RSP | For series TRC·TRE·TRCF | Accessories

Pneumatic retraction system - triflex® RSP

triflex® RSP prevents loops on the robot head, with a continuously adjustable retraction force. Extension lengths of up to 780mm enable a secure guidance of the cables and hoses, even with large arm diameters and very complex movements. The retraction forces can be adjusted using a pneumatic cylinder. Whether light or heavy fill weights, long or short robot arms - with the igus® RSP retraction system the retraction force can be adjusted to the individual application.

- For axis 3-6 on industrial robots
- Larger retraction forces than RSP system
- Even larger e-chains® up to Ø 125mm can be guided safely
- Almost constant force over the complete travel, even with heavy fill weights
- The end position can be monitored so damage can be prevented
- Mounting options for numerous robot models and manufacturers with adapter consoles
- Very low energy consumption with integrated air reservoir

Optional accessories | RSP pneumatic retraction system

- Adjustment unit - for accurate adjustment of the system position
- Adapter consoles - for custom mounting options
- Axis 6 clamp - for triflex® R mounting bracket

Pneumatic retraction system - triflex® RSP prevents loops in the robot’s working area

triflex® RSP system on a 6-axis robot
### Dimensions | RSP pneumatic retraction system

**Technical data**

**Pressure compensation unit**

**Fixed end left**

TR.RSP.XX.L

**Fixed end right**

TR.RSP.XX.R

**Retraction length**

<table>
<thead>
<tr>
<th>Index</th>
<th>Part No. fixed end left</th>
<th>Part No. fixed end right</th>
<th>Retraction length (°)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>40.</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>50.</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>60.</td>
<td>TR.RSP.60.L</td>
<td>TR.RSP.60.R</td>
<td>580</td>
</tr>
<tr>
<td>65.</td>
<td>TR.RSP.65.L</td>
<td>TR.RSP.65.R</td>
<td>580</td>
</tr>
<tr>
<td>70.</td>
<td>TR.RSP.70.L</td>
<td>TR.RSP.70.R</td>
<td>580</td>
</tr>
<tr>
<td>85.</td>
<td>TR.RSP.85.L</td>
<td>TR.RSP.85.R</td>
<td>620</td>
</tr>
<tr>
<td>100.</td>
<td>TR.RSP.100.L</td>
<td>TR.RSP.100.R</td>
<td>620</td>
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<tr>
<td>125.</td>
<td>TR.RSP.125.L</td>
<td>TR.RSP.125.R</td>
<td>780</td>
</tr>
</tbody>
</table>

**Pressure compensation unit - option for the RSP**

- **G liding feed-through**
- **Mounting bracket with strain relief**

**Order key**

**Part No.**

TR.RSP.XX.L / R

**Index**

- R = Fixed end right
- L = Fixed end left

**System**

**e-chains® series**

**Dimensions**

- **Fixed end left**
  - TR.RSP.XX.L
- **Fixed end right**
  - TR.RSP.XX.R

**Pressure compensation unit**

- **Index**
  - ≤ [mm]
  - [mm]
  - [mm]
  - [mm]
  - [mm]
  - [mm]

**Weight**

- Plus 2.3 kg for pressure compensation unit

---

**More information**

[www.igus.co.uk/triflex-RSP](http://www.igus.co.uk/triflex-RSP)

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**Product range | RSP pneumatic retraction system**

**Product range**

- **3D CAD, configurators, service life calculation and more**

[www.igus.co.uk/triflex-R](http://www.igus.co.uk/triflex-R)
triflex® R | RSP For series TRC-TRE-TRCF | Accessories

RSP retraction system and matching e-chains

System design | RSP and matching e-chains

**Matching triflex® R e-chains for RSP**
- TRC.RSP.XX.R.LLLL.0
- TRE.RSP.XX.R.LLLL.0(B)
- TRCF.RSP.XX.R.LLLL.0

**Overall length**
- additional length from the gliding feed-through \( LLLL + \)
- the e-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

**Sample order of a complete TR.RSP system, ø-Index 60, fixed end on the left, and e-chain (standard length: 500mm)**

**System**
- Insert ø Index XX / select fixed end \( L \) / \( R \)

**+ e-chain**
- Insert ø Index XX / Insert bend radius \( R \) / Insert standard length \( LLLL \)

**Order text:** TR.RSP.60.L + TRC.RSP.60.0OS7.0500.0

Order key e-chains
- TRC.RSP.XX.R.LLLL.0
- TRE.RSP.XX.R.LLLL.0.B
- TRCF.RSP.XX.R.LLLL.0

---

triflex® R | RSP For series TRC-TRE-TRCF | Accessories

RSP e-chains® and cable length calculation

**Calculating the overall chain length | RSP e-chains**

**Ø Index** | **Part No. TRC enclosed** | **Part No. TRE “easy” design** | **Part No. TRCF with snap lock mechanism**
--- | --- | --- | ---
30. | – | – | –
40. | – | – | –
50. | – | – | –
60. | TRC.RSP.60.087.LLLL.0 | TRE.RSP.60.087.LLLL.0.B | –
65. | TRC.RSP.65.135.LLLL.0 | TRE.RSP.65.135.LLLL.0.B | –
70. | TRC.RSP.70.110.LLLL.0 | TRE.RSP.70.110.LLLL.0.B | –
85. | TRC.RSP.85.135.LLLL.0 | TRE.RSP.85.135.LLLL.0.B | –
85. (R. 240) | – | – | –
100. | TRC.RSP.100.145.LLLL.0 | TRE.RSP.100.145.LLLL.0.B/C | –
125. | TRC.RSP.125.182.LLLL.0 | TRE.RSP.125.182.LLLL.0.B | –

1) Available for B- and C-versions

*Standard lengths from the gliding feed-through outside the system - special lengths upon request.

**e-chains® standard lengths**

| LLLL | 0500 | 1000 | 1500 | 2000 |
--- | --- | --- | --- | --- |

| E-chains | 087 | 135 | 145 | 182 |
--- | --- | --- | --- | --- |

Part No. with \( LLLL \) standard length value (measured from the gliding feed-through) corresponds to the robot arm length from axis 3.

For example: TRC.RSP.60.087.0500.0

**Appendix**

**Calculating the overall chain length**

**Ø Index** | **Bend radius \( R \)** | **e-chain length** | **Number of e-chains links** | **Total e-chain length**
--- | --- | --- | --- | ---
30. | – | – | – | –
40. | – | – | – | –
50. | – | – | – | –
60. | 087 | 1489 | 73 | LLLL + 1489
65. | 100 | 1432 | 62 | LLLL + 1432
70. | 110 | 1484 | 58 | LLLL + 1484
85. | 135 | 1622 | 53 | LLLL + 1622
85. (R. 240) | – | – | – | –
100. | 145 | 1656 | 48 | LLLL + 1656
125. | 182 | 1962 | 44 | LLLL + 1962

*Values are related to the e-chain length within the system

Please add the e-chain length within the system to the standard length \( LLLL \) (measured from the gliding feed-through) to get the overall chain length

---

912 More information ➤ www.igus.co.uk/triflex-RSP

913 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
triflex® R | RS | For series TRC·TRE | Accessories

Modular retraction system | advantages

- Up to 670mm retraction length possible with triflex® RS
- Gliding feed-through for close parallel guidance to the robotic arm
- Mounting brackets for secure fastening
- For TRC and TRE (matching e-chains® must be ordered separately)
- Single module, space-saving and quickly mounted on robot
- End stop for a defined yet free movement
- Retraction force provided by integrated fibre-rods

 comment: triflex® RS is a retraction system for robots with medium to high payloads. With triflex® RS, the multi-axis triflex® R e-chain® is routed parallel to the robot arm. Integrated fibre rods produce a directed pretension, avoiding the formation of loops in the working area of the robot head. This also allows applications to be implemented in very limited space. triflex® RS offers the possibility to design the energy supply for tools without stressing the cables, thus minimising downtimes.

- Space-saving, closely routed on the robot arm
- A system solution proven and tested in thousands of applications
- Universal installation
- Integrated fibre-rods - no external mechanical components such as springs or steel cables required!

Optional accessories | RS modular retraction system

- Cover - for additional mounting space and extreme movements
- Adjustment unit - for accurate adjustment of the system position
- Adapter consoles - for custom mounting options
- Axis 6 clamp - for triflex® R mounting bracket

triflex® RS for a low profile e-chain® guide. The triflex® RS retraction unit runs parallel to the robot arm.

Video at www.igus.co.uk/RS_Film

Option: triflex® RS with cover for more mounting space
triflex® R | RS | For series TRC·TRE | Accessories

### Technical data

#### Installation height | RS modular retraction system

<table>
<thead>
<tr>
<th>Fixed end left</th>
<th>Fixed end right</th>
<th>Fixed end left</th>
<th>Fixed end right</th>
</tr>
</thead>
<tbody>
<tr>
<td>TR.RS.40.L</td>
<td>TR.RS.40.R</td>
<td>TR.RS.XX.L</td>
<td>TR.RS.XX.R</td>
</tr>
</tbody>
</table>

#### RS modular retraction system (diagram shows fixed end left version)

Mounting bracket and gliding feed-through are included. Please order matching triflex® R e-chain® separately.

#### Gliding feed-through

Illustration shows triflex® RS ø index: 40

#### Mounting bracket

Illustration shows triflex® RS ø index: 60 - 100

### Product range | RS modular retraction system

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Part No.</th>
<th>Retraction length&lt;sup&gt;(1)&lt;/sup&gt;</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>50.</td>
<td>–</td>
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<td>–</td>
<td>–</td>
<td>–</td>
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</tr>
<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>70.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>85.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>100.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>125.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<sup>(1)</sup> These are the maximum values. In normal operation a filling of no more than 70% is advised.

Please order matching triflex® R e-chain® separately.

### Product range | Cover, optional

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Optional cover retrofit kit</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Load*</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>40.</td>
<td>TR.RS.40.COVER</td>
<td>101.7</td>
<td>550</td>
<td>567.5</td>
<td>244.6</td>
<td>1.5</td>
<td>2.6</td>
</tr>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>60.</td>
<td>TR.RS.60.COVER</td>
<td>170.7</td>
<td>850</td>
<td>880</td>
<td>344.6</td>
<td>3.5</td>
<td>7.2</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
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<tr>
<td>85.</td>
<td>TR.RS.85.COVER</td>
<td>170.7</td>
<td>850</td>
<td>880</td>
<td>344.6</td>
<td>3.5</td>
<td>7.2</td>
</tr>
<tr>
<td>100.</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>125.</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

<sup>*</sup>Maximum fill weight to be used with the cover

### Order key

- R = Fixed end right
- L = Fixed end left
- Ø Index
- System
- e-chains® series

More information ➤ www.igus.co.uk/triflex-RS

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
triflex® R | RS  For series TRC-TRE | Accessories
RS retraction system and matching e-chain®

System design | RS and matching e-chains®

Optional cover for additional installation space on the robot: TR.RS.XX.COVER

Matching triflex® R e-chains® for RS with integrated fibre-rods
TRC.RS.XX.R.LLLL.0
TRE.RS.XX.R.LLLL.0.B

RSE linear system (without e-chain®)+
Support plate +
Mounting bracket +
Gliding feed-through =
TR.RS.XX.L or TR.RS.XX.R

Overall length = additional length from the gliding feed-through LLLL + the e-chain® length within the system

Sample order of a complete TR.RS system, ø-Index 60, fixed end on the left, including cover and e-chain® (standard length: 500mm)

System
Insert ø-index XX / select fixed end L / R
TR.RS.XX.L
+ Cover
Insert ø-index XX (cover optional)
TR.RS.XX.COVER
+ e-chain®
Insert ø-index XX / Insert bend radius R / Insert standard length LLLL
TRC.RS.XX.R.LLLL.0

Order text: TR.RS.60.L + TR.RS.60.COVER + TRC.RS.60.087.0500.0

Order key e-chains®
TRC.RS.XX.R.LLLL.0
TRE.RS.XX.R.LLLL.0.B

triflex® R | RS  For series TRC-TRE | Accessories
RS e-chains® and cable length calculation

Product range | Matching e-chains® for RS

<table>
<thead>
<tr>
<th>Ø</th>
<th>Part No. TRC enclosed</th>
<th>Part No. TRE &quot;easy&quot; design</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>40.</td>
<td>TRC.RS.40.058. LLLL.0</td>
<td>TRE.RS.40.058. LLLL.0.B</td>
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<tr>
<td>50.</td>
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<tr>
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<td>TRE.RS.60.087. LLLL.0.B</td>
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<td>70.</td>
<td>–</td>
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<td>85.</td>
<td>TRC.RS.70.110. LLLL.0</td>
<td>TRE.RS.70.110. LLLL.0.B</td>
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<tr>
<td>85. (R 240)</td>
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<tr>
<td>100.</td>
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<td>TRE.RS.100.145. LLLL.0.B/C</td>
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<tr>
<td>125.</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

1) Available for B- and C-versions

e-chains® standard lengths*
LLLL (mm) 0500 1000 1500 2000
Part No. with LLLL standard length value (measured from the gliding feed-through) corresponds to the robot arm length from axis 3.
For example: TRE.RS.60.087.0500.0

Calculating the overall chain length | RS e-chains®

<table>
<thead>
<tr>
<th>Ø</th>
<th>Bend radius</th>
<th>e-chain® length*</th>
<th>Number of e-chains® links</th>
<th>Total e-chain® length</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
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<td>–</td>
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<td>–</td>
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<tr>
<td>40.</td>
<td>058</td>
<td>1251</td>
<td>90</td>
<td>LLLL + 1251</td>
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<tr>
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<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>60.</td>
<td>087</td>
<td>1734</td>
<td>85</td>
<td>LLLL + 1734</td>
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<tr>
<td>70.</td>
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<td>–</td>
<td>–</td>
</tr>
<tr>
<td>85.</td>
<td>135</td>
<td>2080</td>
<td>68</td>
<td>LLLL + 2080</td>
</tr>
<tr>
<td>85. (R 240)</td>
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<td>–</td>
<td>–</td>
</tr>
<tr>
<td>100.</td>
<td>145</td>
<td>2105</td>
<td>61</td>
<td>LLLL + 2105</td>
</tr>
<tr>
<td>125.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

*Values are related to the e-chain® length within the system.

Please add the e-chain® length within the system to the standard length LLLL (measured from the gliding feed-through) to get the overall chain length.

More information ➤ www.igus.co.uk/triflex-RS

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
Cost-effective, linear retraction system - triflex® RSE linear

The more complex the automated production technology, the greater the requirements placed on the energy supply system. It is increasingly the case that not only electric power and fluids have to be supplied to production robots; but also laser cables and supply hoses for rivets, pins and screws. As these often cannot function with small bend radii, the new triflex® RSE relies on very easy linear retraction without loops and spring rods or deflection rollers.

The purpose of the triflex® RSE retraction system is to hold the e-chain® as closely as possible to the robot arm in order to prevent the e-chain® from intruding upon or blocking the robot’s movements.

- Simple, linear retraction without bends, fibre-rods or guide rollers
- For series TRC·TRE·TRCF with a Ø index of 40-125mm
- Special linear guide avoids small bend radii
- Up to 490mm retraction length possible
- Cost-effective
- Maintenance-free igus® drylin® W linear unit

Optional accessories | RSE linear, cost-effective linear retraction system

- Adapter consoles - for custom mounting options
- Axis 6 clamp - for triflex®R mounting bracket

For TRC·TRE·TRCF series with a Ø index of 40-125mm (please order matching e-chains® separately)

Maintenance-free igus® drylin® W linear unit

Simple, linear retraction without, loops, fibre-rods or guide rollers

Special linear guide avoids small bend radii

Compact design, no loops

Cost-effective

For series TRC·TRE·TRCF with a Ø index of 40-125mm

Lightweight, linear TR·RSE·40 retraction system for small robots

Linear TR·RSE retraction system for sizes 60-125 with attachment brackets for a wide variety of robot models
triflex® R | RSE linear | For series TRC-TRE-TRCF | Accessories

**Dimensions | RSE linear, cost-effective linear retraction system**

Diagram shows triflex® RSE index: 40 - 50

Diagram shows triflex® RSE index: 60 - 125

Possible installation positions for TR.RS.60 - TR.RS.125 | RSE linear

**Installation**

**Position 01**

**Position 02**

**Position 03**

<table>
<thead>
<tr>
<th>Index</th>
<th>Part No.</th>
<th>Retraction length(1)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Weight</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
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<td>–</td>
<td>–</td>
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<tr>
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<tr>
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<td>231</td>
<td>231</td>
<td>9.9</td>
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<tr>
<td>65.</td>
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<td>10.5</td>
<td>–</td>
<td>TR.914.973.100</td>
</tr>
</tbody>
</table>

1) These are the maximum values. In normal operation a filling of no more than 70% is advised.

Please order matching triflex® R e-chain® separately. Optional RSE support must be ordered separately.

**RSE linear - retraction system**

Mounting bracket and gliding feed-through are included. Please order matching triflex® R e-chain® separately.

**Optional - RSE support for the lateral deflection of the triflex® R energy supply**

Gceding feed-through

**Order key**

TR.RSE.XX

**Thread size**

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>Thread size</th>
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<tbody>
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<td>90</td>
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</table>

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
triflex® R | RSE linear | For series TRC·TRE·TRCF | Accessories

RSE linear and matching e-chains®

System design | RSE linear and matching e-chain®

Matching triflex®R e-chain® for RSE linear
TRC.0.XX
TRE.0.XX.B
TRCF.0.XX

Excess length in direction A1 +
Dimension A +
Excess length in direction A6 =
Total e-chain® length

Limit protector

RSE linear system
(without e-chain®)
Mounting bracket +
Gliding feed-through =
TR.RSE.XX

Sample order of a complete TR.RSE linear system,
Ø index 40, and e-chain® (length: 2 m)

System
Insert Ø index XX
TR.RSE.XX

+ e-chain®
Insert Ø index XX / Insert bend radius R / Insert standard length LLLL in metres
2 m TRC.0.XX.R

+ Protector
Protector with quick-lock fastener
TR.XX.30

Order text:
TR.RSE.40. + 2 m TRC.0.XX.R + TR.40.30

Order key e-chains®
TRC.0.XX.R
TRE.0.XX.B
TRCF.0.XX.R

triflex® R | RSE linear | For series TRC·TRE·TRCF | Accessories

RSE linear e-chains® and cable length calculation

Product range | Matching e-chains® and protectors for RSE linear

<table>
<thead>
<tr>
<th>Ø</th>
<th>Part No. TRC enclosed</th>
<th>Part No. TRE &quot;easy&quot; design</th>
<th>Part No. TRC with snap lock mechanism</th>
<th>Protector with screw fastener</th>
<th>Protector with quick-lock fastener</th>
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<tbody>
<tr>
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<td>–</td>
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<td>–</td>
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<td>TR.40.30</td>
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<td>TR.50.10</td>
<td>–</td>
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<tr>
<td>60.</td>
<td>TRC.087.0</td>
<td>TRE.087.0.B</td>
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<td>TR.60.10</td>
<td>TR.60.30</td>
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<tr>
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<td>TR.85.30</td>
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<tr>
<td>85. (240°)</td>
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<td>–</td>
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<td>TR.125.10</td>
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</table>

1) Available for B- and C-versions

Please order e-chains® as piece parts and purchase a protector for each one.

Please order protectors with screw connections or quick release as limit protectors.

To calculate the total chain length, add the desired excess length from axis 1 and axis 6 to dimension A (lower table). Additionally, at least 1 limit protector must be ordered.

Please note that all triflex® R e-chains can be lengthened and shortened individually and can be customized to meet the needs of your application.

Calculating the overall chain length | RSE linear e-chains®

<table>
<thead>
<tr>
<th>Ø</th>
<th>Bend radius R [mm]</th>
<th>A [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>30.</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>40.</td>
<td>058</td>
<td>390</td>
</tr>
<tr>
<td>50.</td>
<td>080</td>
<td>390</td>
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<tr>
<td>60.</td>
<td>087</td>
<td>750</td>
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<tr>
<td>65.</td>
<td>100</td>
<td>750</td>
</tr>
<tr>
<td>70.</td>
<td>110</td>
<td>750</td>
</tr>
<tr>
<td>85.</td>
<td>135</td>
<td>750</td>
</tr>
<tr>
<td>85. (240°)</td>
<td>240</td>
<td>750</td>
</tr>
<tr>
<td>100.</td>
<td>145</td>
<td>750</td>
</tr>
<tr>
<td>125.</td>
<td>182</td>
<td>750</td>
</tr>
</tbody>
</table>

Excess length in direction A6 + Dimension A +
Excess length in direction A1 = total chain length
Cost-effective retraction system with deflection for small robots - triflex® RSE

Specially developed for robots with small to medium cable and hose filling, the igus® triflex® RSE retraction system offers a way to prevent loop formation in the workspace of the robot, even in highly dynamic applications.

- For series TRC-TRE sizes 40 and 50mm
- Extremely fast response, even in highly dynamic robot programs
- Low weight, very little reduction in robot handling capacity
- Universal adjustable installation brackets
- Maintenance and lubrication-free igus® drylin® W linear unit
- For maximum degrees of freedom
- For cable diameters up to 18.8mm

Also for high accelerations (due to low weight)

Reliable and controlled energy supply, even in confined space

e-chain® is guided closely to the arm with a low profile

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
Dimensions | RSE cost-effective retraction system

<table>
<thead>
<tr>
<th>Fixed end left</th>
<th>Fixed end right</th>
<th>Fixed end left</th>
<th>Fixed end right</th>
</tr>
</thead>
</table>

RSE modular retraction system (diagram shows fixed end right version)

- Mounting bracket and gliding feed-through are included.
- Easily adjustable adapter consoles

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Retraction length (°)</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>Weight</th>
</tr>
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<tr>
<td>fixed end left</td>
<td>fixed end right</td>
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<td></td>
<td></td>
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<td></td>
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<tr>
<td>TR.RSE.02.40.L</td>
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<td>TR.RSE.02.40.R</td>
<td>497 275 132 79</td>
<td>79</td>
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<td></td>
<td></td>
</tr>
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</table>

1) These are the maximum values. In normal operation a filling of no more than 70% is advised.

Order key

- TR.RSE.XX.L / R
- R = Fixed end right
- L = Fixed end left
- D = Index
- System and e-chains® series
triflex® R | RSE | For series TRC-TRE | Accessories
RSE and matching e-chains®

System design | RSE and matching e-chains®
Cover for additional installation space on the robot, optional: TR.RSE.XX.COVER

Matching triflex® R e-chains® for RSE
TRC.RSE.XX.R,LLLL0
TRE.RSE.XX.R,LLLL0.B

Overall length = additional length from the gliding feed-through LLLL + the e-chain® length within the system

RSE system
(e-chain® not included) +
Mounting bracket +
Gilding feed-through = TR.RSE.(02).XX.L or TR.RSE.(02).XX.R

Product range | Matching e-chains® for RSE

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Part No. TRC enclosed</th>
<th>Part No. TRE &quot;easy&quot; design</th>
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<tbody>
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<td>TRE.RSE.50.080. LLLL0.B</td>
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</tbody>
</table>

*Standard lengths from the gliding feed-through outside the system - special lengths upon request.
e-chains® standard lengths*
LLLL [mm]: 0500 | 0750 | 1000 | 1250
Part No. with LLLL standard length value (measured from the gliding feed-through) corresponds to the robot arm length from axis 3.
For example: TRC.RSE.40.058.0500.0

Calculating the overall chain length | RSE e-chains®

<table>
<thead>
<tr>
<th>Ø Index</th>
<th>Bend radius R [mm]</th>
<th>e-chain® length* [mm]</th>
<th>Number of e-chains® links</th>
<th>Total e-chain® length [mm]</th>
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</thead>
<tbody>
<tr>
<td>40.</td>
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<td>65</td>
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<tr>
<td>50.</td>
<td>080</td>
<td>1044</td>
<td>80</td>
<td>LLLL + 1044</td>
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</tbody>
</table>

*Values are related to the e-chain® length within the system.
Please add the e-chain® length within the system to the standard length LLLL (measured from the gliding feed-through) to get the overall chain length.

Sample order of a complete TR.RSE system, Ø Index 40, fixed end on the left, including cover and e-chain® (standard length: 500mm)

System
Insert Ø index XX / select fixed end L / R

+ Cover
Insert Ø index XX (cover optional)

+ e-chain®
Insert Ø index XX / Insert bend radius R / Insert standard length LLLL

TRC.RSE.XX.R,LLLL0
TRE.RSE.XX.R,LLLL0.B

Order key e-chains®
TRC.RSE.XX.R,LLLL0
TRE.RSE.XX.R,LLLL0.B

Default colour black
Additional length
R Bend radius
Ø Index
System
e-chain® series

More information ➤ www.igus.co.uk/triflex-RSE

triflex® R | RSE | For series TRC-TRE | Accessories
RSE e-chains® and cable length calculation

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR

930
931
triflex® R | Series TRC-TRE | Accessories
Fibre-rod module | Universal mounting kits

Fibre-rod modules for a directional pretension of the e-chain®

We supply fully assembled fibre-rod modules for triflex® R e-chain® Series TRC and TRE. The integrated fibre-ropds generate a directional pretension for the e-chain®. This system creates a unique choice of movements for the energy supply system to the final axis of industrial robots. The fibre-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 end allows flexible movement. The five rear e-chain® links are rigidly connected to allow relative movement of the integrated fibre-rods. This results in a fully contactless and therefore zero-wear energy supply system, designed for moderate movements with limited rotational motion of the axes. Additional e-chain® without fibre-rods for the final axis area needs to be ordered separately.

Universal mounting kit | For TRC-TRE

- Stainless steel angle tube with attachment brackets
- Freely positionable
- The energy supply system can be quickly and easily adapted to new programming sequences of the robot
- With 2 mounting brackets for sizes 40 and 60 - with 3 mounting brackets starting at size 70

<table>
<thead>
<tr>
<th>Ø</th>
<th>Part No. A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Weight</th>
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<tbody>
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<td>475</td>
<td>325</td>
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<tr>
<td>60</td>
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<td>625</td>
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<td>126</td>
<td>875</td>
<td>575</td>
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</tbody>
</table>

*Maximum recommended length for fibre-rod modules

1) For die C version please add the index _C_
Adjustment unit for RSP and RS retraction systems

The optional adjustment unit is installed between the robot arm and the retraction system, and allows accurate adjustments of the position of the igus® retraction system on the robot arm. Particularly useful for multiple working programs using the same cable package.

Part No. TR.907.595
weight: 5.0kg

Adapter consoles for RSP, RS and RSE retraction systems

The RS and RSP retraction systems provide all widely used drill patterns for attachment: 380 x 70 mm and 490 x 90 mm (Ø12.5 mm). We also supply a wide range of manufacturer and model-dependent adapter consoles from stock, in order to adapt to other robot variations. For example, many robot models are equipped from the factory with only side-mounted mounting options - in these cases, our adapter product range also supports simple installation of the retraction systems without additional engineering. Adapter consoles for many robot models, from stock. Product range next page.

Part No. TR.907.595

Adjustment unit to easily change the position of the retraction system

Application example with RS system on ABB Series 6600
### Adapter consoles for retraction systems, from stock | Product range

<table>
<thead>
<tr>
<th>Adapter console</th>
<th>Part No.</th>
<th>Manufacturer</th>
<th>Robot model</th>
<th>Weight [kg]</th>
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<tbody>
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<td>ABB</td>
<td>IRB 6600 IRB 6640 IRB 6650</td>
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<td>TR.907.468</td>
<td>ABB</td>
<td>IRB 6400</td>
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<td>TR.907.448</td>
<td>ABB</td>
<td>IRB 4400</td>
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<td>5.0</td>
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<td>ABB</td>
<td>IRB 2400/10 IRB 2400/16</td>
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<td>Comau</td>
<td>Smart six</td>
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<td>2.2</td>
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<tr>
<td>TR.907.327</td>
<td>Yaskawa</td>
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<tr>
<td>TR.909.641</td>
<td>Yaskawa</td>
<td>MHSO</td>
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<td>2.0</td>
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</tbody>
</table>

More adapter consoles upon request. CAD data online.

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### Adapter consoles for retraction systems, from stock | Product range

<table>
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<tr>
<th>Adapter console</th>
<th>Part No.</th>
<th>Manufacturer</th>
<th>Robot model</th>
<th>Weight [kg]</th>
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</thead>
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<td>Reis</td>
<td>RV30-26 RV10-16 RV20-16 RV60-16 RV60-26 RV60-40 RV60-60 RV130</td>
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<td>TR.911.223</td>
<td>Kuka</td>
<td>Series Quantec (4 piece kit)</td>
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</table>

More adapter consoles upon request. CAD data online.

---

More information ➤ www.igus.co.uk/consoles

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/triflexR
The clamp is used to attach a mounting bracket to axis 6, with a bar (Ø 30mm) for all robots. They are easy and quick to assemble.

- For use with heavy duty connection TR.XX.20 / TR.XX.23
- For use with compact connection TR.XX.21.01 / TR.XX.21.02
- For use with quick exchange unit TR.XX.22

For use with a heavy duty connection, compact connection, and quick release units

Easy and fast alignment of the fixed end relative to the tool position

Depending on robot design, with or without recess

Part No. | Robot | With recess | A | B | Weight
--- | --- | --- | --- | --- | ---
TR.907.057 | KUKA KR 30-3 (HA) | yes | 130 | 115 | 1.9
TR.907.057 | KUKA KR 60-3 (HA) | yes | 130 | 115 | 1.9
TR.907.057 | KUKA KR 60 L45-3 (HA) | yes | 130 | 115 | 1.9
TR.907.057 | KUKA KR 60 L30-3 (HA) | yes | 130 | 115 | 1.9
TR.907.901 | KUKA Quantec, large flange | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 125/3 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 150/3 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 200/3 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 360/1 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 500/1 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 150/2 Series 2000 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 180/2 Series 2000 | yes | 205 | 190 | 2.5
TR.907.901 | KUKA KR 210/2 Series 2000 | yes | 205 | 190 | 2.5
TR.908.115 | KUKA KR 1000 Titan | yes | 250 | 242 | 3.05
TR.907.992 | Fanuc R-2000iB | yes | 165 | 160 | 2.4
TR.907.992 | Fanuc R-2000iA | yes | 165 | 160 | 2.4
TR.907.992 | Reis RV 130 | yes | 165 | 160 | 2.4
TR.908.065 | Fanuc M-710iC 50 | yes | 130 | 124 | 2.2
TR.908.065 | Fanuc M-710iC 70 | yes | 130 | 124 | 2.2
TR.909.387 | Yaskawa UP 50 | yes | 125 | 100 | 1.9
TR.909.387 | Yaskawa HP 50 | yes | 125 | 100 | 1.9
TR.909.387 | Yaskawa MH 50 | yes | 125 | 100 | 1.9
TR.910.544 | Reis RV60-60 | yes | 145 | 125 | 1.9
TR.910.544 | Reis RV60-40 | yes | 145 | 125 | 1.9
TR.908.347 | Stäubli TX200 | yes | 145 | 125 | 1.9
TR.907.667.125 | KUKA KR 150/1 | no | 125 | = A | 2.1
TR.907.667.140 | KUKA Quantec small flange | no | 140 | = A | 2.2
TR.907.667.142 | Hyundai HX 165 | no | 142 | = A | 2.25
TR.907.667.150 | Comau NJ 130 | no | 150 | = A | 2.4
TR.907.667.160 | ABB IRB 6400 | no | 160 | = A | 2.46
TR.907.667.180 | Fanuc S420 | no | 160 | = A | 2.46
TR.907.667.180 | Fanuc S420 | no | 160 | = A | 2.46
TR.907.667.190 | Comau NH3 | no | 190 | = A | 2.6
TR.907.667.200 | KUKA KR 125/1 | no | 200 | = A | 2.7
TR.907.667.200 | KUKA KR 150/1 | no | 200 | = A | 2.7
TR.907.667.200 | KUKA KR 200/1 | no | 200 | = A | 2.7
TR.907.667.200 | ABB IRB 6640 | no | 200 | = A | 2.7
TR.907.667.200 | ABB IRB 6620 | no | 200 | = A | 2.7
TR.907.667.200 | ABB IRB 6650 | no | 200 | = A | 2.7
TR.907.667.220 | KUKA KR 360-2 | no | 220 | = A | 2.82
TR.907.667.220 | KUKA KR 500-2 | no | 220 | = A | 2.82
TR.907.667.220 | KUKA KR 360-3 | no | 220 | = A | 2.82
TR.907.667.220 | KUKA KR 500-3 | no | 220 | = A | 2.82
TR.907.667.275 | ABB IRB 7600-340 | no | 223 | = A | 3.5
TR.907.667.275 | ABB IRB 7600-500 | no | 225 | = A | 3.5
TR.907.667.315 | Fanuc M-710iA 350 | no | 250 | = A | 3.2
TR.907.667.315 | Fanuc M-710iA 280L | no | 275 | = A | 3.4
TR.907.667.315 | Fanuc M-710iA 200P | no | 275 | = A | 3.4
TR.907.667.315 | Fanuc M-710iA 600 | no | 315 | = A | 3.6
TR.907.667.315 | Fanuc M-710iA 400L | no | 315 | = A | 3.6

More information ► www.igus.co.uk/triflexR
easy triflex®

For simple multi-axis applications, easy filling from both sides

+ easy triflex® advantages:
  ● Easy filling with "easy" design
  ● Easy filling from both sides
  ● Easy to replace or combine with existing triflex® systems
  ● If square space is required

When to use another 3D e-chain® series:
  ● For complex robot applications
    ▶ triflex® R - TRE, page 876
  ● For circular movements with high loads
    ▶ twisterchain system, page 966
For simple 3D applications, easy filling from both sides - easy triflex®

The easy triflex® series was developed to offer safe energy supply for multi-axis movements. In doing so the flexibility of a hose was combined with the stability and defined bend radius of an e-chain®. With easy triflex® the installation of cables and hoses is simple. With flexible crossbars the cables are simply pushed into the e-chain® from either side. The unique modular range allows very complex movements. For example it is possible to combine 1- 2- and 3-axis links in one e-chain®.

Typical industries and applications
- Machine tools
- Robots
- Handling Equipment
- Material handling
- Plastics industry
- Construction machinery
- Vehicles production
- General mechanical engineering
- Medical equipment
- Office furniture

UL94-V2 Classification

IF product design award
2000 Series easy triflex®

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ▶ www.igus.co.uk/easytriflex

942

943
easy triflex® | Technical data | Overview

### Technical data

<table>
<thead>
<tr>
<th>Speed / acceleration</th>
<th>upon request</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material - permitted temperature °C, igumid NB</td>
<td>-40°C / +120°C</td>
</tr>
<tr>
<td>Flammability class, igumid NB</td>
<td>VDE 0304 IIC UL94-V2</td>
</tr>
</tbody>
</table>

### Order example | Order key

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets:**

| e-chain® (1.0m) | Please indicate e-chain® length or number of links: 1.0m or 28 links | E333.75.200/200.0 |
| Mounting brackets | 1 set mounting bracket with strain relief | 333.75.12PZ |

**Order text:**

| 1 m E333.75.200/200.0 + 333.75.12PZ |

**Order key**

- **Single-axis movement**
  - E332.75.2.200.0

- **Double-axis movement**
  - E332.75.2.200.0

- **Triple-axis movement**
  - E333.75.200/200.0

**Technical data**

- **Order example**
- **Application examples**

Igus®-easy triflex® e-chains® can also be used for simple applications needing an aesthetic solution.

More information | www.igus.co.uk/easytriflex
### e-chains® | Series E332 "easy" design | Single-axis movement

**Part No.** E332

**Installation dimensions**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi/Bi2</th>
<th>Bi3</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Pitch</th>
<th>E332</th>
</tr>
</thead>
<tbody>
<tr>
<td>E332.252.2.R0</td>
<td>13</td>
<td>25</td>
<td>34</td>
<td>048</td>
<td>075</td>
<td>100</td>
</tr>
<tr>
<td>E332.322.2.R0</td>
<td>17</td>
<td>32</td>
<td>50</td>
<td>075</td>
<td>100</td>
<td>125</td>
</tr>
<tr>
<td>E332.502.2.R0</td>
<td>26</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
<td>150</td>
</tr>
<tr>
<td>E332.752.2.R0</td>
<td>36.5</td>
<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
</tr>
</tbody>
</table>

Complete Part No. with required radius (R). Example: E332.75.2.200.0

### e-chains® | Series E332 "easy" design | Double-axis movement with RBR*

**Part No.** E332

**Installation dimensions**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi/Bi2</th>
<th>Bi3</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>Pitch</th>
<th>E332</th>
</tr>
</thead>
<tbody>
<tr>
<td>E332.252.2.R0/R0</td>
<td>13</td>
<td>25</td>
<td>34</td>
<td>048</td>
<td>075</td>
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<td>E332.322.2.R0/R0</td>
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<td>32</td>
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<td>E332.502.2.R0/R0</td>
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<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
<td>150</td>
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<td>E332.752.2.R0/R0</td>
<td>38.5</td>
<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
</tr>
</tbody>
</table>

*Example: E332.50.2.110.0

---

More information ▶️ www.igus.co.uk/E332 ▶️ www.igus.co.uk/E333

3D CAD, configurators, service life calculation and more ▶️ www.igus.co.uk/easytriflex
e-chains® | Series E333 “easy” design | Triple-axis movement with RBR*

| RBR = Reverse Bend Radius. The bend radii are doubled in the case of the series E333.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi 1/Bi 2</th>
<th>Bi 3</th>
<th>Ba</th>
<th>E332</th>
<th>Pitch</th>
<th>E332</th>
</tr>
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<tbody>
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<td>68</td>
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<td>E333.75</td>
<td>38.5</td>
<td>75</td>
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<td>140</td>
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*Part No. full set with tiewraps*

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set</th>
<th>Part No. full set</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Number of teeth</th>
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</thead>
<tbody>
<tr>
<td>25.2</td>
<td>333.25.12PZ</td>
<td>333.25.12PZ</td>
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<td>22</td>
<td>52</td>
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<td>32.2</td>
<td>333.32.12PZB</td>
<td>333.32.12PZB</td>
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<td>82</td>
<td>6.5</td>
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<tr>
<td>50.2</td>
<td>333.50.12PZB</td>
<td>333.50.12PZB</td>
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<td>100</td>
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<td>333.75.12PZB</td>
<td>109</td>
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<td>55</td>
<td>125</td>
<td>6.5</td>
<td>15</td>
<td>7</td>
</tr>
</tbody>
</table>

Note series E333: the mounting brackets are only available for a chain with even number of chain links!

The bracket orientations are set automatically when using KMA mounting bracket. To receive brackets pre-fitted please add index A.

<table>
<thead>
<tr>
<th>Width</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Number of teeth</th>
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<tr>
<td>333.25.12PZ</td>
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<tr>
<td>333.50.12PZB</td>
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<td>–</td>
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Order example

<table>
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<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Number of teeth</th>
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</thead>
<tbody>
<tr>
<td>333.25.12PZ</td>
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<td>–</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>333.32.12PZB</td>
<td>–</td>
<td>–</td>
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<tr>
<td>333.50.12PZB</td>
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<td>333.75.12PZB</td>
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<td>–</td>
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Strain relief e.g. clamps, tiewraps, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1900

Easy triflex® | Series E332-E333 | Accessories

KMA mounting brackets | Attachment from any side | One end pivoting

www.igus.co.uk/E332

More information ► www.igus.co.uk/E333
**easy triflex® | Series E332-E333 | Accessories**

**Mounting brackets, flange, steel | Pivoting**

![Diagram of mounting brackets, flange, steel](image)

**Mounting brackets, flange, steel | Pivoting**

<table>
<thead>
<tr>
<th></th>
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<tbody>
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<td>25.2 / 25.</td>
<td>330.25.12</td>
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<td>29</td>
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<td>10.5</td>
<td>6.5</td>
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<td>1.5</td>
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<td>32.2 / 32.</td>
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<td>44</td>
<td>88</td>
<td>20</td>
<td>7</td>
<td>9</td>
<td>2</td>
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<td>50.2 / 50.</td>
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<td>102</td>
<td>62</td>
<td>108</td>
<td>25</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>75.2 / 75.</td>
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<td>127</td>
<td>90</td>
<td>131</td>
<td>25</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

Note series E333: the mounting brackets are only available for e-chains with even number of chain links!

---

**Flu$h attachment possible using flange mounting brackets made of steel.**

**Order example**

- **330.75.12**
  - Full set Width index Series

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

---

**easy triflex® | Series E332-E333 | Accessories**

**Mounting brackets, angled, steel | Pivoting**

![Diagram of mounting brackets, angled, steel](image)

**Mounting brackets, angled, steel | Pivoting**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
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<td>32.2 / 32.</td>
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<td>24</td>
<td>20</td>
<td>7</td>
<td>49</td>
</tr>
<tr>
<td>50.2 / 50.</td>
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<td>75.2 / 75.</td>
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<td>36</td>
<td>24</td>
<td>9</td>
<td>96</td>
</tr>
</tbody>
</table>

Note series E333: the mounting brackets are only available for e-chains with even number of chain links!

---

**Order example**

- **338.75.12**
  - Full set Width index Series

---

**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

---

More information ▶ [www.igus.co.uk/E332](http://www.igus.co.uk/E332) ▶ [www.igus.co.uk/E333](http://www.igus.co.uk/E333)
Enclosed for simple multi-axis applications

**triflex® advantages:**
- For single, double and triple-axis applications (combines circular and linear movements)
- If swarf protection is required
- If square space is required
- For simple multi-axis applications
- High strength

When to use another multi-axis e-chain® series:
- For complex robot applications
  - triflex® R - TRE, page 866
- For circular movements with high loads
  - twisterchain system, page 966
**triflex® | Introduction | Advantages**

Universal:
- KMA, flanged and angled mounting brackets available

Customisable:
- different bend radii and types can be combined

Protection:
- completely enclosed - protection against dirt and swarf

Modular:
- combination of fully enclosed and openable types is possible

Variation:
- openable series 352 and 353, 50mm cross section

Effective:
- cost-effective for complex movements

Modular:
- easy lengthening and shortening at any point

---

**Enclosed for simple multi-axis applications - triflex®**

The triflex® series was developed to allow safe energy supply for multi-axis movements. In doing so the flexibility of a hose was combined with the stability and defined bend radius of an e-chain®. The unique, modular product range allows very complex motions. For example it is possible to combine 1- 2- and 3-axis links in one e-chain®.

**Typical industries and applications**
- Machine tools
- Robots
- Material handling
- Plastics industry
- Construction machinery
- Vehicles production
- Medical equipment
- General mechanical engineering, etc.

---

**triflex® | Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner width $B_1$ [mm]</th>
<th>Outer width $B_2$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Pitch [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-axis movement - enclosed protection against dirt and swarf</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>332.16</td>
<td>16</td>
<td>26</td>
<td>038 - 100</td>
<td>13.3</td>
<td>958</td>
</tr>
<tr>
<td>332.32</td>
<td>32</td>
<td>50</td>
<td>075 - 250</td>
<td>25</td>
<td>958</td>
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<tr>
<td>332.50</td>
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<td>68</td>
<td>100 - 250</td>
<td>30</td>
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<td>332.75</td>
<td>75</td>
<td>96</td>
<td>140 - 300</td>
<td>36</td>
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<tr>
<td>352.50*</td>
<td>50</td>
<td>68</td>
<td>100 - 250</td>
<td>30</td>
<td>958</td>
</tr>
</tbody>
</table>

| Double-axis movement - enclosed, with RBR (Reverse Bend Radius) protection against dirt and swarf |
| 332.16  | 16                     | 26                     | 038 - 100           | 13.3      | 960  |
| 332.32  | 32                     | 50                     | 075 - 250           | 25        | 960  |
| 332.50  | 50                     | 68                     | 100 - 250           | 30        | 960  |
| 332.75  | 75                     | 96                     | 140 - 300           | 36        | 960  |
| 352.50* | 50                     | 68                     | 100 - 250           | 30        | 960  |

| Triple-axis movement - enclosed, with RBR (Reverse Bend Radius) protection against dirt and swarf |
| 333.16  | 16                     | 26                     | 038 - 100           | 13.3      | 961  |
| 333.32  | 32                     | 50                     | 075 - 250           | 25        | 961  |
| 333.50  | 50                     | 68                     | 100 - 250           | 30        | 961  |
| 333.75  | 75                     | 96                     | 140 - 300           | 36        | 961  |
| 353.50* | 50                     | 68                     | 100 - 250           | 30        | 961  |

*Series 352/353 openable

**Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

---

**IF product design award**
1992 igus® Series triflex®

954 More information ▶ www.igus.co.uk/triflex

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/triflex

955
**triflex® | Technical data | Overview**

**Technical data**

- **Speed / acceleration**: upon request
- **Material - permitted temperature °C, igumid G**: -40°C / +120°C
- **Flammability class, igumid G**: VDE 0304 IIC UL94-HB

**Order example | Order key**

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets:**

- **e-chain® (1.0m)**: Please indicate e-chain® length or number of links: 1.0m or 28 links 333.75.200/200.0
- **+ Mounting brackets**: 1 set mounting bracket with strain relief 333.75.12PZ
- **+ Interior separation**: with 2 separators assembled every 2nd link 351

Order text: 333.75.200/200.0 + 333.75.12PZ + 351

**Order key**

- **Single-axis movement**: 332.75.200.0, 352.50.200.0
- **Double-axis movement**: 332.75.200.0, 352.50.200.0
- **Triple-axis movement**: 333.75.200.0, 353.75.200.0

**Application examples**

- **Various triflex® e-chains® on a machining centre**
- **triflex® allows combination of links for triple-axis and single-axis movement**
- **triflex® 332 as unsupported link from machines to control panel**
triflex® | Series 332-352 | Product range
Single-axis movement

triflex® | Series 332-352 | Installation dimensions
Unsupported applications | Short travels | Single-axis movement

**e-tubes | 332 enclosed | 352 openable | Single-axis movement**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [kg/m]</th>
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<tr>
<td>enclosed version</td>
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</table>

Complete Part No. with required radius (R). Example: 332.75.200.0

**Installation dimensions**

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<td>K [mm]</td>
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<td>R [mm]</td>
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<td>350</td>
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<tr>
<td>D [mm]</td>
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<td>K [mm]</td>
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<tr>
<td>R [mm]</td>
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<td>200</td>
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<tr>
<td>H [mm]</td>
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<td>320</td>
<td>375</td>
<td>470</td>
</tr>
<tr>
<td>D [mm]</td>
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<td>295</td>
</tr>
<tr>
<td>K [mm]</td>
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<td>590</td>
<td>750</td>
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<tr>
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<td>250</td>
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<tr>
<td>H [mm]</td>
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<td>600</td>
</tr>
<tr>
<td>D [mm]</td>
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<tr>
<td>K [mm]</td>
<td>550</td>
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<td>740</td>
<td>900</td>
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</table>

332.16
Bi [mm] 26
Pitch T [mm/100] 13.3
Dim. E [mm] 10
Links/m 76
corresponds to [mm] 1,011
e-chain length \( L_e = ^{\frac{1}{2}}s + K \)

332.32
Bi [mm] 50
Pitch T [mm/100] 25
Dim. E [mm] 20
Links/m 40
corresponds to [mm] 1,000
e-chain length \( L_e = ^{\frac{1}{2}}s + K \)

332.50/352.50
Bi [mm] 68
Pitch T [mm/100] 30
Dim. E [mm] 25
Links/m 34
corresponds to [mm] 1,020
e-chain length \( L_e = ^{\frac{1}{2}}s + K \)

332.75
Bi [mm] 96
Pitch T [mm/100] 36
Dim. E [mm] 25
Links/m 28
corresponds to [mm] 1,008
e-chain length \( L_e = ^{\frac{1}{2}}s + K \)

More information ▶ www.igus.co.uk/332 ▶ www.igus.co.uk/352
3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/triflex
### Series 333-353: Product range

#### Double-axis movement

**e-tubes | 332 enclosed | 352 openable | Double-axis movement with RBR**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [kg/m]</th>
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</thead>
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<td>038</td>
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<td>332.32, R/R/D</td>
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<td>32</td>
<td>50</td>
<td>075</td>
<td>100</td>
<td>125</td>
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<tr>
<td>332.50, R/R/D</td>
<td>352, 50, R/R/D</td>
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<td>100</td>
<td>125</td>
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<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
</tr>
</tbody>
</table>

*RBR = Reverse Band Radius

Art. Complete Part No. with required radius (R). Example: 332.75/200/200.0

#### Installation dimensions

- **Moving end**
- **Fixed end**

<table>
<thead>
<tr>
<th>R</th>
<th>038</th>
<th>048</th>
<th>075</th>
<th>100</th>
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<tbody>
<tr>
<td>H</td>
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<td>180</td>
<td>230</td>
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<td>400</td>
</tr>
<tr>
<td>E</td>
<td>305</td>
<td>385</td>
<td>465</td>
<td>545</td>
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<tr>
<td>R</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>H</td>
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<td>R</td>
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<td>250</td>
</tr>
<tr>
<td>K</td>
<td>380</td>
<td>450</td>
<td>500</td>
<td>600</td>
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</tbody>
</table>

#### Triple-axis movement

**e-tubes | 333 enclosed | 353 openable | Triple-axis movement with RBR**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [kg/m]</th>
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</thead>
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<td>333.16, R/R/D</td>
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<td>333.32, R/R/D</td>
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<td>32</td>
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<tr>
<td>333.50, R/R/D</td>
<td>353, 50, R/R/D</td>
<td>50</td>
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<td>75</td>
<td>96</td>
<td>140</td>
<td>175</td>
<td>200</td>
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</tbody>
</table>

*RBR = Reverse Band Radius

Art. Complete Part No. with required radius (R). Example: 333.75/200/200.0

#### Installation dimensions

- **Moving end**
- **Fixed end**

<table>
<thead>
<tr>
<th>R</th>
<th>038</th>
<th>048</th>
<th>075</th>
<th>100</th>
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<tbody>
<tr>
<td>H</td>
<td>105</td>
<td>125</td>
<td>180</td>
<td>230</td>
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<tr>
<td>D</td>
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<td>400</td>
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<td>E</td>
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<td>385</td>
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<td>R</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>200</td>
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<tr>
<td>K</td>
<td>380</td>
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<td>600</td>
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</table>

**triflex | Series 332-352 | Product range**

Double-axis movement

**triflex | Series 333-353 | Product range**

Triple-axis movement

3D CAD, configurators, service life calculation and more at www.igus.co.uk/triflex
KMA mounting brackets | One end pivoting

Moving end
333 ... 1PZ(B)

Fixed end
333 ... 2PZ(B)

Width index Part No. full set with tiwwrap plates Part No. full set without tiwwrap plates A [mm] B [mm] C [mm] D [mm] E [mm] F [mm] Number of teeth
32. 333.32.12PZB 333.32.12PZ 66 15 46 82 6.5 15 3
50. 333.50.12PZB 333.50.12PZ 84 15 50 100 6.5 15 5
75. 333.75.12PZB 333.75.12PZ 109 15 55 125 6.5 15 7

Note series 333: the mounting brackets are only available for e-chains® with even number of chain links!

Order example
To indicate option with brackets pre-fitted.

Flush attachment possible using flange mounting brackets made of steel.

Strain relief e.g. clamps, tiwrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➔ From page 1300

Mounting brackets, flange, steel | Pivoting

Fixed end
330 ... 2

Moving end
330 ... 1

Front view

16. 330.16.12 35 53 21 57 10 4.5 6 1
32. 330.32.12 66 84 44 88 20 7 9 2
50. 330.50.12 84 102 62 106 25 7 9 2
75. 330.75.12 109 127 90 131 25 7 9 2

Note series 333: the mounting brackets are only available for e-chains® with even number of chain links!

Order example
Full set Width Index Series

Strain relief e.g. clamps, tiwrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➔ From page 1300
Mounting brackets, angled, steel | Pivoting

Fixed end
338 ... 2

Moving end
338 ... 1

90°

70°

As standard separators are fitted every 2nd e-chain® link!

Separators
Modular separators are available as interior separation for the igus® triflex® system. They can be used for both vertical and horizontal subdivision. If the separators are assembled every other link and turned 90°, the e-tube can be subdivided into four segments. We recommend ordering the separators pre-fitted, as fitting of separators is only possible after dismantling the e-tube.

Order example

338.75.12
Full set
Width index
Series

Note series 333: the mounting brackets are only available for e-chains® with even number of chain links!

Possible orientations for assembled mounting brackets.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300
twisterchain
Circular and spiral movements

+ twisterchain advantages:
  - e-chains® for circular and spiral movements up to 360° available from stock
  - Tough, quiet and high dynamics, suitable for high fill weights
  - Rotary speeds up to 1m/s and more
  - Modular interior separation
  - Smooth cable-friendly interior
  - Openable from both sides - crossbars removable along the inner and outer radius

- When to use another igus® solution:
  - For large rotary movements, igus® RBR solutions
    - Designing, page 126
  - In case of rotary movements in the most confined spaces up to 7,000°
    - twisterband, page 988
  - For angle of rotation >360° please contact us.

*Up to 540° upon request
Strong, quiet and up to 360°* -
circular and spiral movements with twisterchain

The igus® twisterchain product line offers an extensive range of products for circular movement and is available in four sizes. Its modular width and radius design ensures it can be used flexibly in applications with rotary and spiral movements up to 360° and more, with high fill weights and where smooth operation is required. twisterchain applications are available with modular guide troughs which offer: e-chain® guidance, reduced e-chain® wear, optimal levels of smooth operation, angle of rotations up to 360°* from stock.

- Strong, high fill weights, smooth running
- Rotary speeds up to 1 m/s and more
- e-chains® for circular and spiral movements up to 360°* from stock
- Cable-friendly, smooth interior, Crossbars openable along the inner and outer radius
- Successfully tested for over 1 million cycles in the igus® laboratory

"Up to 360°* upon request"

**Typical industries and applications**
- Robots, Handling machines
- Packaging machines
- Glass machines
- General machinery, etc.

- e-chains® for circular movements up to 360°* available from stock (up to 540°* upon request)
- UL94-V0 classification

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Quickly generate complete
twisterchain 3D CAD models
- Get complete 3D models just by inputting the angle of rotation and basic dimensions
- Free positioning of the e-chain® moving end along the travel length
- Optional generation of twisterchain as an individual part or complete with guide trough and base support
- Fast download of the CAD files without registration
- 11 different 3D formats and 6 different 2D formats available

More information: www.igus.co.uk/twister-configurator
twisterchain general information

In the case of machines which rotate in one direction then the other, the total rotation angle required is the sum of the two angles.

**Order example | Order key**

- **Order example for complete e-chain® (1.0m), colour black, with mounting brackets:**
  - **e-chain® (1.0m)**: Please indicate e-chain® length or number of links: 1.0m or 11 links
  - **+ Mounting brackets**: 1 set

**Order text:**
1 m TC56.12.250/650.0 + TC5600.34.VS.E

**Order key**

- **TC56.12.250/650.0**
  - e-chain® openable along the inner radius, from both sides
  - **R** 12mm inner width, **AR** 250mm bend radius
  - **AR** 650mm outer radius, colour black
twisterchain classic* | Series 2208 | Product range
e-chains® for circular and spiral movements up to 360°

Series 2208 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>AR [mm]</th>
<th>IR [mm]</th>
<th>Bi [mm]</th>
<th>R 055 [mm]</th>
<th>R 063 [mm]</th>
<th>R 075 [mm]</th>
<th>R 100 [mm]</th>
<th>R 125 [mm]</th>
<th>R 150 [mm]</th>
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<td>227</td>
<td>52.5</td>
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<td>0.522.063/300</td>
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</table>

*twisterchain classic (1st generation),

Pitch [mm/link] 44
Links/m 23
corresponds to [mm] 1,012

Series 2208 | interior separation

For this series the interior separation products for series E4.28 may be used (except side plates) ➤ From page 566

Combined spiral and circular movement - igus® twisterchain classic (1st generation)

More information ➤ www.igus.co.uk/2208

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/twisterchain

AR = Outer radius of e-chain
IR = Inner radius e-chain
Bi = Bend radius e-chain
Ba = Outer machine limit
Xl = Inner machine limit
A1 = Intermediate link position
H = Nominal clearance height
K = Add-on for bend radius
T = Pitch
Series TC32 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>AR</th>
<th>Bi</th>
<th>Ba</th>
<th>X1</th>
<th>X2</th>
<th>R 100 [mm]</th>
<th>R 125 [mm]</th>
<th>R 150 [mm]</th>
<th>R 175 [mm]</th>
<th>R 200 [mm]</th>
<th>R 250 [mm]</th>
<th>TC32[a]</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>87.5</td>
<td>198.5</td>
<td>480</td>
<td>270</td>
<td>087.100/400</td>
<td>087.125/400</td>
<td>087.150/400</td>
<td>087.175/400</td>
<td>087.200/400</td>
<td>087.250/400</td>
<td>+1.82</td>
</tr>
<tr>
<td>500</td>
<td>100</td>
<td>121</td>
<td>480</td>
<td>250</td>
<td>100.100/500</td>
<td>100.125/500</td>
<td>100.150/500</td>
<td>100.175/500</td>
<td>100.200/500</td>
<td>100.250/500</td>
<td>+1.90</td>
</tr>
<tr>
<td>600</td>
<td>125</td>
<td>146</td>
<td>480</td>
<td>220</td>
<td>125.100/500</td>
<td>125.125/500</td>
<td>125.150/500</td>
<td>125.175/500</td>
<td>125.200/500</td>
<td>125.250/500</td>
<td>+2.05</td>
</tr>
<tr>
<td>700</td>
<td>150</td>
<td>171</td>
<td>480</td>
<td>200</td>
<td>150.100/500</td>
<td>150.125/500</td>
<td>150.150/500</td>
<td>150.175/500</td>
<td>150.200/500</td>
<td>150.250/500</td>
<td>+2.13</td>
</tr>
</tbody>
</table>

Dimensions A1 always with tolerance of ±2.5mm.

Interim link: The cable-friendly interim link increases the strength and stability of twisterchain many times over. It also serves as inner separation, dividing the filling space into two chambers. Outer radius AR determines dimension A1.

Series TC32 | Interior separation

For this series the interior separation products for series E4.32 may be used (except side plates) ► From page 594.

Information:
- AR = Outer radius of e-chain
- R = Inner radius e-chain
- H = Bend radius e-chain
- X1 = Inner machine limit
- X2 = Outer machine limit
- A1 = Intermediate link position
- R = Nominal clearance height
- K = Add-on for bend radius
- T = Pitch
### Series TC42 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>AR</th>
<th>Bi</th>
<th>Ba</th>
<th>X₀</th>
<th>X₁</th>
<th>R₁ 100 [mm]</th>
<th>R₁ 125 [mm]</th>
<th>R₁ 150 [mm]</th>
<th>R₁ 175 [mm]</th>
<th>R₁ 200 [mm]</th>
<th>R₁ 250 [mm]</th>
<th>TC42 [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>87.5</td>
<td>110.5</td>
<td>490</td>
<td>270</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1.197</td>
</tr>
<tr>
<td>500</td>
<td>106</td>
<td>130</td>
<td>580</td>
<td>350</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>2.225</td>
</tr>
<tr>
<td>600</td>
<td>125</td>
<td>148</td>
<td>680</td>
<td>450</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>3.416</td>
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<td>750</td>
<td>150</td>
<td>173</td>
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<td>650</td>
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<td>4.816</td>
</tr>
<tr>
<td>850</td>
<td>162.5</td>
<td>185.5</td>
<td>100</td>
<td>850</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>6.500</td>
</tr>
</tbody>
</table>

**For this series the interior separation products for series E4.42 may be used (except side plates).**

---

### Twisterchain | Series TC42 | Installation dimensions

#### Dimension A1 dependent on outer radius AR

<table>
<thead>
<tr>
<th>AR</th>
<th>R₁ 100</th>
<th>R₁ 125</th>
<th>R₁ 150</th>
<th>R₁ 175</th>
<th>R₁ 200</th>
<th>R₁ 250</th>
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<tbody>
<tr>
<td>400</td>
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<td>490</td>
<td>270</td>
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<td>106</td>
<td>130</td>
<td>580</td>
<td>350</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>600</td>
<td>125</td>
<td>148</td>
<td>680</td>
<td>450</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>750</td>
<td>150</td>
<td>173</td>
<td>850</td>
<td>650</td>
<td>30</td>
<td>30</td>
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<td>185.5</td>
<td>100</td>
<td>850</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

**Note: outer radius AR (see drawing) determines dimension A1.**

---

### Intermediate link

The cable-freely intermediate link increases the strength and stability of twisterchain many times over. It also serves as an internal separation, dividing the filling space into two chambers. Outer radius AR determines dimension A1.

---

### Dimensions

#### For this series the interior separation products for series E4.42 may be used (except side plates). From page 604.
twisterchain | Series TC56 | Product range
e-chains® for circular and spiral movements up to 360°

Series TC56 | Crossbars removable along the inner and outer radius

<table>
<thead>
<tr>
<th>AR</th>
<th>Bi</th>
<th>Ba</th>
<th>X1</th>
<th>X2</th>
<th>R 150 [mm]</th>
<th>R 200 [mm]</th>
<th>R 250 [mm]</th>
<th>R 300 [mm]</th>
<th>R 400 [mm]</th>
<th>TC56</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>150</td>
<td>180</td>
<td>730</td>
<td>450</td>
<td>–</td>
<td>–</td>
<td>15.250/650</td>
<td>15.300/650</td>
<td>15.400/650</td>
<td>–</td>
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<tr>
<td>650</td>
<td>175</td>
<td>205</td>
<td>730</td>
<td>430</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>17.300/650</td>
<td>17.400/650</td>
<td>–</td>
</tr>
<tr>
<td>650</td>
<td>187.5</td>
<td>218</td>
<td>730</td>
<td>420</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>18.300/650</td>
<td>18.400/650</td>
<td>–</td>
</tr>
<tr>
<td>750</td>
<td>200</td>
<td>230</td>
<td>730</td>
<td>400</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>20.300/650</td>
<td>20.400/650</td>
<td>–</td>
</tr>
<tr>
<td>750</td>
<td>150</td>
<td>180</td>
<td>830</td>
<td>550</td>
<td>–</td>
<td>–</td>
<td>15.200/750</td>
<td>15.250/750</td>
<td>15.300/750</td>
<td>15.400/750</td>
</tr>
<tr>
<td>750</td>
<td>175</td>
<td>205</td>
<td>830</td>
<td>530</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>17.300/750</td>
<td>17.400/750</td>
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</tr>
<tr>
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<td>218</td>
<td>830</td>
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<td>–</td>
<td>–</td>
<td>–</td>
<td>18.300/750</td>
<td>18.400/750</td>
<td></td>
</tr>
<tr>
<td>750</td>
<td>200</td>
<td>230</td>
<td>830</td>
<td>500</td>
<td>–</td>
<td>–</td>
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<td>20.400/750</td>
<td></td>
</tr>
<tr>
<td>850</td>
<td>150</td>
<td>180</td>
<td>930</td>
<td>650</td>
<td>15.150/850</td>
<td>15.200/850</td>
<td>15.250/850</td>
<td>15.300/850</td>
<td>15.400/850</td>
<td></td>
</tr>
<tr>
<td>850</td>
<td>175</td>
<td>205</td>
<td>930</td>
<td>630</td>
<td>17.150/850</td>
<td>17.200/850</td>
<td>17.250/850</td>
<td>17.300/850</td>
<td>17.400/850</td>
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</tr>
<tr>
<td>850</td>
<td>187.5</td>
<td>218</td>
<td>930</td>
<td>620</td>
<td>18.150/850</td>
<td>18.200/850</td>
<td>18.250/850</td>
<td>18.300/850</td>
<td>18.400/850</td>
<td></td>
</tr>
<tr>
<td>850</td>
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<td>930</td>
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<td>20.200/850</td>
<td>20.300/850</td>
<td>20.400/850</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pitch [mm/link] 91
Links/m 11
corresponds to [mm] 1,001

Intermediate link
The cable-friendly intermediate link increases the strength and stability of twisterchain many times over. It also serves as interior separation, dividing the filling space into two chambers. Outer radius AR determines dimension A1.

Series TC56 | Interior separation

For this series the interior separation products for series E4.56 may be used (except side plates) ▶ From page 516

AR = Outer radius of e-chain
Bi = Inner radius of e-chain
R = Bend radius of e-chain
X1 = Inner machine limit
X2 = Outer machine limit
A1 = Intermediate link position
H = Nominal clearance height
K = Add-on for bend radius
T = Pitch

More information ▶ www.igus.co.uk/TC56
twisterchain | Series TC32-TC42-TC56 | Accessories
Steel mounting bracket for twisterchain (2nd generation)

Steel, one-piece design for twisterchain (2nd generation) | Recommended for unsupported and circular applications

<table>
<thead>
<tr>
<th>For series</th>
<th>Part No. full set</th>
<th>Part No. position 1</th>
<th>Part No. position 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32</td>
<td>TC3200.34.VS.E</td>
<td>TC3200.30.VS.E</td>
<td>TC3200.40.VS.E</td>
</tr>
<tr>
<td>TC42</td>
<td>TC4200.34.VS.E</td>
<td>TC4200.30.VS.E</td>
<td>TC4200.40.VS.E</td>
</tr>
<tr>
<td>TC56</td>
<td>TC5600.34.VS.E</td>
<td>TC5600.30.VS.E</td>
<td>TC5600.40.VS.E</td>
</tr>
</tbody>
</table>

Note: twisterchain e-chains® must always start and end on an outer side-link. Please note when calculating!

Position 1 Position 2

- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

More information ► www.igus.co.uk/twisterchain

twisterchain classic | Series 2208 | Accessories
Steel mounting bracket for twisterchain classic (1st generation)

Steel, one-piece design for twisterchain (1st generation) | Recommended for unsupported and circular applications

<table>
<thead>
<tr>
<th>For series</th>
<th>Part No. full set</th>
<th>Part No. position 1</th>
<th>Part No. position 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>2208</td>
<td>22080.34.VS.E</td>
<td>22080.30.VS.E</td>
<td>22080.40.VS.E</td>
</tr>
</tbody>
</table>

Note: twisterchain e-chains® must always start and end on an outer side-link. Please note when calculating!

Order example
Stainless steel (standard)
Standard: bolted
Full set
Series

The guide trough is attached to the fixed end of the twisterchain classic based on the drill pattern shown in the diagram above.
The following bolted connections are permitted: ● Plain holes: 4 x Ø 6.6 - 7mm ● Mounting only with bolts: 4 x bolt M6

Position 1 Position 2

- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

The guide trough is attached to the fixed end of the twisterchain classic based on the drill pattern shown in the diagram above.
The following bolted connections are permitted: ● Plain holes: 4 x Ø 6.6 - 7mm ● Mounting only with bolts: 4 x bolt M6

Order example
Stainless steel (standard)
Standard: bolted
Full set
Series
Save installation time and cost - better guidance for circular movement - increase service life!

With the twisterchain type 01, complex adjustment work is reduced and so assembly time is reduced from 6 hours to 2 hours. It also reduces noise, whilst travel speed and service life can be increased, thanks to its nearly all-plastic design. Available for all twisterchains from the new and original product range.

- Suitable for high dynamics, because of the full guidance of the upper run
- Much smoother and quieter motion in the trough due to continuous guidance of the upper run
- Upper run guided in the polymer trough over the full length
- Preassembled delivery possible
- Easy adjustment, alignment and handling
- Assembly time reduced from 6 hours to 2 hours

Guide trough type 02 for series 2208 ➤ From page 986

With the twisterchain type 01 guide trough, it is possible to:

- Reduce installation time
- Increase service life
- Reduce noise
- Increase travel speed

Guide trough type 01 guide trough options

- Complete trough (with base support, height adjustment and attachment angle brackets)
- Upper and lower run trough (without floor support and height adjustment)
- Lower run trough (with mounting angle brackets)

More information ➤ www.igus.co.uk/TCtroughnew

Guide trough type 01 guide trough type 01

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Outer radius AR (mm)</th>
<th>Angle of rotation part No.</th>
<th>Part No. complete trough</th>
<th>Part No. upper/lower run trough</th>
<th>Part No. lower run trough</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32 / TC42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>400</td>
<td>0 - 90°</td>
<td>9000.31.90 .400/BLR</td>
<td>9000.31.90 .400/BLR</td>
<td>9000.31.90 .400/BLR</td>
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</tr>
<tr>
<td>500</td>
<td>90° - 180°</td>
<td>9000.31.180.400/BLR</td>
<td>9000.31.180.400/BLR</td>
<td>9000.31.180.400/BLR</td>
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</tr>
<tr>
<td>TC42 / TC56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>600</td>
<td>90° - 180°</td>
<td>9000.31.90 .600/BLR</td>
<td>9000.31.90 .600/BLR</td>
<td>9000.31.90 .600/BLR</td>
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</tr>
<tr>
<td>750</td>
<td>180° - 270°</td>
<td>9000.31.180.600/BLR</td>
<td>9000.31.180.600/BLR</td>
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<td></td>
</tr>
</tbody>
</table>

Complete Part No. 9XXX with required series (TC32, TC42, TC56), value Bi and required bend radius R ➤ 9TC32.31.180.600/06.250

For series 2208 please use guide troughs type 02 ➤ Page 986

Order key

- 9TC32.31.180.600/12.250
- R: Bend radius, please add required value
- Bi: Width index, please add required value
- Outer radius of e-chain®
- Angle of rotation of application (90°, 180°, 270°, 360°)
- Trough version
- Guide trough of selected series

More order examples

- Complete trough
- Lower run trough only
- Upper and lower run trough without base support
Construction height | \( H_f \) depending on bend radius of twisterchain guide trough

<table>
<thead>
<tr>
<th>Part No. series</th>
<th>( R ) [mm]</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>400</th>
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<td>370</td>
<td>420</td>
<td>470</td>
<td>520</td>
<td>570</td>
<td>670</td>
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<td>–</td>
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<tr>
<td>TC42</td>
<td>380</td>
<td>430</td>
<td>480</td>
<td>530</td>
<td>580</td>
<td>680</td>
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<td>–</td>
<td>600</td>
<td>700</td>
<td>800</td>
<td>1,000</td>
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</tr>
</tbody>
</table>

Guide trough | Type 01 | Installation dimensions

Angle of rotation for 360° | \( W_2 \) angle of upper run twisterchain guide trough

<table>
<thead>
<tr>
<th>Part No. series</th>
<th>( AR ) [mm]</th>
<th>( R ) [mm]</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>400</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32/TC42</td>
<td>400</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
<td>90°</td>
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<td>90°</td>
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<td>TC32/TC42</td>
<td>600</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
<td>135°</td>
</tr>
<tr>
<td>TC42/TC56</td>
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<tr>
<td>TC42/TC56</td>
<td>850</td>
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<td>135°</td>
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<td>135°</td>
<td>135°</td>
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</tr>
</tbody>
</table>

Installation dimensions | \( X_1 \) inner machine limit and \( X_2 \) outer machine limit

<table>
<thead>
<tr>
<th>( AR ) [mm]</th>
<th>( X_1 ) [mm]</th>
<th>( X_2 ) [mm]</th>
<th>( X_1 ) depending on Bi</th>
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<tbody>
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<td>TC32</td>
<td>400</td>
<td>87.5</td>
<td>100</td>
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<tr>
<td></td>
<td>200</td>
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<td>190</td>
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</tr>
<tr>
<td></td>
<td>200</td>
<td>108</td>
<td>125</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>137.5</td>
<td>150</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>162.5</td>
<td>180</td>
</tr>
<tr>
<td></td>
<td>350</td>
<td>190</td>
<td>200</td>
</tr>
</tbody>
</table>

Min. required space for igus® twisterchain-guide trough system

For series 2208 please use guide troughs type 02. 

More information: www.igus.co.uk/twisterchain

Support for the upper run as of 180° rotation angle

Installation height

984

More information: www.igus.co.uk/TCtoughnew
**Type 02 guide trough for twisterchain classic (1st generation) series 2208**

- Support for the upper run and guidance of twisterchain classic series 2208
- Angle of rotation up to 360° possible, 400° upon request
- The modular design of the guide trough makes it possible to connect a large number of e-chains® radii, circle and bend radii by using the same trough sections
- If the e-chain® radius changes, the trough can simply be adapted without purchasing a completely new trough
- The specified part number shown below includes the complete trough system

**Product range | Guide trough type 02 for twisterchain classic (1st generation)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Outer radius AR [mm]</th>
<th>Angle of rotation α max. [°]</th>
<th>Part No.</th>
<th>Part No.</th>
<th>Number of supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>2208</td>
<td>300</td>
<td>100</td>
<td>92208.4.45.300/BLR</td>
<td>not necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;100</td>
<td>92208.4.90.300/BLR</td>
<td>not necessary</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;180</td>
<td>92208.4.135.300/BLR*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;270</td>
<td>92208.4.180.300/BLR**</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

* These troughs feature one support for the upper run / ** These troughs feature two supports for the upper run

Complete Part No. with the required Bi and bend radius R e.g. 92208.5.180.600/112.150

**Order key**

- Guide trough type 02
- R - Bend radius, please add required value
- Bi - Width index, please add required value
- Outer radius of e-chain®
- Trough angle (Standard 180°, 135°, 90°, 45°)
- Trough version (5, with and 4, without bottom support)
- Guide trough - series 2208

92208.5.180.600/112.150

**Installation dimensions | Guide trough type 02 (1st generation)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>R [mm]</th>
<th>H [mm]</th>
<th>Part No.</th>
<th>R [mm]</th>
<th>H [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>2208...</td>
<td>265</td>
<td>130</td>
<td>92208...</td>
<td>145</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>H [mm]</th>
<th>H. Installation height [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>055</td>
<td>63</td>
<td>075</td>
</tr>
<tr>
<td>195</td>
<td>211</td>
<td>235</td>
</tr>
</tbody>
</table>
**twisterband**

**Up to 7,000°* rotary movement in the smallest spaces**

**twisterband advantages:**
- Rotary movements up to 7,000°*
- Rotary speeds up to 180°/s possible
- Openable with film hinge or openable "easy" design
- HD version with strong pin and hook connection for an even longer service life
- Compact, modular and lightweight
- Bands can be lengthened and shortened as required
- Minimum installation space, fits very closely around the rotary axis
- Cost-effective and easy to fill

When to use another igus® solution:
- For applications with a high fill weight
  - **twisterchain system**, from page 966
- For applications with multi-axis movements
  - **triflex® R**, from page 866
- **RBR** versions with a high fill weight
  - Designing, page 126
- If a lubrication and maintenance-free slewing ring bearing for "endless" rotation is required
  - **iglidur® slewing ring bearings**, www.igus.co.uk/PRT
- If shielded cables are necessary
  - Please contact us

* Depending on installation orientation - vertical: up to 3,000°, horizontal: 7,000° and more possible
Up to 7,000°* rotary movement in the smallest spaces - twisterband

With the compact igus® twisterband, rotations of up to 7,000°* can be achieved cost-effectively, even in confined spaces. Energy, data and media are securely guided.
- Rotary movements up to 7,000°*
- Rotary speeds up to 180°/s possible
- Openable with film hinge or openable "easy" design
- HD version with strong pin and hook connection for an even longer service life
- Compact, modular and lightweight
- Bands can be lengthened and shortened as required
- Minimum installation space, fits very closely around the rotary axis
- Cost-effective and easy to fill

Typical industries and applications
- Cable reels
- Robots (robot arms, axis 1/6, SCARA robots)
- Machine tools
- Medical equipment
- Radar and telescope equipment
- Aerospace, test, measurement, handling, lifting and installation equipment
- Wind turbines (e.g. blade adjustment)
- Wherever rotary unions or slip rings are used

*Depending on installation orientation - vertical: up to 3,000°, horizontal: 7,000° and more possible

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched

Series | Inner height | Inner width | $X_1$ | $X_2$ | $a_R$ | $b_R$ | $d_f$ | Interior separation | Opening principle | Page
--- | --- | --- | --- | --- | --- | --- | --- | --- | --- | ---
TB12.239 | 9 | 23 | 40 | 140 | 024 | 035 | 7 | – | “easy” design | 994
TB20.44.12 | 12 | 44 | 50 | 220 | 034 | 057 | 9 | – | “easy” design | 994
TB20.44.18 | 18 | 44 | 50 | 220 | 034 | 057 | 14 | yes | lock | 994
TB29.27.22 | 22 | 27 | 200 | 320 | 069 | 082 | 17 | yes | lock | 994
TB30.75.22 | 22 | 75 | 90 | 330 | 044 | 077 | 17 | yes | lock | 994
TBHD30.75.22 | 22 | 75 | 90 | 330 | 044 | 077 | 17 | yes | lock | 998
TBHD42.135.30 | 30 | 135 | 90 | 500 | 056 | 119 | 20 | yes | lock | 998

Other sizes available upon request. $X_1$ = inner machine limit $X_2$ = outer machine limit

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched

$B_l$ = Inner width e-chain
$m_h$ = Inner height e-chain
$m_l$ = Outer machine limit
$a_R$ = Minimum band radius e-chain
$b_R$ = Max. band radius e-chain
d_f = Max. cable diameter
$X_1$ = Number of strips
**twisterband** | Features | Accessories

A central shaft must be installed for horizontal orientation angles of rotation above 1,500°.

Max. angle of rotation: as a rule of thumb: each segment gives 180° = 360° more rotation.

Minimum installation space, fits very closely around the rotary axis.

Flange hinge: easy access and quick filling with cables and hoses.

Compact, modular, cost-effective - up to 7,000° rotary movement in the most confined spaces.

Can be reliably used in various installation positions (horizontal: 7,000° and more). Limited length compensation possible.

The twisterband HD is an advanced version of the standard twisterband ...

... instead of bands with integral hinges, the twisterband HD version is composed of separate e-chain® links with the pin/hook connecting system ...

... the advantage is a defined radius with higher strength.

**twisterband (7,000° rotation) | Technical data**

**Technical data**

<table>
<thead>
<tr>
<th>Speed / acceleration*</th>
<th>180°/s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>twisterband</strong> - material - permitted temperature °C, igumid TE</td>
<td>0°C / +70°C</td>
</tr>
<tr>
<td><strong>twisterband HD</strong> - material - permitted temperature °C, igumid G</td>
<td>0°C / +80°C</td>
</tr>
</tbody>
</table>

Flammability class, igumid G: VDE 0304 IIC UL94-HB

Flammability class, igumid TE: VDE 0304 IIC UL94-HB

*Speed / acceleration for TB29.27. upon request

**Size overview**

<table>
<thead>
<tr>
<th>Size Overview</th>
<th>X140</th>
<th>X120</th>
<th>X140</th>
<th>X120</th>
<th>X120</th>
<th>X130</th>
<th>X130</th>
<th>X150</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB12.25.0</td>
<td>TB20.44.12</td>
<td>TB20.44.18</td>
<td>TB29.27.22</td>
<td>TB30.75.22</td>
<td>TBHD30.75.22</td>
<td>TBHD12.135.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

- \( W \) = Inner width e-chain®
- \( H \) = Inner height e-chain®
- \( X_1 \) = Inner machine limit
- \( X_2 \) = Outer machine limit
- \( aR \) = Minimum bend radius e-chain®
- \( sR \) = Max. bend radius e-chain®
- \( dF \) = Max. cable diameter
- \( XX \) = Number of strips

More information: [www.igus.co.uk/twisterband](http://www.igus.co.uk/twisterband)
twisterband (7,000° rotation) | Advantages

Up to 7,000°* rotary movement in the smallest spaces - twisterband

With the compact igus® twisterband rotations can be achieved cost-effectively and with low wear and low maintenance, even in a confined space. Energy, data and media are securely guided. Available in 5 sizes.

● Rotary movements up to 7,000°*
● Compact, modular and lightweight
● Bands can be lengthened and shortened as required
● Minimum installation space, fits very closely around the rotary axis
● Can be reliably used in various installation positions (horizontal or vertical)
● Cost-effective
● Easy filling

Typical industries and applications
● Cable reels ● Robots (robot arms, axis1/6, SCARA robots) ● 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

* Depending on installation orientation - vertical: up to 3,000°, horizontal: 7,000° and more possible

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Some parts available with interior separation.

Base plate with strain relief**

Openable with film hinge or openable “easy” design

X1 = ø inner machine installation space

X2 = ø outer machine installation space

Complete Part No. with required number of strips XX. Example: TB20.44.12.6.01.0

More twisterband sizes upon request!

X: Series

Note: Series TB29.27.22. Rotary movement up to max. 720°

Base plates are delivered as standard as part of the twisterband module!

Calculation: number of strips depends on angle of rotation (please always round up number of strips)

TB12: XX = ______ + 2 = Example: XX = 1200° + 2 = Result: XX = 6 strips
TB20: XX = ______ + 2 = Example: XX = 1200° + 2 = Result: XX = 6 strips
TB29: XX = ______ + 2 = Example: XX = 1200° + 2 = Result: XX = 6 strips
TB30: XX = ______ + 6 = Example: XX = 1200° + 6 = Result: XX = 13 strips

X1 = ø inner machine installation space

X2 = ø outer machine installation space

**Base plates are delivered as standard as part of the twisterband module!

----

More information ► www.igus.co.uk/twisterband

www.igus.co.uk/twisterband
**twisterband (7,000° rotation) | Accessories**

**Interior separation for twisterband**

Separators are delivered unassembled. Simply push onto the openable crossbar.

**Separators**

To fit, simply open the e-chain®, insert a cable and press 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 press separators on and add more cables. The separators provide a clear, cable-friendly interior separation.

**Steel base plate dimensions for twisterband**

(for TB29.27.22 upon request)

Base plates are delivered as standard as 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**
twisterband HD (7,000° rotation) | Introduction | Advantages

Rotary movement in the most confined spaces, now even stronger - twisterband HD

Instead of strips, the twisterband HD has a strong pin/hook connection between the e-chain® links. Longer service life and higher filling are possible.

- Continuous cable guidance in rotational movements
- Strong pin/hook connection for high load and long service life
- For routing of electrical, fibre optic and pneumatic cables in one system
- Stop-dogs for defined bend radius
- Cable-friendly due to defined radius stop
- Max. rotating speed: 180°/s

**Typical industries and applications**
- Machining heads on machine tools
- Rotary tables
- Axis 6 on robots
- Generally all applications that currently work with slip rings

**Available from stock. Ready to ship in 24 - 48hrs.***

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

www.igus.co.uk/twisterbandHD
Safety separation for twisterband HD

Separators are delivered unassembled. Simply push onto the openable crossbar.

Separators

- Separator, for TBHD30.75.22 unassembled TB30.22.2
- Separator, for TBHD42.135.30 unassembled TB42.30.2

Easy opening and filling of the twisterband with a click or with the "easy" design. Simply press separators on and add more cables. The separators provide a clear, cable-friendly interior separation.

Steel base plate dimensions for twisterband HD

Base plates are delivered as standard as part of the twisterband module!
igus®
solutions for:

- Multi-axis motion
- Vertical motion
- Horizontal motion
- Predictive maintenance, condition monitoring and engineered projects

Solutions for multi-axis motion  ➤ From page 1006
Solutions for vertical motion  ➤ From page 1026
Solutions for horizontal motion  ➤ From page 1038
Predictive maintenance, condition monitoring and engineered projects  ➤ From page 1080
Multi-axis motion
- From page 1006

- e-spool standard and HD - flexible use
  - Telescopic/retractable applications
  - Theatre, stage and lighting technology
  - Space-saving alternative to zig-zag solutions

- e-spool compact - space-saving, spring driven
  - Retractable applications - linear or rotary
  - Small circular movements

- e-spool for manual operation - reliable and space-saving
  - Robot teach pendants
  - Workstations
  - Assembly lines

- e-spool power - motor driven for long extension lengths
  - Theatre, stage and lighting technology
  - Indoor and outdoors cranes

G

Horizontal motion
- From page 1038

- guidelok horizontal - upper run guide for long travels
  - Machine tools
  - Heavy swarf environments
  - Wherever a gliding application is not recommended

- basic flizz® - enclosed solution for long travels
  - Wastewater and sewage treatment works
  - Longitudinal scrapers, sand/grease traps
  - Electroplating facilities
  - Cranes
  - River locks

G

Vertical motion
- From page 1026

- liftband - cable guidance up to 13m height with limited installation space
  - Theatre and stage technology
  - Indoor cranes
  - Mobile telescopic antennas

- guidelok slimline P - safe vertical guidance
  - Storage and retrieval units for high-bay warehouses
  - Lifts
  - Elevators
  - Construction and crane lifts
  - Hoists
  - Automated mini-load system

- guidelok slimline P.S - lightweight plastic construction, cost-effective
  - Storage and retrieval units for high-bay warehouses
  - Lifts
  - Construction and crane lifts
  - Automated car parks
  - Ship lifts

- guidelite GLV - lighter, lower noise, simpler and less cost
  - Shuttle systems
  - High bay warehouse
  - Lifts
  - Hoists

G

Condition monitoring and engineered projects
- From page 1064

- isense smart plastics for predictive maintenance New
  - Wherever predictive maintenance is required
  - Harbour installations
  - Cranes
  - Car plants
  - Gantry systems

- PPDS - Push/Pull Detection System
  - Downtime sensitive plants, such as conveyor systems in power plants
  - Waste incineration systems
  - Chemical plants
  - Cranes

G

Modular projects - special solutions from stock
- Cranes
- Offshore
- And many other industries

More information ▶ www.igus.co.uk/glsl-ps
More information ▶ www.igus.co.uk/GLV
The alternative to cable reeling drums - reduce cable wear and reliably guide different media together in one system

e-spool

**e-spool advantages:**
- Energy supply is possible in all directions (horizontal, vertical, diagonal)
- More versatile and flexible to use than cable reeling drums
- Different media (power, data and fluids) can be routed together in one system
- If travels must be kept free
- If the technical system is to be hidden behind false ceilings/floors
- Very well suited for use in theatre and stage technology

**When to use another system:**
- With very high loads that have to be guided vertically
  - Zig-zag applications, page 123
- For high dynamics with lateral accelerations
  - Guidelok slimline P, page 1032
The cable reel without a slip ring - igus® e-spool

Routing many different cables in a small space: e-spool uniquely combines two different energy supply systems. The standard e-chain® is guided by a roller and always provides the correct length and tension of the energy supply system through an integrated retaining spring. In the starting position, the e-chain® is rolled up completely to save space. The twisterband connects the roller with the shaft block, which serves as an interface to the supply side. With twisterband no slip ring is needed. This makes data transmission highly reliable, while enabling a high degree of flexibility at the same time. Different media and cable/hose diameters can be carried side by side in one drum (diameters up to 17mm)

- No tensile load on the cables
- Energy supply is possible in all directions (horizontal, vertical, diagonal)
- Space-saving when e-chain® is rolled into the home position, paths remain free
- Cables can be retrospectively added or changed
- Alternative to zig-zag solutions
- Maximum extension and retraction speed 1m/s
- Large standard product range and special projects available

Typical industries and applications
- Telescopic/retractable applications
- Theatre, stage and lighting technology
- Space-saving alternative to zig-zag solutions

Available from stock. Ready to ship in 5 - 10 days*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

### e-spool | Selection table

<table>
<thead>
<tr>
<th>Part No. with 1 twisterband</th>
<th>Part No. with 2 twisterbands</th>
<th>Travel length ≤ l [m]</th>
<th>Drum ø [mm]</th>
<th>Cable length l [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-spool standard</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flexible use</td>
<td>(Illustration shows e-spool with 1 twisterband)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP1.600.</td>
<td>SP2.600.</td>
<td>4</td>
<td>600</td>
<td>8.6</td>
<td>1013</td>
</tr>
<tr>
<td>SP1.700.</td>
<td>SP2.700.</td>
<td>7</td>
<td>700</td>
<td>11.7</td>
<td>1013</td>
</tr>
<tr>
<td>SP1.850.</td>
<td>SP2.850.</td>
<td>14</td>
<td>850</td>
<td>19.9</td>
<td>1013</td>
</tr>
<tr>
<td>e-spool HD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>flexible use, with increased retraction force</td>
<td>(Illustration shows e-spool with 1 twisterband HD)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPHD1.600.</td>
<td>SPHD2.600.</td>
<td>4</td>
<td>600</td>
<td>8.6</td>
<td>1014</td>
</tr>
<tr>
<td>SPHD1.700.</td>
<td>SPHD2.700.</td>
<td>7</td>
<td>700</td>
<td>11.7</td>
<td>1014</td>
</tr>
<tr>
<td>SPHD1.850.</td>
<td>SPHD2.850.</td>
<td>14</td>
<td>850</td>
<td>19.9</td>
<td>1014</td>
</tr>
<tr>
<td>e-spool compact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>compact, space-saving</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SP1.240.</td>
<td></td>
<td>2</td>
<td>240</td>
<td>4.0</td>
<td>1016</td>
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<tr>
<td>SP1.400.</td>
<td></td>
<td>4</td>
<td>400</td>
<td>6.6</td>
<td>1016</td>
</tr>
<tr>
<td>e-spool for manual operation</td>
<td>(for applications where only one cable or hose is pulled out manually)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SPC1.300.</td>
<td></td>
<td>5</td>
<td>300</td>
<td>3.3 - 8.3</td>
<td>1020</td>
</tr>
<tr>
<td>---</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>e-spool power</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>motor-driven, for long extension lengths</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>e-spool power</td>
<td></td>
<td>35</td>
<td>upon request</td>
<td>upon request</td>
<td>1024</td>
</tr>
</tbody>
</table>

More information ► www.igus.co.uk/e-spool

Available from stock. Ready to ship in 5 - 10 days*
### Technical data

<table>
<thead>
<tr>
<th>Speed</th>
<th>≤ 1.5m/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceleration</td>
<td>≤ 2m/s²</td>
</tr>
<tr>
<td>Lateral speed</td>
<td>≤ 1m/s</td>
</tr>
<tr>
<td>Lateral acceleration (radial) / (axial)</td>
<td>≤ 1m/s² / 0.25m/s²</td>
</tr>
</tbody>
</table>

### Order key - e-spool

#### Order key - e-spool standard

<table>
<thead>
<tr>
<th>SP1.600.4000.03.R.0</th>
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</thead>
<tbody>
<tr>
<td>1 twisterband</td>
</tr>
<tr>
<td>Drum diameter ø</td>
</tr>
<tr>
<td>Max. extension length</td>
</tr>
<tr>
<td>Version number</td>
</tr>
<tr>
<td>Extension R / L</td>
</tr>
<tr>
<td>Standard colour black</td>
</tr>
</tbody>
</table>

#### Order key - e-spool HD

<table>
<thead>
<tr>
<th>SPHD2.850.14000.03.R.0</th>
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</thead>
<tbody>
<tr>
<td>2 HD twisterbands</td>
</tr>
<tr>
<td>Drum diameter ø</td>
</tr>
<tr>
<td>Max. extension length</td>
</tr>
<tr>
<td>Version number</td>
</tr>
<tr>
<td>Extension R / L</td>
</tr>
<tr>
<td>Standard colour black</td>
</tr>
</tbody>
</table>

#### Order key - e-spool compact

<table>
<thead>
<tr>
<th>SPC1.240.2000.01.R.0</th>
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</thead>
<tbody>
<tr>
<td>1 twisterband</td>
</tr>
<tr>
<td>Drum diameter ø</td>
</tr>
<tr>
<td>Max. extension length</td>
</tr>
<tr>
<td>Version number</td>
</tr>
<tr>
<td>Extension R / L</td>
</tr>
<tr>
<td>Standard colour black</td>
</tr>
</tbody>
</table>

#### Order key - e-spool for manual operation

<table>
<thead>
<tr>
<th>SPC1.300.5000.01.R.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 twisterband</td>
</tr>
<tr>
<td>Drum diameter ø</td>
</tr>
<tr>
<td>Max. extension length</td>
</tr>
<tr>
<td>Version number</td>
</tr>
<tr>
<td>Extension R / L</td>
</tr>
<tr>
<td>Standard colour black</td>
</tr>
</tbody>
</table>

---

### Guidelines

#### Guidelines for using e-spool

In view of the special mechanical stress inside an e-spool, we recommend using igus® chainflex® cables. We also recommend the following guidelines are observed:

1. Only put cables side by side in the linear chain - never stack them!
2. Where possible, cables with a TPE outer jacket should be used for unshielded cables
3. Shielded cables should be chosen from the CFROBOT range
4. The maximum bend radius of the twisterband must be accounted for
5. Where possible, use separators to protect cables against cross-over and abrasion against each other. To save space, install the separators alternately in segments positioned one behind the other
6. Insert cables sorted by diameter and/or bend radius - insert, small ones in the centre then increasingly larger ones towards the outside
7. Apply strain relief to both ends of the cable - when using a cable tie for strain relief, please ensure the head of the cable tie is underneath to avoid cable damage
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 to the axis of rotation

### Installation instructions

For applications that move horizontally, a smooth surface is required for the e-chain® to travel over.
e-spool standard and HD | Advantages

Flexible use - igus®
e-spool standard and HD

With igus® e-spool, cables are wound up in an e-chain® to save space. Various media can be supplied without interruption by the use of the twisterband. Adjustments and extensions of the filling are also possible at any time afterwards.

- Flexible energy supply - guidance of different media in one system
- Flexible use - energy supply in any direction is possible
- Cost-effective - twisterband enables rotary movement
- Space-saving - e-chain® retracts into a compact unit
- No tensile load on the cables
- Cables can be retrospectively added or changed

Typical industries and applications
- Telescopic/retractable applications
- Theatre, stage and lighting technology
- Space-saving alternative to zig-zag solutions

Part No. e-spool with 1 twisterband, extension right | Part No. e-spool with 1 twisterband, extension left

<table>
<thead>
<tr>
<th>Part No.</th>
<th>/mm</th>
<th>/mm</th>
<th>Travel length</th>
<th>SP₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP₁.600.4000.03.R.0</td>
<td>75</td>
<td>21</td>
<td>4</td>
<td>33.0</td>
</tr>
<tr>
<td>SP₁.700.7000.03.R.0</td>
<td>75</td>
<td>21</td>
<td>7</td>
<td>38.0</td>
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<tr>
<td>SP₁.850.14000.03.R.0</td>
<td>75</td>
<td>21</td>
<td>14</td>
<td>48.0</td>
</tr>
</tbody>
</table>

Maximum cable and hose diameters: 17mm

Part No. e-spool with 2 twisterbands, extension right | Part No. e-spool with 2 twisterbands, extension left

<table>
<thead>
<tr>
<th>Part No.</th>
<th>/mm</th>
<th>/mm</th>
<th>Travel length</th>
<th>SP₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP₂.600.4000.03.R.0</td>
<td>125</td>
<td>21</td>
<td>4</td>
<td>40.0</td>
</tr>
<tr>
<td>SP₂.700.7000.03.R.0</td>
<td>125</td>
<td>21</td>
<td>7</td>
<td>45.0</td>
</tr>
<tr>
<td>SP₂.850.14000.03.R.0</td>
<td>125</td>
<td>21</td>
<td>14</td>
<td>55.0</td>
</tr>
</tbody>
</table>

Maximum cable and hose diameters: 17mm

Note: If the e-chain® extension is upwards, igus® recommends the standard e-spool. If the e-chain® extension is vertical or horizontal, the application should be discussed with your igus® engineer. The HD version with greater retraction force may be required.
e-spool HD | Series SPHD1-SPHD2 | Product range
Reduce cable wear and reliably guide different media together

Illustration shows e-spool HD with 1 and 2 twisterbands

e-spool HD | With e-chain® and 1 or 2 twisterbands

<table>
<thead>
<tr>
<th>Part No. e-spool HD with 1 twisterband, extension right</th>
<th>Part No. e-spool HD with 1 twisterband, extension left</th>
<th>( B_i ) [mm]</th>
<th>( h_i ) [mm]</th>
<th>Travel length ( L ) [m]</th>
<th>Sp [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPHD1.600.4000.03.R.0</td>
<td>SPHD1.600.4000.03.L.0</td>
<td>75</td>
<td>21</td>
<td>4</td>
<td>11.0</td>
</tr>
<tr>
<td>SPHD1.700.7000.03.R.0</td>
<td>SPHD1.700.7000.03.L.0</td>
<td>75</td>
<td>21</td>
<td>7</td>
<td>18.0</td>
</tr>
<tr>
<td>SPHD1.850.14000.03.R.0</td>
<td>SPHD1.850.14000.03.L.0</td>
<td>75</td>
<td>21</td>
<td>14</td>
<td>46.0</td>
</tr>
</tbody>
</table>

Maximum cable and hose diameters: 17mm
The max. bend radii of 44mm in the inner radius and 77mm in the outer radius should be observed

<table>
<thead>
<tr>
<th>Part No. e-spool HD with 2 twisterbands, extension right</th>
<th>Part No. e-spool HD with 2 twisterbands, extension left</th>
<th>( B_i ) [mm]</th>
<th>( h_i ) [mm]</th>
<th>Travel length ( L ) [m]</th>
<th>Sp [kg]</th>
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</thead>
<tbody>
<tr>
<td>SPHD2.600.4000.03.R.0</td>
<td>SPHD2.600.4000.03.L.0</td>
<td>125</td>
<td>21</td>
<td>4</td>
<td>40.0</td>
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<tr>
<td>SPHD2.700.7000.03.R.0</td>
<td>SPHD2.700.7000.03.L.0</td>
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<td>21</td>
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</tr>
<tr>
<td>SPHD2.850.14000.03.R.0</td>
<td>SPHD2.850.14000.03.L.0</td>
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<td>21</td>
<td>14</td>
<td>56.0</td>
</tr>
</tbody>
</table>

Maximum cable and hose diameters: 17mm
The max. bend radii of 44mm in the inner radius and 77mm in the outer radius should be observed

Note: If the e-chain® extension is upwards, igus® recommends the standard e-spool. If the e-chain® extension is vertical or horizontal, the application should be discussed with your igus® engineer. In most cases, the HD version with increased retraction force is required.

1014 More information ➤ www.igus.co.uk/e-spool

e-spool standard and HD | Accessories
Interior separation

E2/000 interior separation - no lateral gap to side links necessary. Separators are assembled every 5th e-chain® link.

Interior separation for E2/000 e-chains®
Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.
For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.
For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

Separator, narrow unassembled
Separator, narrow assembled
Separator, narrow unassembled
Separator, narrow assembled
Separator, for TB30.75.22 unassembled
Separator, for TB30.75.22 assembled
Separator, for TB30.22.2 unassembled
Separator, for TB30.22.2 assembled

1015 More information ➤ www.igus.co.uk/e-spool
e-spool compact | Series SP1 | Advantages New

The compact e-spool systems enable trouble-free guidance and flexible filling.

- **Compact, space-saving cable reel without slip ring**
- **Cost-effective:**
  - Easy to install and replace
  - Space-saving and virtually "invisible"
- **Flexible energy supply:**
  - Guidance of different media in one system
- **Flexible use:**
  - Energy supply in any direction is possible
- **Space-saving:**
  - e-chain® retracts into a compact unit

**Typical Industries and Applications**

- Small circular movements
- Retractable applications - linear or rotary

### Product range

Route various media in a space-saving and flexible way

### e-spool compact | With e-chain® and 1 twisterband

<table>
<thead>
<tr>
<th>Part No. e-spool with 1 twisterband, extension right</th>
<th>Part No. e-spool with 1 twisterband, extension right</th>
<th>$b_1$</th>
<th>$h_1$</th>
<th>Travel length</th>
<th>$S_{Pi}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>SP1.240.2000.01.R.01</td>
<td>SP1.400.4000.01.R.02</td>
<td>23</td>
<td>9</td>
<td>4</td>
<td>13.5</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Note: | The compact e-spool systems for 2m and 4m extension are optimised for small installation spaces with smaller linear chains and twisterbands for a wide range of applications. As with the larger standard and HD systems, the compact e-spool systems enable trouble-free guidance and flexible filling. |
twisterband interior separation - separators are delivered unassembled. Simply pushed onto the openable crossbar. Separators are assembled every 4th e-chain® link.

Interior separation for twisterband

Separators - for installation simply open the e-chain®, insert a cable and press the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

Space-saving solution for a secure vertical movement. igus® e-spool with 3,500mm extension length in this handling unit. Fitted with igus® chainflex® CF9 control and CF30 motor cables as well as CF.Robot torsion cable and CA.PU pneumatic hose.
For applications where only one cable or hose is pulled out manually - e-spool for manual operation

The manually operated e-spool is designed for applications where only one cable or hose is pulled out by hand. The operator pulls out the cable to the required length for a control pendant or tool and can be retracted again after use. To prevent the cable from being under tension all the time, an inertia reel is fitted. In this way, the extension length can be locked. An extension length of up to 5m can be achieved.

- For applications where only one cable or hose is pulled out manually
- Compact, space-saving cable reel without slip ring
- Integrated locking mechanism against "unwanted" reverse winding (very similar to a vacuum cleaner cable)
- Also suitable for media and air hoses
- Handle with mounting option and strain relief

Typical industries and applications
- Robot teach pendants
- Workstations
- Assembly lines

The igus® e-spool in an extendable fan system made by Becker Electric Forklift Service in Erftstadt. Vertically extendable up to 10m. The e-spool supplies the motor with media and energy cables.
**Interior separation**

**twisterband interior separation** - separators are delivered unassembled. Simply pushed onto the openable crossbar. Separators are assembled every 4th e-chain® link.

**Interior separation for twisterband**

Separators - for installation simply open the e-chain®, insert a cable and press the separator onto the crossbar. Then add more cables. The separators provide a clear, cable-friendly interior separation.

At Liverpool University (UK), e-spools supply power and data to arrays of height-adjustable speakers. End to end cables ensure the best possible transmission reliability and sound quality. More information at www.igus.co.uk/e-spool
Motor-driven for long extension lengths - e-spool power

The e-spool power is a motor-driven e-spool for travels up to 35m. Like all e-spool systems, it can be filled with various cables and hoses and ensures reliable transmission with no breaks or slip rings. An igus® controller, which adapts dynamically to the travel speed, was specially developed for vertically hanging applications in theatres and opera houses and can be ordered as an option.

- Travel distances up to 35m
- Solid tubular steel construction
- Flexible filling with electrical and fibre optic cables, and pneumatic hoses
- Future-proof, additions and upgrades possible
- No tensile load on the cables

Typical industries and applications
- Theatre, stage and lighting technology
- Indoor and outdoor cranes
Cable guidance up to 13m height with limited installation space

Advantages of liftband:
- For high vertical applications that need a compact solution
- Modular, silent, space-saving; vertical guidance for energy, data and media
- Max. extension length 13m
- Available in 2 sizes
- Alternative to zig-zag solutions, but lighter and requires less installation space
- Vertical applications implemented with ease

When to use another system:
- With very high loads that have to be guided vertically
  - Zig-zag applications, page 123
- For high dynamics with lateral accelerations
  - guidelok slimline P, page 1032
Cable guidance up to 13m height with limited installation space - liftband

liftband - modular, silent, space-saving - igus® vertical guidance for energy, data and media. High vertical applications that need a compact solution can be achieved with liftband.

- 2 sizes: inner width 25mm and 32mm
- 2 bend radii: 175mm and 250mm
- Alternative to zig-zag solutions
- Lighter and smaller installation space
- Vertical applications implemented with ease
- Max. extension length 13m

Typical industries and applications
- Theatre and stage technology
- Indoor cranes
- Mobile telescopic antennas

Extended:
- secure cable supply up to 13m

Robust drive plate: for easy attachment to your application

Safe and strong:
- nylon straps for secure guidance and high fill weight

Tough:
- even with lateral system movements through "push-button" joint

Light:
- lightweight, compact design

Available in 2 sizes:
- easy triflex® for easy fitting of cables

Chamfered basket:
- for safe operation

Retracted:
- safe storage in a solid steel basket

Optimised for space:
- compact steel basket for best use of space

Technical data

Speed: ≤ 1m/s
Acceleration: ≤ 2m/s²
Lateral speed: ≤ 1m/s
Lateral acceleration: ≤ 2m/s²

Series | Extension height | Inner height | Inner width | Bend radius | Cable size | Page
--- | --- | --- | --- | --- | --- | ---
LB.E332.25 | 1 - 13 | 2 x 13 | 25 | 175 | ø 9 | 1030
LB.E332.32 | 1 - 13 | 2 x 17 | 32 | 250 | ø 12 | 1030

1) Simply press cables up to a diameter of 9mm into the e-chain®/pull cables up to a diameter of 11mm into the e-chain®
2) Simply press cables up to a diameter of 12mm into the e-chain®/pull cables up to a diameter of 15mm into the e-chain®

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
### liftband Series LB.E332.25 | e-chain® with "easy" design | Inner width 25mm

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Extension Height</th>
<th>( B_i )</th>
<th>( h_i )</th>
<th>( \leq R )</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB.E332.25.2.175,1.01.0</td>
<td>1</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,2.01.0</td>
<td>2</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,3.01.0</td>
<td>3</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,4.01.0</td>
<td>4</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,5.01.0</td>
<td>5</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,6.01.0</td>
<td>6</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,7.01.0</td>
<td>7</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,8.01.0</td>
<td>8</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,9.01.0</td>
<td>9</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
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<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,11.01.0</td>
<td>11</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,12.01.0</td>
<td>12</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
<tr>
<td>LB.E332.25.2.175,13.01.0</td>
<td>13</td>
<td>25</td>
<td>2 x 13</td>
<td>175</td>
<td>( \phi 9 )</td>
</tr>
</tbody>
</table>

*Simply press cables up to a diameter of 9mm into the e-chain/pull cables up to a diameter of 11mm into the e-chain.

### liftband Series LB.E332.32 | e-chain® with "easy" design | Inner width 32mm

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Extension Height</th>
<th>( B_i )</th>
<th>( h_i )</th>
<th>( \leq R )</th>
<th>Cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>LB.E332.32.2.250,1.01.0</td>
<td>1</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,2.01.0</td>
<td>2</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,3.01.0</td>
<td>3</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,4.01.0</td>
<td>4</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,5.01.0</td>
<td>5</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,6.01.0</td>
<td>6</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,7.01.0</td>
<td>7</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,8.01.0</td>
<td>8</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,9.01.0</td>
<td>9</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,10.01.0</td>
<td>10</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,11.01.0</td>
<td>11</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,12.01.0</td>
<td>12</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
<tr>
<td>LB.E332.32.2.250,13.01.0</td>
<td>13</td>
<td>32</td>
<td>2 x 17</td>
<td>250</td>
<td>( \phi 12 )</td>
</tr>
</tbody>
</table>

*Simply press cables up to a diameter of 12mm into the e-chain/pull cables up to a diameter of 15mm into the e-chain.
Solutions for vertical motion

**guidelok**

**slimline P**

Safe vertical guidance

**Advantages of guidelok slimline P:**
- Up to 7m/s and 10m/s²
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 50m
- No swinging of the e-chain®, high reliability due to the lock mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Energy, data and all kinds of media can be safely guided

**When to use another system:**
- With very high loads that have to be guided vertically
  - Zig-zag applications, page 123
- For high vertical applications with limited space
  - Liftband, page 1026
**Safe vertical guidance - guidelok slimline P**

In highly dynamic storage and retrieval systems a horizontal movement speed exceeding 7m/s is not uncommon. The advanced igus® guidelok slimline guides e-chains® even at the fastest speeds. Note: Systems of this type should be designed with our engineering team. We can provide a quotation quickly - please contact us.

- Up to 7m/s and 10m/s²
- Up to 80% less trough required, saving costs and weight
- For hanging systems up to 50m
- No swinging of the e-chain®, high reliability due to the lock mechanism and guiding rails
- Faster and easier installation
- Reduced noise
- Easy access for servicing
- Low weight due to plastic construction
- Energy and data and all kinds of media can be safely guided

**Typical industries and applications**

- Storage and retrieval units
- Lifts
- Elevators
- Construction and crane lifts
- Hoists
- Automatic miniload warehouses

**Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>For e-chains® series</th>
<th>Inner height $h_i$ [mm]</th>
<th>Inner width $B_i$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLSL.P.255.10</td>
<td>255</td>
<td>24</td>
<td>100</td>
<td>150 - 250</td>
<td>1034</td>
</tr>
<tr>
<td>GLSL.P.2700.10</td>
<td>2700</td>
<td>35</td>
<td>100</td>
<td>150 - 250</td>
<td>1034</td>
</tr>
</tbody>
</table>

Special versions with different widths, radii and channel section lengths possible. Please consult igus® for delivery time.

- Available from stock. Ready to ship in 24 - 48hrs.*
- *The delivery times indicated correspond to the average time until the ordered goods are dispatched.

- Find a video online
  - [www.igus.co.uk/glslp-movie](http://www.igus.co.uk/glslp-movie)

**Made completely from plastic, cost-effective, light and easy to assemble - guidelok slimline P.S**

- Significant savings in costs and weight
- Fast, safe and easy assembly with clip-on guide rails
- Reduced noise
- Easy access for servicing
- Energy, data and all kinds of media can be safely guided
- For hanging systems up to 50m
- Speed up to 7m/s and acceleration up to 10m/s²

More information [www.igus.co.uk/glsl-ps](http://www.igus.co.uk/glsl-ps)
guidelok slimline P | Series GLSL.P | Product range

<table>
<thead>
<tr>
<th>Part No..guidelok P</th>
<th>For series</th>
<th>$B_i$</th>
<th>$R$</th>
</tr>
</thead>
<tbody>
<tr>
<td>GLSL.P.255. 10.$R$.LLLL/FFFF</td>
<td>255</td>
<td>103</td>
<td>150</td>
</tr>
<tr>
<td>GLSL.P.2700.10.$R$.LLLL/FFFF</td>
<td>2700</td>
<td>100</td>
<td>150</td>
</tr>
</tbody>
</table>

LLL = Total length
FFF = Channel section length

Special versions with different widths, radii and channel section lengths possible. Please consult igus® for delivery time.

Complete Part No. with required radius ($R$) and required value for total length and channel section length

Example: GLSL.P.2700.10.150.9000/1500

Installation dimensions

- The "guidelite vertical" (GLV) guide trough guides e-chains® and cables for vertical applications such as high bay warehouse safely in one system
- Segmental design and lightweight components reduce weight and noise
- Open design and self-locking screws facilitate easy assembly
- Significant savings in costs and weight when compared with a complete housing
- Easy access for servicing

More information ► www.igus.co.uk/GLV

Cable guidance for vertical applications: lighter, low-noise, easier - lower costs - guidelite GLV - New

Speed vertical

$\leq 7 m/s$

Acceleration

$\leq 10 m/s^2$

guidelok slimline P | Series GLSL.P | Technical data

guidelok slimline P in a high-bay warehouse

More information ► www.igus.co.uk/glslp
Upper run guide for long travels, unsupported in swarf areas

Advantages of guidelok horizontal:
- Swarf cannot get stuck between upper and lower run
- Modular system with few parts (also possible without lateral trough)
- Lower cost than most steel chains or gliding systems
- Open guide trough design, swarf can fall through

When to use another system:
- For a cost-effective and fully enclosed complete solution
  - basic flizz®, Page 1044
- For a compact, quiet and cost-effective complete system as a maintenance-free alternative to a busbar
  - micro flizz®, page 1052

Solutions for horizontal motion
Upper run guide for long travels, unsupported in swarf areas - guidelok horizontal

Especially for long travels on machine tools, when the e-chain® would normally need to glide but metallic swarf is a problem, guidelok horizontal is a cost-effective solution.

- Unsupported travels up to 50m are possible
- Swarf cannot get stuck between upper and lower run
- Modular system with few parts (also possible without lateral trough)
- Enormous increase of unsupported lengths for e-chains®
- Lower push/pull forces (smaller e-chains®, unsupported and rollers = energy-efficient)
- Lower cost than most steel chains or gliding systems
- Open guide trough design, swarf can fall through

Typical industries and applications
- Machine tools
- Heavy swarf environments
- Wherever a gliding application is not advisable

guidelok horizontal | Introduction | Advantages

Operable and swarf-resistant: E4 e-tubes are enclosed and easy to fill

Upper run support: intelligent upper run guide with pivoting roller brackets

Swarf-proof: minimise wear by unsupported operation

Safe guidance: trough channel for guiding the lower run

guidelok horizontal | Selection table | Technical data

<table>
<thead>
<tr>
<th>Series</th>
<th>For e-chain® series</th>
<th>For bend radii from - up to</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>907.645.</td>
<td>E4.56/R4.56 ● E4.80/R4.80 ● E4.120/R4.120</td>
<td>150 - 300</td>
<td>1042</td>
</tr>
<tr>
<td>907.837.</td>
<td>E4.56/R4.56 ● E4.80/R4.80 ● E4.120/R4.120</td>
<td>350 - 500</td>
<td>1042</td>
</tr>
</tbody>
</table>

Material: galvanised steel

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Technical data

- Speed horizontal ≤ 1m/s
- Acceleration ≤ 5m/s²

More information | www.igus.co.uk/guidelok-HR

guidelok - swarf-proof and unsupported over long travels, more cost-effective than most steel chains or complex gliding systems

3D-CAD data, configurators, service life calculators and more | www.igus.co.uk/guidelok-HR 1041
**Product range | Series 907.645 | For bend radii up to 300mm**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For E4.1 series</th>
<th>Bi</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>E4.56</td>
<td>50 - 600</td>
<td>150</td>
</tr>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>E4.80</td>
<td>50 - 600</td>
<td>150</td>
</tr>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>E4.112</td>
<td>50 - 600</td>
<td>–</td>
</tr>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>R4.56</td>
<td>75 - 462</td>
<td>150</td>
</tr>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>R4.80</td>
<td>150 - 462</td>
<td>–</td>
</tr>
<tr>
<td>907.645.Bi/RLLLL/FFFF</td>
<td>R4.112</td>
<td>200 - 500</td>
<td>–</td>
</tr>
</tbody>
</table>

More series and radii upon request. Please consult igus® for delivery time.

LLLL = Total length FFFF = Channel section length

Complete Part No. with required value for total length and channel section length. Example: 907.645.200.300.2000/2000.0

---

**Product range | Series 907.837 | For bend radii from 350 up to 500mm**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For E4.1 series</th>
<th>Bi</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>E4.56</td>
<td>50 - 600</td>
<td>350</td>
</tr>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>E4.80</td>
<td>50 - 600</td>
<td>350</td>
</tr>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>E4.112</td>
<td>50 - 600</td>
<td>350</td>
</tr>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>R4.56</td>
<td>75 - 462</td>
<td>350</td>
</tr>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>R4.80</td>
<td>150 - 462</td>
<td>350</td>
</tr>
<tr>
<td>907.837.Bi/RLLLL/FFFF</td>
<td>R4.112</td>
<td>200 - 500</td>
<td>350</td>
</tr>
</tbody>
</table>

More series and radii upon request. Please consult igus® for delivery time.

LLLL = Total length FFFF = Channel section length

Complete Part No. with required value for total length and channel section length. Example: 907.837.200.300.2000/2000.0

---

**Installation dimensions**

LLLL = Total length FFFF = Channel section length

Principle sketch - guidelok horizontal - LLLL = Total length FFFF = Channel section length

---

**Find a video online**

➤ www.igus.co.uk/glhr-movie

**3D-CAD data, configurators, service life calculators and more** ➤ www.igus.co.uk/guidelok-HR 1043
Cost-effective, enclosed solution for long travels, e.g. wastewater treatment plants.

**Advantages of basic flizz**:  
- Protection against weather and dirt exposure  
- Low-maintenance system  
- Cost-effective and fully enclosed complete system  
- Standardised and modular design  
- Easy wall, floor or ceiling mounting options  
- Cables or hoses can be easily retrofitted  
- Reduce power costs - directly driven by the scraper. No additional drives needed (as is the case on cable reels)

**When to use another system**:  
- For an upper run guide for long travels, unsupported in swarf areas  
  - guidelok horizontal, Page 1038  
- For a compact, quiet and cost-effective complete system as a maintenance-free alternative to a busbar  
  - micro flizz, page 1052
Cost-effective, enclosed solution for long travels, e.g. waste water treatment plants - basic flizz®

- Low-maintenance system for travels up to 100m
- Protection against weather and dirt exposure
- Cost-effective and fully enclosed complete system
- Standardised and modular design
- Easy installation using a bracket with different mounting options
- Cable lengths up to 50% shorter than festoons, low-profile installation
- Cables are guided with a defined bend radius so tensile forces are absorbed by the e-chain®
- Cables cannot tangle or get damaged
- No slip ring contact (as with cable reels)
- Cables or hoses can be easily retrofitted
- Reduce power costs - directly driven by the scraper. No additional drives needed (as is the case on cable reels)
- Optionally available moving end arm (e.g. as mechanical connection for scraper trolley)
- Available in 2 sizes, each also available in HD version for even higher push/pull forces
- 3500 v2 and 3500 HD optionally available as rol e-chain® for travels up to 200 m and more

Typical industries and applications
- Wastewater and sewage treatment works (longitudinal scrapers, sand/grease traps)
- Electroplating facilities
- Cranes
- Plant construction
- River locks

More information | www.igus.co.uk/basicflizz
### Basic Flizz® Product Range | Series 2500 v2 | Series 2500 HD

<table>
<thead>
<tr>
<th>Specification</th>
<th>Part No. Basic Flizz® Series 2500 v2</th>
<th>Part No. Basic Flizz® Series 2500 HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trough module without glide bar</td>
<td>IE31.3134.E</td>
<td>IE31.3134.E</td>
</tr>
<tr>
<td>Trough module fixed end at the joint</td>
<td>IE31.3135.E</td>
<td>IE31.3220.E</td>
</tr>
<tr>
<td>Trough module fixed end at the centre</td>
<td>IE31.3136.E</td>
<td>IE31.3222.E</td>
</tr>
<tr>
<td>Trough module with glide bar</td>
<td>IE31.3137.E</td>
<td>IE31.3137.E</td>
</tr>
<tr>
<td>Trough module with glide bar and tiewrap plate</td>
<td>IE31.3217.E</td>
<td>IE31.3217.E</td>
</tr>
<tr>
<td>Installation set v2</td>
<td>IE31.3138.E</td>
<td>IE31.3138.E</td>
</tr>
<tr>
<td>Floating moving end</td>
<td>IE20.2500.05.ST.05.E</td>
<td>IE20.2500.05.ST.05.E</td>
</tr>
<tr>
<td>Moving arm <em>please also see page 1050</em></td>
<td>IE31.2316.E</td>
<td>IE31.2316.E</td>
</tr>
</tbody>
</table>

### Basic Flizz® Installation Dimensions | Series 2500 v2 | Series 2500 HD

- **Mounting brackets for e-chain® 2500 Basic Flizz® series 2500 v2**: Part No. 2500.34PZA.A2
- **Mounting brackets for e-chain® E4.28 Basic Flizz® series 2500 HD**: Part No. 916.809.1.052.VS.E.A2

### Standard Material
- AISI 304 Stainless Steel, Material 1.4301 (AISI 304). Option: Galvanised Steel or AISI 316L Stainless Steel, Material 1.4404 (AISI 316L).

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### Basic Flizz® Product Range | Series 3500 v2 | Series 3500 HD

<table>
<thead>
<tr>
<th>Specification</th>
<th>Part No. Basic Flizz® Series 3500 v2</th>
<th>Part No. Basic Flizz® Series 3500 HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trough module without glide bar</td>
<td>IE31.3946.E</td>
<td>IE31.3946.E</td>
</tr>
<tr>
<td>Trough module fixed end at the joint</td>
<td>IE31.3947.E</td>
<td>IE31.3947.E</td>
</tr>
<tr>
<td>Trough module fixed end at the centre</td>
<td>IE31.3948.E</td>
<td>IE31.3948.E</td>
</tr>
<tr>
<td>Trough module with glide bar</td>
<td>IE31.3949.E</td>
<td>IE31.3949.E</td>
</tr>
<tr>
<td>Trough module with glide bar and tiewrap plate</td>
<td>IE31.3951.E</td>
<td>IE31.3951.E</td>
</tr>
<tr>
<td>Installation set v2</td>
<td>IE31.3950.E</td>
<td>IE31.3950.E</td>
</tr>
<tr>
<td>Floating moving end</td>
<td>IE20.3500.115.ST.01.E*</td>
<td>IE20.3500.115.ST.01.E*</td>
</tr>
<tr>
<td>Moving arm <em>available upon request. Please consult igus® for delivery time.</em></td>
<td>IE31.2316.E</td>
<td>IE31.2316.E</td>
</tr>
</tbody>
</table>

### Basic Flizz® Installation Dimensions | Series 3500 v2 | Series 3500 HD

- **Mounting brackets for e-chain® 3500 Basic Flizz® series 3500 v2 - upon request**
- **Mounting brackets for e-chain® E4.42 Basic Flizz® series 3500 HD - upon request**

### Standard Material
- AISI 304 Stainless Steel, Material 1.4301 (AISI 304). Option: Galvanised Steel or AISI 316L Stainless Steel, Material 1.4404 (AISI 316L).
In addition to the floating moving end of the basic flizz® 2500 v2 and 2500 HD, igus® offers a modular and adjustable moving end arm for easy installation onto the existing structure.

**Series 2500 v2·2500 HD** | **Adjustable moving arm**

**basic flizz® | Application examples**

- basic flizz® fully enclosed complete solution
- Sand trap with telescopic igus® moving end arm - travel 19m
- Longitudinal scraper, mounted in the basin, sewage treatment plant in Plauen, Germany - travel 53m
- Sewage treatment plant in Volmetal, Germany - travel 26m
- Sand traps, sewage plant in Bamberg (Germany) - travel 26m

More information | www.igus.co.uk/basicflizz
Solutions for horizontal motion

micro flizz®

A system for the safe guidance of energy, data and air

Advantages of micro flizz®:
- Compact, quiet, cost-effective complete system as a maintenance-free alternative to a busbar
- e-chain® is guided in special slots, no gliding
- Smooth running due to ball bearings in the guide carriages
- Fast assembly due to pre-configured, modular system
- Less space required
- Also available as pre-assembled system
- Control option via stationary switch cabinet

When to use another system:
- For an upper run guide for long travels, unsupported in swarf areas
  - guidelok horizontal, Page 1038
- For a cost-effective and fully enclosed complete solution
  - basic flizz®, Page 1044
A system for the safe guidance of energy, data and air. Data rates up to 10Gbit/s - micro flizz®

**Easy connection:**
easy and versatile mounting options due to T-grooves

**Unsupported:**
winglets hold the e-chain® securely in the guide channel

**Secure:**
integrated strain relief within the guide carriage

**Maintenance-free:**
aluminium channel and lubrication-free plastic e-chain®

**micro flizz® - compact system for a secure guidance of power, data and air as a maintenance-free alternative to a busbar.**

- Smooth running due to ball bearings in the guide carriages
- e-chain® is guided in special slots, no gliding
- Accelerations up to 50m/s², speeds up to 6m/s and data rates up to 10Gbit/s
- Fast assembly due to pre-configured, modular system
- Less space required
- Also available as pre-assembled system
- Also available with an ESD e-chain® material version (upon request)
- 3 sizes available: cable/hose diameters MF06: max. Ø 8.0mm, MF08: max. Ø 9.5mm, MF10: max. Ø 16mm
- Control option via stationary switch cabinet

**Typical industries and applications**
- Storage and retrieval equipment
- Indoor cranes
- Industrial gates
- Workstations
- Wastewater and sewage treatment plants
- Camera systems
- Sliding doors
- Operator panels
- Measure systems
- Studio equipment
- Material handling equipment

**Find a video online**
www.igus.co.uk/MF-movie

**Technical data, dynamic values**

<table>
<thead>
<tr>
<th>Series</th>
<th>Speed</th>
<th>Acceleration</th>
<th>Data transmission rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF.06.10.018</td>
<td>6</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>MF.08.18.035</td>
<td>6</td>
<td>30</td>
<td>10</td>
</tr>
<tr>
<td>MF.10.50.075</td>
<td>6</td>
<td>50</td>
<td>10</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
**micro flizz**® | **Features**

- **Separated upper and lower run.** Running through the radius, integrated winglets fold in. The e-chain® glides freely.
- **Folding out after coming out of the radius,** the e-chain® is held securely in the micro flizz® guide channel.
- **Plastic spring dampens the rolling noise of the e-chain® in the flizz® channel.**
- **Igus® micro flizz® accessory - moving-end connection for compressed air coupling.**

### Special feature of the micro flizz® design

- **Before:** Moving lower run, gliding mode. Long travels need larger, stronger e-chains®
- **Today micro flizz®:** Small e-chains® self-guiding in the guide channel. Compared to the conventional system, friction has been reduced by a factor of 3

---

**micro flizz**® | **How it works**

1. The upper run and lower run of the flizz® e-chain® are separated from each other, which means less friction and less energy used when the e-chain® moves.
2. Winglets hold the e-chain® securely in the guidance channel.
3. Plastic spring causes the e-chain® to roll along gently in the flizz® channel, as a result noise is significantly reduced.
4. Integrated strain relief in the guide carriage for secure fixation of the cables.
5. Universal connection possible due to T-slots.
6. Attachment of the e-chain® by roller carriage on the moving end.
7. Opposing travel: double filling or two independent travels possible.

---

**chainflex® special cables for micro flizz®**

For the micro flizz® system, igus® has many suitable, highly-flexible special chainflex® cables for dynamic applications, available from stock! [More information](www.igus.co.uk/chainflex)
**Installation dimensions**

**Series MF06 - Part No. MF.06.10.018**

- Part No. | Bi | Ba | hi | ha | R Bend radius
- MF.06.10.018 | 10 | 19 | 11 | 17 | 018

**Installation height complete system** | 108.48mm
**Installation width complete system** | 29.5mm
**Recommended length channel pieces (die-cast aluminium material)** | 2.0m / 3.0m / 6.0m
**Cable/hose diameters** | Max. ø 8mm

**Installation dimensions**

**Series MF08 - Part No. MF.08.18.035**

- Part No. | Bi | Ba | hi | ha | R Bend radius
- MF.08.18.035 | 18 | 29 | 13 | 21 | 035

**Installation height complete system** | 161mm
**Installation width complete system** | 40.5mm
**Recommended length channel pieces (die-cast aluminium material)** | 2.0m / 3.0m / 6.0m
**Cable/hose diameters** | Max. ø 9.5mm

More information: [www.igus.co.uk/microflizz](http://www.igus.co.uk/microflizz)
### Installation dimensions

**Series MF10 - Part No. MF.10.50.075**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>hi [mm]</th>
<th>ha [mm]</th>
<th>R Bend radius</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF.10.50.075</td>
<td>50</td>
<td>63</td>
<td>20</td>
<td>27.5</td>
<td>075</td>
</tr>
</tbody>
</table>

**Installation height complete system**: 275mm

**Installation width complete system**: 107.6

**Recommended length channel pieces (die-cast aluminium material)**: 2.0m / 3.0m / 6.0m

**Cable/hose diameters**: Max. ø 16mm

---

### Application examples

**Up to 10Gbit/s at a speed of 6m/s – together with the power supply in the micro flizz® MF10**

**micro flizz® in the food sector**

**micro flizz® connecting a set of movable scales**

**Igus® micro flizz® in a sewage plant**

**Aisle movements over distances of up to 100m at speeds up to 6m/s**

**Guidance of 4 single cores up to 35mm² and FOC cables with data rates of more than 10Gbit/s**

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**More information**: [www.igus.co.uk/microflizz](http://www.igus.co.uk/microflizz)

---

**3D-CAD data, configurators, service life calculators and more**: [www.igus.co.uk/MF10](http://www.igus.co.uk/MF10)
Calculate the number of channel sections needed \( (n) \). Then round off the result.

\[
\text{n} = \frac{L}{F}
\]

\( F \) = Channel section length [mm]
\( L \) = Total length [mm]
\( R \) = Bend radius [mm]
\( Bi \) = e-chain® inner width
\( n \) = Number of channel pieces

**Order example - end infeed**

<table>
<thead>
<tr>
<th>MF 06.</th>
<th>10.</th>
<th>018.</th>
<th>L / F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MF 08.</td>
<td>18.</td>
<td>035.</td>
<td>L / F</td>
</tr>
<tr>
<td>MF 10.</td>
<td>50.</td>
<td>075.</td>
<td>L / F</td>
</tr>
</tbody>
</table>

- **MF.06.018.5000/2000**
- **MF.08.035.5000/2000**
- **MF.10.075.5000/2000**

**micro flizz** as an end infeed version with a total length of 5,000mm, consisting of two 2,000mm channels and 1 channel with a residual length of 1,000mm

**Order example - 2 carriages, opposing travel**

<table>
<thead>
<tr>
<th>MFG2 06.</th>
<th>10.</th>
<th>018.</th>
<th>L / F</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFG2 08.</td>
<td>18.</td>
<td>035.</td>
<td>L / F</td>
</tr>
<tr>
<td>MFG2 10.</td>
<td>50.</td>
<td>075.</td>
<td>L / F</td>
</tr>
</tbody>
</table>

- **MFG2.06.10.018.10000/3000**
- **MFG2.08.18.035.10000/3000**
- **MFG2.10.50.075.10000/3000**

**micro flizz** mounted with 2 opposing carriages. Total length 10,000mm, consisting of two 3,000mm channels, the infeed module (200mm) and two channels each with a residual length of 1,900mm

**Order example - Centre infeed**

<table>
<thead>
<tr>
<th>Order example</th>
<th>End infeed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>micro flizz</strong></td>
<td>micro flizz®</td>
</tr>
<tr>
<td>Order example - end infeed</td>
<td>Order example - 2 carriages, opposing travel</td>
</tr>
<tr>
<td><strong>micro flizz</strong></td>
<td>Order example - Centre infeed</td>
</tr>
</tbody>
</table>

- **micro flizz** mounted with 2 opposing carriages. Total length 10,000mm, consisting of two 3,000mm channels, the infeed module (200mm) and two channels each with a residual length of 1,900mm

Calculate the number of channel sections needed \( (n) \). Then round off the result.

\[
\text{n} = \frac{2 \times L - 200}{2 \times F}
\]

\( F \) = Recommended channel lengths: 2,000, 3,000, 6,000mm
\( Bi \) = Series 06: 10mm / Series 08: 18mm / Series 10: 50mm
\( hi \) = Series 06: 11mm / Series 08: 13mm / Series 10: 20mm

**3D-CAD data, configurators, service life calculators and more**

www.igus.co.uk/microflizz
Solutions for predictive maintenance

isense smart plastics
For greater plant availability

- Make maintenance and repair of your machines more efficient and cost-effective with smart plastics
- smart plastics reduce failures
- Intelligent products predict the maintenance date in good time and can be integrated into your processes and systems
- Wherever predictive maintenance is required
Moving energy made smart - smart plastics make smart factories - igus® isense

As a manufacturer and supplier of plastic components such as energy chains, cables and bearings, igus® is also going through a digital development process and is increasingly orienting its products towards use in smart factories. The aim is to make the maintenance and repair of its plastics more efficient and cost-effective. Thanks to the newly developed igus® isense products, maintenance and repair are not only being focused on more in industrial production; they also benefit from digitisation and its advantages.

- Reduce maintenance costs
- Eliminate unplanned downtime
- Increase service life
- Increase equipment efficiency
- Save time - faster detection of faults
- Reduce energy consumption

Typical industries and applications
- Wherever predictive maintenance is required
- Harbour installations
- Cranes
- Car plants
- Gantry systems

Making maintenance and repair of machines and systems more efficient and cost-effective

Many new sensors and monitoring systems have been developed for the isense product family, making igus® plastic solutions into intelligent products. The result is that igus® components do not simply develop a defect unexpectedly but predict the defect and indicate the need for maintenance in advance. With this new development, igus® has added predictive maintenance - intelligent production meets equally intelligent maintenance.
igus® isense modules, which use sensors to collect data from energy chains, cables, linear guides or slewing ring bearings, are equipped with an interface and can be easily integrated into a control cabinet. A data logger allows values to be stored on an SD card. The data measured by the various isense modules is then sent wirelessly to the icom module, summarised and processed.

**EC.M - e-chain® cycle monitoring / EC.W - e-chain® wear monitoring**

**Always moving - EC.M sensor / wear detection - EC.W sensor**

The EC.M sensor is mounted on the moving end of the e-chain® in order to record the application data. It detects values such as acceleration, velocity, temperature and number of cycles, and determines the distances completed as well as the remaining service life of the system.

The EC.W sensor measures the wear on the crossbar, on the pin/bore connection or on the liners depending on the product and sends a signal when the limit is reached.

**EC.I - integrated**

**Non-contact wear measurement**

For rol e-chains®, e.g. series P4.1, the pin/bore connection is the mechanically most stressed component. Directly integrated in the e-chain® link, the EC.I sensor contactlessly measures the wear in the pin/bore connection for maintenance planning.

**EC.P - Push/Pull force monitoring**

**When forces are critical: EC.P sensor measures push/pull forces**

Use of the EC.P sensor saves maintenance personnel from having to inspect long travel distances - information is always available and can automatically be passed on to the isense system.

**EC.B - e-chains® breakage detection**

**Detect e-chain® breakages automatically with the EC.B sensor**

The EC.B break detection sensor reduces the amount of work of maintenance technicians responsible for looking after crane installations and gantries. The EC.B sensor can detect breakage of a chain link caused by parts or debris falling into the system. In the past, this problem played a part in the failure of a crane, as breakage of an e-chain® link automatically leads to overloading and failure of the opposite side.

**EC.RC - run control**

**Monitoring the operating status of the e-chains®, especially in guide troughs**

Sensors measure and check the position of the e-chain®. In this way, the machine is prevented from continuing to operate if mechanical faults occur; meaning that total loss of the e-chain® or an electrical shutdown due to cable damage are avoided.
CF.Q - chainflex® cable service life
Detect hidden cable damage early

The CF.Q sensor indicates changes in the electrical properties; and allows detection of impending cable failure in advance. The engineer then decides what priority the replacement of a cable has and what the consequences of a defect might be.

CF.P - Push/Pull force monitoring
Prolong cable life

Tensile forces acting on the cables of an e-chain system® can significantly reduce the service life. The CF.P system measures the forces directly at the strain relief and indicates the need for action.

DLT.W - drylin® T wear monitoring
Monitor wear status of drylin® linear units

Used to detect when the wear of a drylin® linear guide has reached a level normally associated with the end of the guide’s service life. A plastic element that has an integrated sensor and can be retrofitted, signals the need for replacement in good time.

PRT.W - iglidur® PRT wear monitoring
Monitor wear status of iglidur® slewing ring bearings

To determine the wear limit of iglidur® slewing ring bearings. Mounted in a milled slot below the sliding elements of the PRT, the PRT.W sensor measures the abrasion and can indicate the required replacement promptly via the icom communication module before a failure.

icom - data concentrator
Data collection and transmission

These sensors become even more useful when linked to the icom module - a data concentrator - that can transfer the measured values to an isense system. How the sensor data can be further processed depends on the respective system chosen. igus® currently offers four different variants.
A choice of four different isense smart plastics concepts makes integration into existing infrastructure seamless

The icom module sends the data gathered by the sensors to a PC or integrates it via a computer into the existing software environment or IT infrastructure. In addition, connection to the igus® Data Centre is possible. By comparing live data with data collected from many existing test applications conducted at the igus® 2,750m² test facility using machine learning techniques and AI algorithms, maintenance recommendations can be provided.

Due to the numerous test findings that are fed into the online service life calculators, igus® is able to predict precisely how long an e-chain® will work reliably in a particular application. The isense modules provide live service life updates of the system, improving overall safety. This is because it includes the current ambient conditions of the actual application. Predictive maintenance ensures that repair or replace tasks are planned only when it is really necessary. This saves time and maintenance cost.

When the isense online system is used, the time shown until the next maintenance is based on the algorithms of the service life calculators for e-chain® systems and chainflex® cables, which have been available on the Internet for many years: The service life calculator combines the results of many thousands of tests and applications in the field into a predicted life in double strokes or kilometres. In the isense system, the starting values are compared with the real application and a constant comparison takes place with the online models based on AI and machine learning algorithms.

Through numerous tests, the results of which are incorporated into the online service life calculator, igus® can predict very accurately how long an e-chain® will reliably work in the respective application.

More information ➤ www.igus.co.uk/lifetime

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**isense online | smart plastics**

Smart production - connected solution

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**isense integration | smart plastics**

Early ordering of replacement parts with direct connection to ERP

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**isense online benefits at a glance**

- The best method to plan maintenance and minimise inspection work
- Efficient maintenance organisation according to priority and, thanks to integration into the ERP, with appropriate replacement parts from stock provided after the sensor alert
- Predictive and plannable maintenance due to early information on necessary service or replacement
- Data from the igus® laboratory is processed on a server with anonymised customer data and also with open data from other customer applications in order to create a full data model
- Service life predictions from the protected customer area are regularly compared with the data model
- Benefits from all of the test data in the igus® database and keeps learning every day

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**isense integration benefits at a glance**

- Wide variety of protocols and standards (Profinet, Ethernet, EtherCat, CC-Link IE Field), OPC-UA, MQTT
- Integration into the existing software environment and the IT infrastructure
- Integration into the customer’s production visualisation software
- Operating states of different igus® components visible at a click of the mouse
- Ordering of replacement parts via a connected ERP system
- Connection to control software via customer’s infrastructure (Ethernet, Profinet, CC-Link IE Field etc.)
- Machine shutdown or acoustic / visual warnings

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**isense standalone benefits at a glance**

- Easily integrated by a machine programmer
- Sensors (EC.B - break, CF.Q - cable monitoring) on e-chains® and cables gather the measured values
- The machinery can be switched off in two ways: directly by means of the normally closed (NC) contact switch or through evaluation via an I/O interface on the customer’s PLC.
- The data can be sent to the maintenance team via a serial interface (RS232/UART) to allow in-house evaluation of the data.

**isense offline benefits at a glance**

- An additional industrial PC is required to display all messages via the customer’s IT infrastructure.
- No connection to the Internet therefore no comparison of the maintenance recommendations with an online database.
- Manual update of service life information through comparison with the igus® database is necessary.
- Good overview on the Industrial PC: all impending failures in the production environment are displayed.
- Ideal for production managers and shift supervisors who are interested in facilitating smooth day-to-day work in component manufacturing or service provision and want to efficiently deploy their maintenance technicians.
- Quickly and easily installed lean software solution.
- All messages are displayed on an additional industrial PC.

**isense standalone | smart plastics**
Keep production trouble-free easily

**isense offline | smart plastics**
Keep track of things at all times in large factories.
Online condition monitoring from anywhere in the world - daily maintenance recommendations

In addition to the maintenance recommendation alerts, all measured sensor values can be displayed with history on a detailed page. In this way, exceptional operating conditions or creeping mechanical changes can be detected early on and corresponding measures initiated in good time.
Solutions for predictive maintenance

PPDS
Push/Pull force monitoring

- Easy installation, non-interchangeable connectors
- Easy programming using the keypad directly at the device
- Compact housing, corrosion-resistant and with EMC protection
- The force limit is programmed in tensile and compression directions
- The plant shuts down when the force is exceeded
- Custom programmable
- Event logging in the data memory
- igus® smart plastics - intelligent products forecast maintenance date in good time &gt; Page 1064
Push-pull force monitoring - Push-Pull Force Detection System - PPDS

The PPDS system is an electronic diagnostics tool that performs online monitoring of push/pull forces on 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 break. The PPDS system measures the forces on the e-chain® several times per second, and compares the information with the calculated specification. If a difference is found, a signal is triggered. How the signal is used can be freely selected (e.g. immediate stop, slow down, acoustic signal, light signal)

- 3 PPDS system options are available
- Easy installation by means of non-interchangeable connectors
- Easy programming using the keypad directly at the device
- Compact housing, corrosion-resistant and with EMC protection
- The force limit is programmed in tensile and compression directions
- The plant shuts down when the force is exceeded
- Custom programmable and event logging in the data memory

Typical industries and applications

- Installations and systems that are susceptible to disruption such as conveyors in power plants
- Waste incineration plants
- Chemical plants
- and cranes
- In general, for long travels where a high degree of reliability is required
- For long travels when push/pull force monitoring is needed

PPDS basic: 
- reliability from stock
- PPDS evaluation unit: signal or alarm in response to system overload

PPF Sensor: 
- force is measured directly at the mounting bracket of the e-chain®

Complete package: 
- including connecting cables

PPDS system options are available

- PPDS basic:
  - Easy programming using the keypad directly at the device
  - Compact housing, corrosion-resistant and with EMC protection
- PPDS pro - when the requirements for operational reliability are extremely high
  - The system for very long gliding applications with an igus® floating moving end (used to compensate lateral movements)
  - The force sensor is integrated in the floating moving end and works in connection with the PPDS evaluation unit.
- PPDS advanced - for long travels
  - The system for very long gliding applications with an igus® floating moving end (used to compensate lateral movements)
  - The force sensor is integrated in the floating moving end and works in connection with the PPDS evaluation unit.

More information | www.igus.co.uk/PPDS

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information | www.igus.co.uk/PPDS

PPDS system, testing equipment in the igus® laboratory

PPDS basic - standard

So far the realisation of Condition Monitoring Systems was limited to large-scale e-chain® projects, e.g. ship-to-shore cranes. PPDS basic now makes this technology available for all standard industrial applications. Simple force measurement at the mounting bracket of the e-chain® enables monitoring at a reasonable price, even in the case of e-chains® with travels of considerably less than 100m.

- Cost-effective system protection
- Signal or alarm in the event of system overloading
- Very space-saving

More information | www.igus.co.uk/PPDSbasic

PPDS advanced - for long travels

The system for very long gliding applications with an igus® floating moving end (used to compensate lateral movements).

More information | www.igus.co.uk/PPDSadvanced

PPDS pro - when the requirements for operational reliability are extremely high

The system for long travels when extreme operational reliability is essential. The PPDS pro analysis unit can analyse force thresholds by position. Here as well, a load cell is installed in the floating moving end.

More information | www.igus.co.uk/PPDSpro

When planning integration of these products, please consult igus®.

Available from stock. Ready to ship in 24 - 48hrs.*

More series available upon request. Please consult igus® for delivery time.

Complete Part No. with the required e-chain® width index Bi.
Modular projects
Special solutions from stock

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Absolute functional reliability
- System guarantee available upon request and depending on the application
- PPDS moving end - electronic Push/Pull Detection System
- Fixed end modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliding - gliding elements for even longer service life of e-chains® where long travels are involved
- HD trough systems with different installation set designs, matching the respective application and duty levels
Special solutions from stock - modular projects

The igus® project kit system - tested project solutions proven in numerous applications are now available as standard modular kits.

- Faster quotations, faster project planning
- Detailed service manuals and documentation
- Time and cost savings
- Absolute functional reliability
- System guarantee available upon request and depending on the application
- PPDS moving end - electronic Push/Pull Detection System
- Fixed end modules for easy attachment of the e-chain® inside the guide trough, with no drilling required
- Extreme gliding - gliding elements for even longer service life of e-chains® where long travels are involved
- HD trough systems with different installation set designs, matching the respective application and duty levels

Typical industries and applications
- Cranes
- Offshore
- and many other industries

Find a video online
► www.igus.co.uk/System-Project

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Modular projects | Applications

Long travels with electronic push/pull force monitoring with the igus® PPDS system

Series 4040R on a coal unloading system. Travel 190m, speed 0.5m/s, fill weight 8.06kg/m³

Series 4040HD on 180m travel lengths with housing. Temperature range from -40°C/+40°C and in very dirty environments

Crane system designed by igus®

Igus® project planning example, here: trough modules

3D-CAD data, configurators, service life calculators and more ► www.igus.co.uk/projects
e-chains® for long travels
E4/4HD | System P4 | rol e-chains® | autoglide

Advantages of igus® e-chains® for long travels

● Travel lengths of 800m and more are possible
● Very space-saving and energy-efficient
● For speeds up to 10m/s
● For fill weights up to 30kg/m
● Weather and dirt-resistant
● Suitable chainflex® cables
● Optional Condition Monitoring Systems
E4/4HD | P4 | Rol e-chains® | E2/000 rol e-chains®

E-chains® for long travels

Very high fill weights for long travels - E4/4HD “Heavy-Duty”
- For very heavy fill weights and long travels
- Strong, even when used in very dirty or humid environments
- High torsional rigidity
- Long service life
- Recommended for heavy-duty applications
  ► From page 1092

Reduce energy consumption by 57% - P4 profile-rol e-chain®
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- autoglide crossbars for safe guidance
  ► From page 1112

Rolling instead of gliding, long travels up to 800m - E4/4 rol e-chain®
- 75% reduction of drive power needed to move the e-chain®
- Long travels up to 800m with E4/4 rol e-chain®
- Speeds up to 6m/s possible
- Can be used in dirty environments
  ► From page 1142

Long travels up to 150m, energy-efficient and cost-effective - E2/000 rol e-chain®
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Max. rolling speed up to 4m/s
- Available as cost-effective ready-to-fit harnessed system
- Many accessories available
  ► From page 1160

autoglide | 4 versions
Self-guiding e-chain systems®, without the need for any guide troughs

Self-guiding e-chains® for system E4.1 - autoglide version 01
- For the larger E4.1 e-chains®
- Simple guide elements for quick installation
- The autoglide crossbars safely guide the e-chain® replacing the need for a guide trough
- For travels over 10m
- Floor guides can be driven over
  ► From page 1174

Self-guiding e-chains® for system E2/000 - autoglide version 02
- Travel distance up to 70m and speed up to 2.0m/s
- Very compact, removes troughs forming an obstacle in the working area
- Quick installation for long travels
- Openable along the inner radius
- Clip-on glide wings, secure movement of the e-chain®
  ► From page 1182

easy chain® openable along the outer radius, fitted with moulded autoglide grooves along the inner radius - autoglide Version 03
- Doubly cost-effective due to elimination of guide troughs and economical, one-piece e-chain®
- Very quick assembly time - “easy” design
- Small width, quiet operation
- UL94-V2 classification
  ► From page 1190

Special glide shoes provide a safe guiding for the E2/000 - autoglide version 04
- Reliable and precise guidance due to special plastic glide shoes
- Long travels with easier filling
- Provides precise lateral guidance and a smooth gliding of the e-chain®
- e-chains® openable along the outer radius
  ► From page 1194

More information ► www.igus.co.uk/longtravels
3D CAD, configurators, service life calculation and more ► www.igus.co.uk/longtravels
E4/4HD

Very high fill weights for long travels

E4/4HD advantages:
- For heavy-duty applications
- For very heavy fill weights and long travels
- The E4/4HD offers the required strength for long travels, dirty environments or with high humidity
- The undercut design provides extremely high torsional rigidity
- Extended service life is facilitated by particularly large glide surfaces
- Recommended for heavy-duty applications

When to use another e-chain® series:
- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  - P4 system, page 1112
- When you want a strong E4/4 rol e-chain® requiring 75% less drive power
  - E4/4 rol e-chain®, page 1142
- When you want a self-guiding e-chain system® without any guide troughs
  - autoglide, page 1170
E4/4HD | Introduction | Advantages

Very high fill weights for long travels - E4/4HD

The E4/4HD system was designed for the most demanding tasks. The E4/4HD provides the required strength for long travels, with high fill weights, dirty environments or with high humidity.

- Sturdy side links for very high fill weights and long travels
- The undercut design provides extremely high torsional rigidity
- Extended service life is facilitated by particularly large glide surfaces
- Recommended for heavy-duty applications

Typical industries and applications

- RTGs, quayside cranes, and many other types of crane
- Heavy machinery
- Steelworks
- Shipyards
- Composting plants
- Construction machines
- Plaster, concrete, chemical and mineral factories
- Farms
- General mechanical engineering etc.

E4/4HD | Selection table

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<th>Series</th>
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<th>Inner width</th>
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Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
- Simple opening and closing of e-chain® crossbars
- Also for use in hard to reach locations
- Significant assembly time reduction

More information ➤ www.igus.co.uk/E4savetime

AX - special e-chains® - especially for fine dust applications

- For long travels in fine-particle applications
- Exterior stop-dogs prevent the build-up of dust, dirt, swarf, flour, etc.
- Mounting brackets and accessories available

More information ➤ www.igus.co.uk/4040AX

Explore the benefits ➤ www.igus.co.uk/best/E4HD
Technical data

- **Speed gliding**: ≤ 10 [m/s]
- **Acceleration gliding**: ≤ 50 [m/s²]
- **Material - permitted temperature**: -40°C / +120°C
- **Flammability class**: VDE 0304 IIC UL94-HB

Order example | Order key

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:

- **e-chain®** (1.0m) please indicate e-chain® length or number of links: 1.0m or 11 links: 4040HD.30.300.0
- **+ Mounting brackets**: 1 full set, steel: 40400HD.12.E
- **Interior separation**: with 2 separators assembled every 2nd link: 2 x 56.1.1

Order text: 1 m - 4040HD.30.300.0 + 40400HD.12.E + 2 x 56.1.1

E4/4HD | Application example

The maintenance-free series 4040HD protects the igus® chainflex® motor and signal cables during the lifting and lowering movements of this tidal turbine and protects them against the aggressive ambient conditions. 20m vertical movement above and below water.
e-chains® | Series 4040HD | Crossbars every link (crossbars removable along the inner and outer radius)

e-tubes | Series 8840HD | Fully closed (i.e., operable along the outer radius, from one side)

<table>
<thead>
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<th>Part No.</th>
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<td>4040HD.</td>
<td>35. R0</td>
<td>350</td>
<td>404</td>
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<tr>
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<tr>
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</tr>
<tr>
<td>4040HD.</td>
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<td>441</td>
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<tr>
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<td>40. R0</td>
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<td>454</td>
<td>7.76</td>
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<table>
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<tr>
<th>Part No.</th>
<th>e-chains® / e-tubes</th>
<th>Bi</th>
<th>Ba</th>
<th>4040HD</th>
<th>840HD</th>
</tr>
</thead>
<tbody>
<tr>
<td>4040HD.</td>
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<tr>
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</tr>
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<td>–</td>
</tr>
<tr>
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<td>550</td>
<td>604</td>
<td>8.98</td>
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</tr>
<tr>
<td>4040HD.</td>
<td>60. R0</td>
<td>600</td>
<td>654</td>
<td>8.31</td>
<td>–</td>
</tr>
</tbody>
</table>

Note: We recommend the project planning of such a system to be carried out by igus®.
In case of travels under 10m we recommend an unsupported e-chain®.

Available bend radii

<table>
<thead>
<tr>
<th>R [mm]</th>
<th>135</th>
<th>150</th>
<th>200</th>
<th>250</th>
<th>300</th>
<th>350</th>
<th>400</th>
</tr>
</thead>
</table>
| Complete Part No. with required radius R. Example: 4040HD.30.300.0

Swarf up to +850°C
- e-tubes to withstand +850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igumid HT material

More information: www.igus.co.uk/HT
Steel, pivoting | For gliding applications and long travels

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>40400HD.11.E</td>
<td>Mounting bracket</td>
</tr>
<tr>
<td>40400HD.21.E</td>
<td>Mounting brackets moving end, assembled</td>
</tr>
<tr>
<td>40400HD.20.E</td>
<td>Mounting brackets fixed end, assembled</td>
</tr>
</tbody>
</table>

Stainless steel version available. Please add the index E. (Material: stainless steel 1.4301)

Note: By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled!

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1300

---

E4/4HD | Series 4040HD-8840HD | Accessories

Steel mounting brackets | Pivoting

Moving end 40400HD.1.E

Fixed end 40400HD.2.E

Set of stainless steel mounting brackets, assembled

Mounting brackets moving end, assembled

Mounting brackets fixed end, assembled

Stainless steel version available. Please add the index E. (Material: stainless steel 1.4301)

---

E4/4HD | Series 8840HD-4040HD | Accessories

Interior separation | Increase cable service life

More interior separation options ➤ next page

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

Standard - for any application

Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation

Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables

Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®. Also available for QuickLock crossbars.

For side-mounted applications

Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments

Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation

Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

---

Shelves Width = X [mm]

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>un assembled</th>
<th>assembled</th>
<th>X [mm]</th>
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</table>
Lean separators

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Notch locking separator for increased holding force

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Note: Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm

As standard separators are fitted every 2nd e-chain® link!

Lean separator vs. standard separator—measured on a 4m long trough.

Lean separator design—several layers of cables fitted quickly, save up to 50% assembly time.

("Lean separator vs. standard separator—measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

More interior separation options

Notch locking separator for increased holding force

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Aluminium SuperTrough | Heavy-duty version

Part No. 974.30.SL | 974.31.SL | Trough height: 184mm

Installation set heavy duty with C-Profile

<table>
<thead>
<tr>
<th>Width</th>
<th>B_{a}</th>
<th>Part No.</th>
<th>installation set</th>
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<td>974.50.275</td>
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<td>.10</td>
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<td>974.50.275</td>
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<tr>
<td>.60</td>
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</table>

Order example: length of 30m—centre fixed for series 4040HD.30.300.0 with B_{a} = 358

Trough side part, incl. glide strips, without glide bar

Order text: 16m guide trough without glide bar (16 x 2m sections) 974.30.SL

Trough side part, incl. glide strips, with glide bar

Order text: 16m guide trough with glide bar (16 x 2m sections) 974.31.SL

Installation set complete (quantity: guide trough sets + 1)

Order text: 17 installation sets

Option: for an additional noise dampening with silencer profile, please add index A

974.50.475

974.30.SL

Principle sketch: number of installation sets to be installed = number of trough sections + 1

Trough set
Installation set
Glide bar
C-profile
B_{a} = outer width
B_{a} = inner width
H_{a} = outer height
H_{a} = inner height
n_{a} = number of installation sets
n_{a} = number of trough sections
Plaintext representation of the document content...
Steel, pivoting: For gliding applications and long travels

<table>
<thead>
<tr>
<th>Part No. full set</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5050HD.12.2.VS.E</td>
<td>Set of stainless steel mounting brackets, assembled</td>
</tr>
<tr>
<td>5050HD.1.2.VS.E</td>
<td>Mounting brackets moving end, assembled</td>
</tr>
<tr>
<td>5050HD.2.2.VS.E</td>
<td>Mounting brackets fixed end, assembled</td>
</tr>
</tbody>
</table>

Stainless steel version available. Please add the index E (Material: stainless steel 1.4301)

Attachment options for these steel mounting brackets.

Note: By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled!

Strain relief e.g. clamps, tie-wraps, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

---

Steel pivoting: For gliding applications and long travels

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</tr>
<tr>
<td>5050HD.2.2.VS.E</td>
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</tr>
</tbody>
</table>

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As standard separators are fitted every 2nd e-chain® link!

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time

("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)

More interior separation options

Notch locking separator for increased holding force

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Extension links | For extremely wide e-chains® up to 3.0m

- Virtually unlimited side-by-side attachment when high fill weights necessitate extremely wide e-chains® (up to 3,000mm)
- The unsupported length FLmax can be increased when high fill weights are required

igus® e-chains® on a container crane. High loads and high speeds in difficult weather conditions
### Installation set heavy duty with C-Profile

<table>
<thead>
<tr>
<th>Width (index)</th>
<th>Part No. (installation set)</th>
<th>Trough height</th>
<th>Length of the C-profile depends on $B_{Ri}$ (as shown on the table)</th>
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</thead>
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<td>236mm</td>
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<td>.07</td>
<td>139 975.50.275</td>
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<td>.08</td>
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<td>464 975.50.600</td>
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<td>.42</td>
<td>489 975.50.625</td>
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<td>.46</td>
<td>526 975.50.650</td>
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<td>236mm</td>
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<td>.52</td>
<td>589 975.50.725</td>
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<td>614 975.50.750</td>
<td>236mm</td>
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</tr>
<tr>
<td>.60</td>
<td>664 975.50.800</td>
<td>236mm</td>
<td></td>
</tr>
</tbody>
</table>

**Order example:** length of travel 30m - centre fixed for series 5050HD, 30.300.0 with $B_{Ri} = 364$

- Trough side part, incl. glide strips, **without** glide bar
- Order text: 16m guide trough **without** glide bar (16 x 2m sections) 975.30.SL
- Trough side part, incl. glide strips, **with** glide bar
- Order text: 16m guide trough **with** glide bar (16 x 2m sections) 975.31.SL
- Installation set complete (quantity: guide trough sets + 1)
- Order text: 17 installation sets 975.50.500
- Option: for an additional noise dampening with silencer profile, please add Index A 975.30.SLA

---

**Principle sketch:** number of installation sets to be installed = number of trough sections + 1

**Installation set heavy duty:**

- Trough set heavy duty: a. Trough side parts, aluminium, 2m  b. Glide bar, plastic, 2m  
- Glide strips, plastic, 2m (without glide strips upon request)  
- Optional: rubber silencer profile  
- Installation set heavy duty: a. Bottom clamp, aluminium  b. C-profile, galvanised steel, length  

---

**Installation set heavy duty:**

- a. Installation set  b. Glide bar  c. C-profile  
- Glide nut M8  
- Allen wrench M8 x 25
Reduce energy consumption by up to 57% - with profile-rol e-chain®

Advantages of P4:
- Reduce energy consumption by up to 57% - P4 profile-rol e-chain system®
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- Identical pitch of the e-chain® link with or without roller
- Extremely quiet - considerable reduction of operating noise
- Autoglide crossbars for safe guidance
- P4 modular system with interior separation for the system E4.1

When to use another e-chain® series:
- For very high fill weights for long travels
  - E4/4 HD heavy-duty, page 1092
- When you want a strong rol e-chain® requiring 75% less drive power
  - E4/4 rol e-chain®, page 1142
- When you want a self-guiding e-chain system® without any guide troughs
  - Autoglide, page 1170
System P4 | Introduction | Advantages

Reduce energy consumption by up to 57% - P4 system, profile rol e-chain®

System P4 - safe, low-noise, abrasion-resistant energy supply system for long travels up to 800m and more. With the low-maintenance igus® system P4, a secure energy supply system can be implemented on long travels up to 800m for cranes or conveyor systems. The upper run and lower run roll staggered on each other. In this way the tribo-optimised plastic rollers don’t impact on each other, but roll on a continuous, wide rolling surface. The P4 profile-rol e-chain® is safely guided by the comb-shaped autoglide crossbars and the special trough system. Systems of this type should be designed in conjunction with our engineering team.

• Long travels up to 800m and more, high fill weights up to 30kg/m
• For very long travels and high travel speeds up to 10m/s
• Identical pitch of the e-chain® link with or without roller
• Extremely quiet - considerable reduction of operating noise
• Integrated captive roller in the side part
• Autoglide crossbars for a safe guidance
• Large modular P4 system with interior separation for the system E4

Typical industries and applications
• Crane equipment • Automated storage and retrieval systems • Plant construction • Gantry robots • Material handling

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Energy efficient e-chains® and cables reduce energy consumption by 57%
Thanks to the right materials and the ingenious design, the energy consumption of machines and equipment can be significantly reduced, as shown by tests and sample calculations carried out in the igus® test laboratory for e-chains® and cables. The latest e-chains® and chainflex® cables from igus® reduce the drive power needed and increase the service life of the application.

Energy efficient e-chains® and cables reduce energy consumption by 57%

Calculation examples online
www.igus.co.uk/energy_efficiency

System P4 | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height $H$ [mm]</th>
<th>Inner width $B_i$ [mm]</th>
<th>Outer width $B_a$ [mm]</th>
<th>Outer height $h_a$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Travel [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.32</td>
<td>32</td>
<td>100 - 250</td>
<td>132 - 282</td>
<td>54</td>
<td>150 - 250</td>
<td>500</td>
<td>1118</td>
</tr>
<tr>
<td>P4.42</td>
<td>42</td>
<td>100 - 200</td>
<td>154 - 254</td>
<td>64</td>
<td>100 - 350</td>
<td>600</td>
<td>1124</td>
</tr>
<tr>
<td>P4.56</td>
<td>56</td>
<td>187 - 400</td>
<td>257 - 470</td>
<td>84</td>
<td>250 - 350</td>
<td>800</td>
<td>1130</td>
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<td>P4.80</td>
<td>80</td>
<td>187 - 400</td>
<td>263 - 476</td>
<td>108</td>
<td>250 - 350</td>
<td>800</td>
<td>1136</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

IF product design award
2007 for igus® System P4

Find a video online
www.igus.co.uk/P4_Film

Explore the benefits ▶ www.igus.co.uk/best/P4

1114 Explore the benefits ▶ www.igus.co.uk/best/P4

1115
System P4 | Features | Accessories

Optimised interior separation products, cables last up to 4 times longer

Robust igus® pivoting mounting brackets

Offset operation of upper and lower run, resulting in continuous rolling surface

- Extension link for heavy fill weights
- Available in 2 inner heights (56, 80mm)
- 50% higher fill weight possible
- High rigidity
- Divides the e-chain® cross section into compartments (electric/hydraulic)

- Tribo-optimised plastic rollers for all igus® P4 systems
- Wear optimised
- Long service life
- Improved rolling
- Noise-reducing, vibration damping
- Same size of rolling and standard e-chain® links

- Aluminium guide trough system
- Special geometry combined with autoglide-crossbars enables offsetting of the upper and lower run
- Robust mounting bracket for long service life
- Corrosion-resistant

System P4 | Technical data | Order examples

Technical data

- Speed gliding ≤ 10 [m/s]
- Acceleration gliding ≤ 50 [m/s²]
- Material - permitted temperature °C, igumid G -40°C / +120°C
- Flammability class, igumid G VDE 0304 IIC UL94-HB

Order example | Order key

Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:
e-chain® (1.0m) Please indicate e-chain® length or number of links: 1.0m or 11 links P4.56.30.300.0
+ Mounting brackets 1 full set, steel P4.56100.54.VS.E45
Interior separation with 2 separators assembled every 2nd link 2 x 56.1.1
Order text: 1 m P4.56.30.300.0 + P4.56100.54.VS.E45 + 2 x 56.1.1

Order key

P4.56.30.300.0

- Default colour black
- Bend radius R
- Width index
- Inner height
- Series / Type

Less friction, twice the service life - the new generation P4.1 system

Twice the service life due to tribo-optimised iglidur® bearings
- Predictive maintenance with optional intelligent service life monitoring
- Travel distance up to 800m and speed higher than 5m/s

More information ► www.igus.co.uk/P4-1

Targeted maintenance and smart monitoring with P4.1 - New

- Online status and service life monitoring worldwide with the optional ECI® “smart wear measurement”
- Targeted planning of maintenance and servicing
- Optional module, can also be retrofitted
- Combination of igus® lab data and anonymised customer data
- Use of advanced machine learning strategies

More information ► www.igus.co.uk/P4-1

System P4 | profile-rol e-chain® Tests

- First rol e-chain® from 1999, lab test v = 2.0m/s
- Outdoor test, v = 6.0m/s with measurement at 1m intervals
System P4 | Series P4.32 | Product range
Profile-rol e-chain® with comb style autoglide crossbars

**e-chains® | Series P4.32 | Crossbar every link** (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R Available bend radii</th>
<th>P4.32</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4.32.10.0</td>
<td>100</td>
<td>132</td>
<td>075°</td>
<td>100°</td>
</tr>
<tr>
<td>P4.32.15.0</td>
<td>150</td>
<td>182</td>
<td>075°</td>
<td>100°</td>
</tr>
<tr>
<td>P4.32.20.0</td>
<td>200</td>
<td>232</td>
<td>075°</td>
<td>100°</td>
</tr>
<tr>
<td>P4.32.25.0</td>
<td>250</td>
<td>282</td>
<td>075°</td>
<td>100°</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: P4.32.15.150.0

---

**System P4 mechanism**
Offset operation of upper and lower run, resulting in continuous rolling surface

**System P4 - aluminium guide trough system**
- Special geometry combined with autoglide crossbars
- Enables offsetting of the upper and lower runs
- Robust mounting bracket for long service life
- Aluminium trough segments, corrosion-resistant

More information ▶ Page 1122

---

More information ▶ www.igus.co.uk/P4.32
Mounting brackets pivoting | Recommended for rolling applications on long travels

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set for</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>fixed end / moving end</td>
<td>P4.32100.5,VS.E45</td>
<td>90</td>
<td>100</td>
</tr>
<tr>
<td>15</td>
<td>P4.32100.5,15,VS.E45</td>
<td>130</td>
<td>150</td>
</tr>
<tr>
<td>20</td>
<td>P4.32100.5,20,VS.E45</td>
<td>180</td>
<td>200</td>
</tr>
<tr>
<td>25</td>
<td>P4.32100.5,25,VS.E45</td>
<td>230</td>
<td>250</td>
</tr>
</tbody>
</table>

Notes: 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 ensures that rollers move over a plain surface at the fixed end. There is a fixed end module integrated that can be clamped directly into the trough without drilling any holes. No additional holes have to be drilled.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300.

System P4 | Series P4.32 | Accessories

Steel mounting brackets | Pivoting

Fixed end
Plastic
P4.32100.5,VS.E45

Moving end
Steel
P4.32100.4,VS.E45
Aluminium SuperTrough | P4.32 | Accessories New
Part No. P972.30.SL | P975.31.Bi.SL | Trough height: 101mm

Part No. installation set with C-profile

<table>
<thead>
<tr>
<th>Width B_{Ri}</th>
<th>Part No. index</th>
<th>Part No. installation set</th>
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<tr>
<td>.10</td>
<td>148</td>
<td>971.50.250</td>
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<tr>
<td>.15</td>
<td>196</td>
<td>971.50.300</td>
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<tr>
<td>.20</td>
<td>248</td>
<td>971.50.350</td>
</tr>
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<td>.25</td>
<td>298</td>
<td>971.50.400</td>
</tr>
</tbody>
</table>

\[ B_{Ri} = B_{Ra} + 16 \]
\[ B_4 + 6 \]
\[ B_4 \]

\[ B_{Ri} = B_{Ra} + B_{Bi} \]
\[ H_{Ri} = 2 \times H_{Ra} \]
\[ H_{Ri} = 2 \times H_{Ra} \]
\[ B_{Ri} + 6 \]

Trough set: Trough side parts, aluminium, 2m, Glide bar, plastic, 2m, Glide strips, plastic, 2m (without glide strips upon request)

Installation set: Bottom clamp, aluminium, C-profile, galvanised steel, length

Table: Allen wrench M6 x 20, Glide nut M6

System P4 | Application example

Trough side part, incl. glide strips, without glide bar
Order text: 16m guide trough without glide bar (16 x 2m sections) P972.30.SL

Trough side part, incl. glide strips, with glide bar
Order text: 16m guide trough with glide bar (16 x 2m sections) P972.31.Bi.SL

Installation set complete (quantity: guide trough sets + 1)
Order text: 17 installation sets P972.30.SL.A

Option: for an additional noise dampening with silencer profile, please add Index A

Principle sketch: number of installation sets to be installed = number of trough sections + 1

Trough set
Installation set
Glide bar
C-profile

\[ E_{ch} \]
\[ e_{ch} \]
\[ e_{ch} \]

More information ► www.igus.co.uk/P4.32

www.igus.co.uk/P4
System P4 | Series P4.42 | Product range
Profile-rol e-chain® with comb style autoglide crossbars

System P4 | Series P4.42 | Installation dimensions

System P4 mechanism
Offset operation of upper and lower run, resulting in continuous rolling surface

Rolling applications | Long travels up to max. 600m | Fill weight 7.0kg/m

Lk = S/2 + K2
Moving end

Fixed end

Guide trough with glide bar

Guide trough without glide bar

Total length of guide trough

Note: We recommend the project planning of such a system to be carried out by igus®.
In case of travels under 10m we recommend an unsupported e-chain®.

R
100
125
150
200
250
300
350

H2
140
140
140
140
140
140
140

D2
520
785
940
1,280
1,620
1,960
2,265

K2
900
1,206
1,407
1,876
2,345
2,814
3,216

ACL
195
335
470
765
1,045
1,330
1,615

Part No. | Bi | Ba | Available bend radii | P4.42
--- | --- | --- | --- | ---
P4.42.10./R.0 | 100 | 154 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 3.95
P4.42.15./R.0 | 150 | 202 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 4.22
P4.42.20./R.0 | 200 | 254 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 4.47

Complete Part No. with required radius (R). Example: P4.42.15.150.0

Part No. | e-chain® | Series P4.42 | Crossbars every link (crossbars removable along the inner and outer radius)
--- | --- | --- | ---
P4.42.10./R.0 | 100 | 154 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 3.95
P4.42.15./R.0 | 150 | 202 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 4.22
P4.42.20./R.0 | 200 | 254 | 100 | 125 | 150 | 200 | 250 | 300 | 350 | 4.47

More information ➤ www.igus.co.uk/P4.42

System P4 - aluminium guide trough system
- Special geometry combined with autoglide crossbars enables offsetting of the upper and lower runs
- Robust mounting bracket for long service life
- Aluminium trough segments, corrosion-resistant

More information ➤ Page 1129
System P4 | Series P4.42 | Accessories

Steel mounting brackets | Pivoting

---

**Mounting brackets pivoting | Recommended for rolling applications on long travels**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set for fixed end / moving end</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>P4.42100.54.10.VS.E45</td>
<td>80</td>
<td>100</td>
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<tr>
<td>15.</td>
<td>P4.42100.54.15.VS.E45</td>
<td>130</td>
<td>150</td>
</tr>
<tr>
<td>20.</td>
<td>P4.42100.54.20.VS.E45</td>
<td>180</td>
<td>200</td>
</tr>
</tbody>
</table>

Note: 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 ensures that the rollers move over a plain surface at the fixed end. There is a fixed end module integrated that can be clamped directly into the trough without drilling any holes. No additional holes have to be drilled.

---

**Strain relief** e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300
**More interior separation options**

**Lean separators** New

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Notch locking separator for increased holding force

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

No lateral gap to side links necessary. As standard separators are fitted every 2nd e-chain® link!
**System P4 | Series P4.56 | Product range**

Profile-rol e-chains® with comb style autoglide crossbars

**e-chains® | Series P4.56 | Crossbars every link (crossbars removable along the inner and outer radius)**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>$B_i$</th>
<th>$B_a$</th>
<th>$R$ Available bend radii</th>
<th>P4.56</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains®</td>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
<td>(mm)</td>
</tr>
<tr>
<td>P4.56.18,R.0</td>
<td>167</td>
<td>257</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>P4.56.20,R.0</td>
<td>200</td>
<td>270</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>P4.56.25,R.0</td>
<td>250</td>
<td>320</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>P4.56.30,R.0</td>
<td>300</td>
<td>370</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>P4.56.35,R.0</td>
<td>350</td>
<td>420</td>
<td>150</td>
<td>200</td>
</tr>
<tr>
<td>P4.56.40,R.0</td>
<td>400</td>
<td>470</td>
<td>150</td>
<td>200</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius ($R$). Example: **P4.56.20,250.0**

**System P4 | Series P4.56 | Installation dimensions**

**Rolling applications | Long travels up to max. 800m | Fill weight 13kg/m**

**System P4 mechanism**
Offset operation of upper and lower run, resulting in continuous rolling surface

**Extension link for heavy fill weights**
- 50% higher fill weight possible
- High rigidity
- Divides the e-chain® cross section into compartments (electric/hydraulic)
- 2 inner heights (56, 80mm) available upon request

More information ➤ www.igus.co.uk/P4

1130 More information ➤ www.igus.co.uk/P4.56

1131 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/P4
System P4 | Series P4.56 | Accessories

Steel mounting brackets | Pivoting

Mounting brackets pivoting | Recommended for rolling applications on long travels

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No. full set for fixed end / moving end</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>P4.56100.5.VS.E45</td>
<td>160</td>
<td>180</td>
</tr>
<tr>
<td>20</td>
<td>P4.56100.5.VS.E45</td>
<td>180</td>
<td>200</td>
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<tr>
<td>25</td>
<td>P4.56100.5.VS.E45</td>
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<td>30</td>
<td>P4.56100.5.VS.E45</td>
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<td>300</td>
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<tr>
<td>35</td>
<td>P4.56100.5.VS.E45</td>
<td>330</td>
<td>350</td>
</tr>
<tr>
<td>40</td>
<td>P4.56100.5.VS.E45</td>
<td>380</td>
<td>400</td>
</tr>
</tbody>
</table>

Note: 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 ensures that the rollers move over a plain surface at the fixed end. There is a fixed end module integrated that can be clamped directly into the trough without drilling any holes. No additional holes have to be drilled.

Strain relief e.g. clamps, tie-wrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ▶ From page 1300

System P4 | Series P4.56 | Accessories

Interior separation | Increase cable service life

More interior separation options ▶ next page

Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 16mm
As standard separators are fitted every 2nd e-chain® link!

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

<table>
<thead>
<tr>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
<th>X [mm]</th>
<th>unassembled</th>
<th>assembled</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

More information ▶ www.igus.co.uk/P4.56

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/P4
**System P4 | Series P4.56 | Accessories**

**Interior separation | To allow faster filling**

---

**Lean separators New**

New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

---

**Notch locking separator for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

---

**More interior separation options**

---

**Aluminium SuperTrough | P4.56 | Accessories**

Part No. P974.30.SL | P974.31.Bi.SL | Trough height: 183mm

---

**Part No. installation set with C-profile**

<table>
<thead>
<tr>
<th>Width B Bi</th>
<th>Part No.</th>
<th>Installation set</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>282.5</td>
<td>974.50.425</td>
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<tr>
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</tr>
<tr>
<td>40</td>
<td>495.5</td>
<td>974.50.625</td>
</tr>
</tbody>
</table>

---

**Order example: length of travel 30m - centre fixed for series P4.56.20,200.0 with B Bi = 295.5**

**Trough side part, incl. glide strips, without glide bar**

**Order text:** 16m guide trough without glide bar (16 x 2m sections) P974.30.SL

**Trough side part, incl. glide strips, with glide bar**

**Order text:** 16m guide trough with glide bar (16 x 2m sections) P974.31.Bi.SL

**Installation set complete**

**Order text:** 17 installation sets 974.50.425

**Option:** for an additional noise dampening with silencer profile, please add index A P974.30.SLA

---

**Principle sketch: number of installation sets to be installed = number of trough sections + 1**

---

More information: [www.igus.co.uk/P4.56](http://www.igus.co.uk/P4.56)

3D CAD, configurators, service life calculation and more: [www.igus.co.uk/P4](http://www.igus.co.uk/P4)
**System P4 | Series P4.80 | Product range**

Profile-rol e-chain® with comb style autoglide crossbars

**e-chain® | Series P4.80 | Crossbars every link**

(removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>P4.80</th>
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<tr>
<td>P4.80, 18, R, 0, 187</td>
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*Radius available upon request. *Radius available upon request, please consult igus® for delivery time.

Complete Part No. with required radius (R). Example: P4.80, 20, 2500

**Extension link for heavy fill weights**

- 50% higher fill weight possible
- High rigidity
- Divides the e-chain® cross section into compartments (electric/hydraulic)
- 2 inner heights (56, 80mm) available upon request

More information ➤ www.igus.co.uk/P4

---

**System P4 | Series P4.80 | Installation dimensions**

**System P4 mechanism**

Offset operation of upper and lower run, resulting in continuous rolling surface

**Rolling applications | Long travels up to max. 800m and more | Fill weight 30kg/m**

**System P4 - aluminium guide trough system**

- Special geometry combined with autoglide crossbars enables offsetting of the upper and lower runs
- Robust mounting bracket for long service life
- Aluminium trough segments, corrosion-resistant

More information ➤ Page 1141

---

**Notes:**

- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels under 10m we recommend an unsupported e-chain®.

**R**

- 150° | 200° | 250 | 300 | 350 | 400° | 450° | 500

H₂

- 180 | 180 | 180 | 180 | 180 | 180 | 180 | 180

D₂

- 955 | 1,310 | 1,610 | 1,974 | 2,060 | 2,625 | 2,910 | 3,275

K₂

- 900 | 1,400 | 1,800 | 2,300 | 2,700 | 3,200 | 3,600 | 4,100

ΔCL

- ** | ** | 600 | 800 | 970 | 1,160 | ** | 1,530

*Radius available upon request. *Radius available upon request, please consult igus® for delivery time. **Values upon request

More information ➤ www.igus.co.uk/P4
System P4 | Series P4.80 | Accessories
Steel mounting brackets | Pivoting

Mounting brackets pivoting | Recommended for rolling applications on long travels

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. full set for</th>
<th>A [mm]</th>
<th>B [mm]</th>
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<tr>
<td>fixed end / moving end</td>
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<tr>
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<td>180</td>
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<td>380</td>
<td>400</td>
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</tbody>
</table>

Note: 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 ensures that the rollers move over a plain surface at the fixed end. There is a fixed end module integrated that can be clamped directly into the trough without drilling any holes. No additional holes have to be drilled.

Strain relief e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

System P4 | Series P4.80 | Accessories
Interior separation | Increase cable service life

More interior separation options ► next page

Standard - for any application
Separator with a wide base for maximum holding force in the e-chain®.

For even faster installation
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

For small cables
Separator with a narrow base for a large number of small cables side by side. Saves space in the e-chain®.

For side-mounted applications
Asymmetrical separator, for defined gap distance. No additional spacers required.

Locks securely in preset increments
Notch separator for exact positioning in e-chains®. Recommended for side-mounted applications.

Horizontal separation
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves

<table>
<thead>
<tr>
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<th>Assembled</th>
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<tr>
<td>125</td>
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<td>521.125</td>
</tr>
</tbody>
</table>

Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 16mm
As standard separators are fitted every 2nd e-chain® link!
System P4 | Series P4.80 | Accessories

Interior separation | To allow faster filling

Note: Please be aware of the minimum lateral gap to the side links! e-chain®: 16mm
As standard separators are fitted every 2nd e-chain® link!

Lean separators New
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

Lean separator design - several layers of cables fitted quickly, save up to 50%* assembly time
("Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory")

More interior separation options

Notch locking separator for increased holding force
Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

Aluminium SuperTrough | P4.80 | Accessories New
Part No. P975.30.SL | P975.31.Bi.SL | Trough height: 236mm

Order example: length of travel 30m - centre fixed for series P4.56.20.200.0 with $B_{in} = 295.5$
Trough side part, incl. glide bars, plastic, 2m. Glide strips, plastic, 2m (without glide strips upon request). Optional: rubber silencer profile
Installation set: Bottom clamp, aluminium. C-profile, galvanised steel, length
Table: Allen wrench M8 x 25. Glide bar M8

Part No. installation set with C-profile

<table>
<thead>
<tr>
<th>Width $B_{in}$</th>
<th>Part No.</th>
<th>index (mm)</th>
<th>Installation set</th>
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<tbody>
<tr>
<td>.18</td>
<td>282.5</td>
<td>975.50.425</td>
<td></td>
</tr>
<tr>
<td>.20</td>
<td>295.5</td>
<td>975.50.425</td>
<td></td>
</tr>
<tr>
<td>.25</td>
<td>345.5</td>
<td>975.50.475</td>
<td></td>
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<tr>
<td>.30</td>
<td>395.5</td>
<td>975.50.525</td>
<td></td>
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<tr>
<td>.35</td>
<td>445.5</td>
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<td></td>
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<tr>
<td>.40</td>
<td>495.5</td>
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Part No. installation set

<table>
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<td>Glide bar</td>
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<td>C-profile</td>
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<td>P975.30.SLA</td>
<td>Number of installation sets</td>
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<tr>
<td>P975.30.SLA</td>
<td>Number of trough sections</td>
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</tbody>
</table>

Principle sketch: number of installation sets to be installed = number of trough sections + 1
E4/4 rol e-chain®
Long travels up to 800m, rolling instead of gliding

Advantages E4/4 rol e-chain®:
- Special solution for long travels
- 75% less drive power, rolling
- Reduction of drive power needed to move the e-chain®
- Long travels up to 800m with E4/4 rol e-chain®
- Speeds up to 6m/s possible
- Various roller types for optimum application adaption
- Can be used in dirty environments

When to use another e-chain® series:
- For very high fill weights for long travels
  - E4/4HD heavy-duty, page 1092
- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  - P4 system, page 1112
- When you want a self-guiding e-chain system® without any guide troughs
  - autoglide, page 1170
**Long travels up to 800m, rolling instead of gliding - E4/4 rol e-chain®**

Conventional design e-chains® are used gliding for long travels. The technical limits of this operating mode were the reason for development of the igus® E4/4 rol-e chain®. The demands have increased steadily in recent years. Travels of 800 metres now pose new challenges in cranes along with high travel speeds and low noise with high cable loads.

Please contact us if you have decided to use this product. We’ll assist you in the project planning!

- **High push/pull forces:**
  - large pin/bore connection

- **Fast filling:**
  - lids open on both sides, flip open along the outer radius

- **Long service life:**
  - high-strength rollers, quiet design, stainless steel ball bearings

- **High strength:**
  - undercut design for torsional rigidity

- **Universal:**
  - KMA with attachment from any side

**Typical industries and applications**

- Crane facilities
- Bulk handling/material handling
- Mining/construction machinery
- Displacement systems

**Available from stock. Ready to ship in 24 - 48hrs.***

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

---

**Selection table**

<table>
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<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Travel</th>
<th>Page</th>
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<td>32</td>
<td>50 - 400</td>
<td>74 - 424</td>
<td>54</td>
<td>125 - 300**</td>
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<td>42</td>
<td>50 - 400</td>
<td>77 - 427</td>
<td>64</td>
<td>150 - 350**</td>
<td>330</td>
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<td>200 - 400**</td>
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<td>250 - 500**</td>
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<td>300 - 500</td>
<td>600</td>
<td>1156</td>
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</table>

**Additional options**

- e-chains® with crossbars every link
  - for particularly demanding applications

- e-tubes
  - fully enclosed, excellent cable protection

- Heavy-duty e-chain® with crossbars every link
  - for very long travels with very heavy fill weights

---

**Note:** Smaller bend radii (only for e-chains®) available upon request. Please consult igus® for delivery time.
E4/4 rol e-chain® | Technical data | Order examples

Technical data

- Speed rolling: \( \leq 10 \text{ [m/s]} \)
- Acceleration rolling: \( \leq 50 \text{ [m/s²]} \)
- Material - permitted temperature °C: igumid G -40°C / +120°C
- Flammability class: igumid G VDE 0304 IIC UL94-HB

Order example | Order key

Order example for complete e-chain® (3.0m), colour black, with mounting brackets and interior separation:

- **e-chain®** (1.0m) Please indicate e-chain® length or number of links: 3.0m or 54 links 2828R.30.300.0
- + Mounting brackets 1 full set, KMA pivoting 28280.30.12
- Interior separation with 2 separators assembled every 2nd link 2 x 32.1.1

Order text:

\[ 3 \text{ m } 2828R.30.300.0 + 28280.30.12 + 2 \times 32.1.1 \]

Order key 2828R.30.300.0

P4 profile-rol e-chain® - reduce energy consumption by 57%

- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- autoglide crossbars for safe guidance

More information ➤ From page 1112

autoglide - self-guiding e-chain systems®

- Self-guiding e-chains® without the need for guide troughs, available in 4 versions
- Travels up to 80m and travel speeds up to 2.5m/s
- Quick installation for long travels
- Small width, quiet operation, cost-effective

More information ➤ From page 1170

1146 More information ➤ www.igus.co.uk/role 1147
### e-chains® | Series 2828R | Crossbars every link (crossbars removable along the inner and outer radius)

**e-tubes** | **Series 7728R** | **Fully enclosed** (links operable along the outer radius, from one side)

<table>
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<th>Part No.</th>
<th>e-chains® / e-tubes</th>
<th>B1</th>
<th>B3</th>
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<th>7728R</th>
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### Installation dimensions

**Rolling applications | Long travels up to max. 250m | Fill weight 6.0kg/m**

- **Lk = S/2 + K2**<br>**Moving end**
- **Guides trough with glide bar**
- **Fixed end**
- **Guides trough without glide bar**

**Note:** We recommend the project planning of such a system to be carried out by igus®. In case of travels under 10m we recommend an unsupported e-chain®.

- **R**
  - **R**
  - **R**
  - **R**
  - **R**
  - **R**

**Available bend radii**

- **R**
  - **R**
  - **R**
  - **R**
  - **R**

**Radius not available for e-tubes. Smaller bend radii (only for e-chains®) available upon request. Please consult igus® for delivery time.**

### Accessories | More information ➤ www.igus.co.uk/2828R ➤ www.igus.co.uk/7728R

- Optimised, cable-friendly interior separation
- Pivotable KMA mounting bracket with attachment from any side
- Aluminium SuperTough, basic version

**3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/role**
Roll e-chains® | 3838R-7838R | Product range
Rolling instead of gliding, long travels up to 330m

**e-chains®** | Series 3838R | Crossbars every link (crossbars removable along the inner and outer radius) | e-tubes | Series 7838R | Fully enclosed (kios operable along the outer radius, from one side)

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<th>Part No.</th>
<th>e-chains® / e-tubes</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
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**Part No.**
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- 07, R, 0
- 087, R, 0
- 097, R, 0
- 10, R, 0
- 100, R, 0
- 108, R, 0
- 112, R, 0
- 125, R, 0
- 137, R, 0
- 150, R, 0
- 162, R, 0
- 168, R, 0
- 175, R, 0
- 187, R, 0
- 200, R, 0

**Available bend radii**
- R [mm]: 150* | 170* | 200 | 215 | 250 | 300 | 350
- Complete Part No. with required radius (R). Example: 3838R, 30, 300

**Notes:** We recommend the project planning of such a system to be carried out by igus®.
- In case of travels under 10m we recommend an unsupported e-chain®.

**Rolling applications | Long travels up to max. 330m | Fill weight 7.0kg/m**

**Lk = S/2 + K**
- Moving end
- Guide trough with glide bar
- Guide trough without glide bar

**Total length of guide trough**

**Accessories | More information**
- 3D CAD, configurators, service life calculation and more
- www.igus.co.uk/role
- www.igus.co.uk/3838R
- www.igus.co.uk/7838R

**More information**
- www.igus.co.uk/3838R
- www.igus.co.uk/7838R

1150
**e-chains®** | **Series 4040** | **Crossbars every link** (crossbars removable along the inner and outer radius)

**e-tubes** | **Series 8840** | **Fully enclosed** (lids openable along the outer radius, from one side)

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**Notes:**
- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels under 10m we recommend an unsupported e-chain®.

**Construction:**
- Rolling instead of gliding, long travels up to 500m
- Smaller bend radii (only for e-chains)
- Radius not available for e-tubes
- Lid removable only, no hinged option

**Accessories | More information**
- www.igus.co.uk/4040R
- www.igus.co.uk/8840R

- Optimised, cable-friendly interior separation
- Pivoting KMA mounting bracket with attachment from any side
- Extension links - for extremely wide e-chain® up to 3.0m
- Aluminium SuperTough, basic version

**3D CAD, configurators, service life calculation and more**
- www.igus.co.uk/role
**Rol e-chains® | 4040RHD | Product range**

Heavy-duty - rolling instead of gliding, long travels up to 600m

---

**e-chains® | Series 4040RHD | Crossbars every link** (crossbars removable along the inner and outer radius)

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**Part No. | Bi | Ba | 4040RHD |
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</tbody>
</table>

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**Notes:** We recommend the project planning of such a system to be carried out by igus®. In case of travels under 10m we recommend an unsupported e-chain®.

**Accessories | More information ★ www.igus.co.uk/4040RHD**

- Optimised, cable-friendly interior separation
- Steel mounting brackets, pivoting, tough and electrically conductive
- Aluminium SuperTough, Heavy-duty Version
### e-chains® Series 5050R

**Available bend radii**

| Available bend radii | Example: 5050R, 30, 300, 0 |

**Part No.**

- 5050R, 05. R0 50 100
- 5050R, 06. R0 65 115
- 9850R, 07. R0 75 125
- 9850R, 08. R0 87 137
- 9850R, 10. R0 100 150
- 9850R, 11. R0 112 163
- 9850R, 12. R0 125 175
- 9850R, 13. R0 137 188
- 9850R, 15. R0 150 200
- 9850R, 16. R0 162 213
- 9850R, 17. R0 175 225
- 9850R, 18. R0 187 238
- 9850R, 20. R0 200 250
- 9850R, 21. R0 212 263
- 9850R, 22. R0 225 275
- 9850R, 23. R0 237 288
- 9850R, 25. R0 250 300
- 9850R, 26. R0 262 313
- 9850R, 27. R0 275 325
- 9850R, 28. R0 287 338
- 9850R, 30. R0 300 350

### 9850R

**Part No.**

- 9850R, 31. R0 312 360
- 9850R, 32. R0 325 375
- 9850R, 33. R0 337 388
- 9850R, 34. R0 347 403
- 9850R, 35. R0 350 400
- 9850R, 36. R0 362 413
- 9850R, 37. R0 375 425
- 9850R, 38. R0 387 438
- 9850R, 40. R0 412 463
- 9850R, 41. R0 425 475
- 9850R, 42. R0 437 488
- 9850R, 43. R0 450 500
- 9850R, 44. R0 462 513
- 9850R, 45. R0 475 525
- 9850R, 46. R0 487 538
- 9850R, 47. R0 500 550
- 9850R, 48. R0 512 563
- 9850R, 49. R0 525 575
- 9850R, 50. R0 537 588
- 9850R, 51. R0 550 600
- 9850R, 52. R0 562 613
- 9850R, 53. R0 575 613
- 9850R, 54. R0 587 613
- 9850R, 55. R0 600 650

### Notes:

- *Radius not available for e-tubes.*
- Smaller bend radii (only for e-chains) are available upon request. Please consult igus® for delivery time.

### Rolling applications

- Long travels up to 600m
- Fill weight 25kg/m

### Installation dimensions

- **Inner height** [mm] 80
- **Pitch** [mm/in] 91
- **Links/m** 11

### Accessories

- More information: [www.igus.co.uk/5050R](http://www.igus.co.uk/5050R) | [www.igus.co.uk/9850R](http://www.igus.co.uk/9850R)

---

**Optimised, cable-friendly interior separation**

**Pivoting KMA mounting bracket with attachment from any side**

**Extension links - for extremely wide e-chains® up to 3.0m**

**Aluminium SuperTough, basic version**

---

**3D CAD, configurators, service life calculation and more**

1156 | 1157

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1156 | More information: [www.igus.co.uk/5050R](http://www.igus.co.uk/5050R) | [www.igus.co.uk/9850R](http://www.igus.co.uk/9850R)

---

1157 | 3D CAD, configurators, service life calculation and more: [www.igus.co.uk/role](http://www.igus.co.uk/role)
**e-chains® | Series 5050RHD | Crossbars every link**
(crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>5050RHD</th>
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<td>75</td>
<td>135</td>
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**Part No. | Bi [mm] | Ba [mm] | 5050RHD |
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**Notes:**
- We recommend the project planning of such a system to be carried out by igus®.
- In case of travels under 10m we recommend an unsupported e-chain®.

**Available bend radii**

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<th>R [mm]</th>
<th>250*</th>
<th>300</th>
<th>350</th>
<th>400</th>
<th>500</th>
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E2/000 rol e-chain®

For long travels up to 150m, energy efficient and cost-effective

Advantages E2/000 rol e-chain®:
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Low-noise operation as the roller link has the same pitch as the standard link
- Max. rolling speed up to 4 m/s
- Available in 2 sizes
- Available as cost-effective ready-to-fit harness system
- Many accessories available
- Construction kit solution with guidelite-guiding trough for cost-effective and simple travels up to 150m

When to use another e-chain® series:
- For very high fill weights for long travels
  - E4/4HD heavy-duty, page 1092
- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  - P4 system, page 1112
- When you want a self-guiding e-chain system® without any guide troughs
  - autoglide, page 1170
E2/000 rol e-chain® | Introduction | Advantages

Long travels up to 150m, energy-efficient and cost-effective - E2/000 rol e-chain®

The igus® rol e-chain® of the E2/000 series enables very cost-effective long travels up to 150m. As a result, the drive power needed is reduced by up to 75% and the service life of the e-chain® is increased. The rol e-chain® of the E2/000 series is the perfect solution for long travels in simple environments, e.g. in greenhouses, etc.

- Economic, long travel up to 150m
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Low-noise operation as the roller e-chain® link has the same pitch as the standard e-chain® link
- Max. rolling speed up to 4m/s
- Available in 2 sizes
- Available as cost-effective ready-to-fit harnessed system
- Construction kit solution with guidelite guide trough for cost-effective and simple travels up to 150m

Typical industries and applications
- Greenhouses
- Crane equipment
- Bulk-handling/material handling equipment
- Traversing systems
- Travel distances up to 150m
- Applications with low cycle numbers

E2/000 rol e-chains® | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>Outer width</th>
<th>Outer height</th>
<th>Bend radius</th>
<th>Travel</th>
<th>Page</th>
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<td>35</td>
<td>50 - 175</td>
<td>66 - 194</td>
<td>50</td>
<td>150</td>
<td>150</td>
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<td>3500R</td>
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<td>50 - 250</td>
<td>70 - 270</td>
<td>64</td>
<td>125 - 200</td>
<td>150</td>
<td>1168</td>
</tr>
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</table>

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Even more cost-effective: E2/000 rol e-chain® with guidelite guide trough as a construction kit solution
- Cost-effective long travels up to 150m
- Construction kit system for long travels with low cycle duty
- Lightweight, cost-effective and corrosion-resistant

More information ➤ www.igus.co.uk/guidelite

More information ➤ www.igus.co.uk/E2000R
### Technical data

<table>
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<th>Parameter</th>
<th>Value</th>
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<tr>
<td>Acceleration rolling</td>
<td>≤ 50 [m/s²]</td>
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<tr>
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<td>R</td>
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<tr>
<td>Width index</td>
<td></td>
</tr>
<tr>
<td>Series / Type</td>
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</tr>
<tr>
<td>Material - permitted temperature °C, igumid G</td>
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<td>Flammability class, igumid G</td>
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<td>VDE 0304 IIC UL94-HB</td>
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### Order example | Order key

**Order example for complete e-chain® (1.0m), colour black, with mounting brackets and interior separation:**

<table>
<thead>
<tr>
<th>e-chain® (1.0m)</th>
<th>Please indicate e-chain® length or number of links: 1.0m or 15 links</th>
<th>3500R.100.150.0</th>
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</thead>
<tbody>
<tr>
<td>+ Mounting brackets</td>
<td>1 set, KMA pivoting</td>
<td>34001.100.12.C</td>
</tr>
<tr>
<td>Interior separation</td>
<td>with 2 separators assembled every 2nd link</td>
<td>2 x 45.1.1</td>
</tr>
</tbody>
</table>

Order text: 1 m 3500R.100.150.0 + 34001.100.12.C + 2 x 45.1.1

**Order key**

3500R.100.150.0

- Default colour black
- Bend radius R
- Width index
- Series / Type

---

### Application

**P4 profile-rol e-chain® - reduce energy consumption by 57%**

- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- autoglide crossbars for safe guidance

More information ► From page 1112

**autoglide - self-guiding e-chain systems®**

- Self-guiding e-chain® without the need for guide troughs, available in 4 versions
- Travels up to 80m and travel speeds up to 2.5m/s
- Quick installation for long travels
- Small width, quiet operation, cost-effective

More information ► From page 1170

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More information ► www.igus.co.uk/E2000R

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3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E2000R
e-chain® | Series 2700R | Openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>Ba</th>
<th>R Available bend radii</th>
<th>2700R</th>
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<td>125°</td>
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<td>2700R.06</td>
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<td>100°</td>
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<tr>
<td>2700R.12</td>
<td>141</td>
<td>145</td>
<td>100°</td>
<td>125°</td>
</tr>
<tr>
<td>2700R.15</td>
<td>166</td>
<td>170</td>
<td>100°</td>
<td>125°</td>
</tr>
<tr>
<td>2700R.17</td>
<td>194</td>
<td>198</td>
<td>100°</td>
<td>125°</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

Complete Part No. with required radius (R). Examples: 2700R.100, 150, 200

---

Even more cost-effective: E2/000 rol e-chain® with guidelite guide trough as a construction kit solution

- Cost-effective long travels up to 150m
- Construction kit system for long travels with low cycle duty
- Lightweight, cost-effective and corrosion-resistant

More information ➤ www.igus.co.uk/guidelite

---

E2/000 rol e-chains® | 2700R | Installation dimensions

**E2/000 rol e-chains® mechanism**
The upper run rolls on the lower run of the e-chain®. *Rolling instead of gliding*

![Diagram](image-url)

**Rolling applications | Long travels up to max. 150m | Fill weight 2.5kg/m**

\[ L_K = \frac{S}{2} + K_2 \]

**Note:** We recommend the project planning of such a system to be carried out by igus®.

In case of travels under 10m we recommend an unsupported e-chain®.

<table>
<thead>
<tr>
<th>R</th>
<th>100°</th>
<th>125°</th>
<th>150°</th>
<th>200°</th>
<th>250°</th>
</tr>
</thead>
<tbody>
<tr>
<td>H_2</td>
<td>166</td>
<td>166</td>
<td>166</td>
<td>166</td>
<td>166</td>
</tr>
<tr>
<td>D_2</td>
<td>350</td>
<td>475</td>
<td>500</td>
<td>770</td>
<td>950</td>
</tr>
<tr>
<td>K_2</td>
<td>616</td>
<td>784</td>
<td>896</td>
<td>1,288</td>
<td>1,624</td>
</tr>
<tr>
<td>ACL</td>
<td>144</td>
<td>244</td>
<td>244</td>
<td>464</td>
<td>594</td>
</tr>
</tbody>
</table>

*Radius available upon request. Please consult igus® for delivery time.

---

**Accessories | More information ➤ www.igus.co.uk/2700R**

- Optimised, cable-friendly interior separation
- Pivoting KMA mounting bracket with attachment from any side
- Plastic mounting brackets with many strain relief options
- Steel mounting brackets, tough and electrically conductive
- Aluminium SuperTrough, basic version

---

More information ➤ www.igus.co.uk/2700R
## e-chains® | Series 3500R | Openable along the outer radius, from both sides

<table>
<thead>
<tr>
<th>Part No.</th>
<th>( R )</th>
<th>( S )</th>
<th>( Lk )</th>
<th>( D2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>e-chains(^*)</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
</tr>
<tr>
<td>3500R.050 .R0</td>
<td>50</td>
<td>70</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.075 .R0</td>
<td>75</td>
<td>95</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.100 .R0</td>
<td>100</td>
<td>120</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.115 .R0</td>
<td>115</td>
<td>135</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.125 .R0</td>
<td>125</td>
<td>145</td>
<td>125</td>
<td>200</td>
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<tr>
<td>3500R.150 .R0</td>
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<td>170</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.175 .R0</td>
<td>175</td>
<td>195</td>
<td>125</td>
<td>200</td>
</tr>
<tr>
<td>3500R.200 .R0</td>
<td>200</td>
<td>220</td>
<td>125</td>
<td>200</td>
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<td>3500R.225 .R0</td>
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<tr>
<td>3500R.250 .R0</td>
<td>250</td>
<td>270</td>
<td>125</td>
<td>200</td>
</tr>
</tbody>
</table>

\(^*\)Radius available upon request. Please consult Igus® for delivery time.

Complete Part No. with required radius \( R \). Example: 3500R.100.150.0

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**Even more cost-effective:** E2/000 rol e-chain® with guidelite guide trough as a construction kit solution

- Cost-effective long travels up to 150m
- Construction kit system for long travels with low cycle duty
- Lightweight, cost-effective and corrosion-resistant

**More information** [www.igus.co.uk/guidelite](http://www.igus.co.uk/guidelite)
autoglide
Make savings on long travel distances with self-guiding e-chains®

Advantages autoglide:
- Self-guiding e-chain systems®, without the need for any guide troughs
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Available in 4 versions
- Travels up to 80m and travel speeds up to 2.5m/s
- Cost-effective solution, guide troughs not required
- Small width, quiet operation

When to use another e-chain® series:
- For very high fill weights for long travels
  - E4/4HD heavy-duty, page 1092
- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%
  - P4 system, page 1112
- When you want a strong rol e-chain® requiring 75% less drive power
  - E4/4 rol e-chain®, page 1142
**There are 4 versions of the igus® autoglide system**

**Version 01 - for igus® E4.1 e-chains®**
Special crossbars along the inner radius of the igus® e-chain® fitted with moulded autoglide grooves

**Version 02 - for igus® E2/000 e-chains®**
Special crossbars with moulded autoglide grooves. Openable along the inner radius

**Version 03 - for igus® easy chain® e-chains®**
Combination of the easy to fill easy chain® and moulded autoglide grooves along the inner radius

**Version 04 - for series E2/000 e-chains®**
Special plastic autoglide grooves side-mounted on the e-chain® keep the e-chain® on track

---

**Make savings on long travel distances with self-guiding e-chains® - autoglide**

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 glide bars. In addition the e-chain system® needs guides, in order to prevent sideways movement. In most cases this is ensured by using a guide trough. However, there are applications where a guide trough is not desirable for space reasons, whether this is due to visual or spatial requirements. In order to meet this need, igus® developed the autoglide system in 1995. autoglide is a self-aligning e-chain®, which can dispense with guide troughs for up to 80m travel.

- Travels up to 80m and travel speeds up to 2.5m/s
- Cost-effective solution, guide troughs not required
- Very fast installation for long travel distances, no guide troughs needed!
- Small width, quiet operation

**Typical industries and applications**
- Industrial vehicles
- Long travels with light filling
- Simple outdoor applications

---

**autoglide | Selection table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height $H$ [mm]</th>
<th>Inner width $B_i$ [mm]</th>
<th>Outer width $B_a$ [mm]</th>
<th>Outer height $H_a$ [mm]</th>
<th>Bend radius $R$ [mm]</th>
<th>Travel $S$ [m]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>autoglide version 01 - self-guiding e-chains® for system E4.1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.32AG</td>
<td>32</td>
<td>112 - 262</td>
<td>136 - 286</td>
<td>54</td>
<td>100 - 300</td>
<td>60</td>
<td>1176</td>
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<tr>
<td>E4.42AG</td>
<td>42</td>
<td>112 - 262</td>
<td>139 - 289</td>
<td>64</td>
<td>125 - 350</td>
<td>70</td>
<td>1178</td>
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<tr>
<td>E4.56AG</td>
<td>56</td>
<td>150 - 250</td>
<td>184 - 284</td>
<td>84</td>
<td>150 - 500</td>
<td>80</td>
<td>1180</td>
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<td>autoglide version 02 - self-guiding e-chains® for system E2/000</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2400AG</td>
<td>25</td>
<td>57 - 77</td>
<td>73 - 93</td>
<td>35</td>
<td>075 - 250</td>
<td>40</td>
<td>1184</td>
</tr>
<tr>
<td>2600AG</td>
<td>35</td>
<td>50 - 75</td>
<td>66 - 91</td>
<td>50</td>
<td>075 - 250</td>
<td>60</td>
<td>1186</td>
</tr>
<tr>
<td>3400AG</td>
<td>45</td>
<td>75 - 100</td>
<td>95 - 120</td>
<td>64</td>
<td>100 - 300</td>
<td>70</td>
<td>1188</td>
</tr>
<tr>
<td>autoglide version 03 - easy filling - simply press cables in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3D CAD, configurators, service life calculation and more</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>2400/2500.AG</td>
<td>25</td>
<td>57 - 125</td>
<td>73 - 141</td>
<td>35</td>
<td>055 - 250</td>
<td>20</td>
<td>1196</td>
</tr>
<tr>
<td>2600/2700.AG</td>
<td>35</td>
<td>50 - 250</td>
<td>66 - 194</td>
<td>50</td>
<td>075 - 250</td>
<td>30</td>
<td>1198</td>
</tr>
</tbody>
</table>

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.*
Self-guiding e-chains® for system E4.1 - autoglide version 01

For the larger e-chains® of the E4.1 system, Glide wings and floor guides - simple guide elements for quick installation on the floor are available for the autoglide system version 01. The eccentric guides are fastened to the floor every 2 metres. The glide wing fastened on the moving end keeps the e-chain® securely on track. The autoglide crossbars safely guide the e-chain® and replace the guide trough.

- For the larger E4.1 e-chains®
- Simple guide elements for quick installation
- The autoglide crossbars safely guide the e-chain® replacing the need for a guide trough
- For travels over 10m
- Floor guides can be driven over

Note: Only two glide wings AG.XXX.OF are required for the safe running of the e-chain®. The glide wing is mounted on the outer link of the upper run, which then holds onto the lower run.

Typical industries and applications
- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Find a video online
► www.igus.co.uk/autoglide

Available from stock. Ready to ship in 24 - 48hrs.*
* The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Order example
Order example for complete e-chain® (15.0m), colour black, with mounting brackets and interior separation:
e-chain® (15m) indicate e-chain® length: 15m E4.32.15.150.0.AG.NC
e-chain® + Glide wings Module, containing 3 e-chain® links and 2 glide wings E4.32.15.150.0.AG.OF.NC
+ Floor guides 8 pieces (2 units every 2m from the half of the travel) AG.380.BF
Order text: 15 m E4.32.15.150.0.AG.NC + E4.32.15.150.0.AG.OF.NC + AG.380.BF
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.

Technical data

| Speed gliding | ≤ 2.5 [m/s] |
| Acceleration gliding | ≤ 2.5 [m/s²] |
| Material - permitted temperature °C, igumid G | -40°C / +120°C |
| Flammability class, igumid G | VDE 0304 IIC UL94-HB |

Order key

Order key E4.32.15.150.0.AG.OF.NC

Autoglide with assembled glide wing. Module, containing 3 e-chain® links and 2 glide wings Part No. E4.32.15.150.0.AG.OF.NC

Glide wing Part No. AG.280.OF and floor guide Part No. AG.380.BF as an individual part
Series E4.32AG | Crossbars along the inner radius fitted with moulded autoglide grooves

Crossbars every link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>E4.32AG [kg/m]</th>
<th>Glide wing*</th>
<th>Floor guide*</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.32 12</td>
<td>112</td>
<td>136</td>
<td>100</td>
<td>125</td>
<td>150</td>
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<td>E4.32 12</td>
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<tr>
<td>E4.32 15</td>
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<td>175</td>
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<tr>
<td>E4.32 17</td>
<td>168</td>
<td>191</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
</tr>
<tr>
<td>E4.32 20</td>
<td>200</td>
<td>223</td>
<td>100</td>
<td>125</td>
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<td>175</td>
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<tr>
<td>E4.32 26</td>
<td>262</td>
<td>286</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>175</td>
</tr>
</tbody>
</table>

More widths upon request. Please consult igus® for delivery times. *Part No. of individual part.

Complete Part No. with required radius (R). Example: E4.32.150.0.AG.NC

To receive autoglide e-chains® with pre-fitted glide wings please add index .OF. Example: E4.32.150.0.AG.OF.NC

P4 profile-rol e-chain® - reduce energy consumption by 57%
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- Autoglide crossbars for safe guidance

More information ► From page 1112

More information ► www.igus.co.uk/E4.32AG

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/autoglide

Series E4.32AG | Installation dimensions

Gliding applications | Long travels up to max. 60m | Fill weight* 5.0 - 7.0kg/m
*depends on radius

Notes: We recommend the project planning of such a system to be carried out by igus®.
In case of travels under 10m we recommend an unsupported e-chain®.

Accessories | More information ► www.igus.co.uk/E4.32AG

Optimised, cable-friendly interior separation
Pivoting KMA mounting bracket with attachment from any side

From any side bracket with attachment
Pivoting KMA mounting

More information ► www.igus.co.uk/E4.32AG
Series E4.42AG | Crossbars every link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
<th>E4.42AG [kg/m]</th>
<th>Glide wing*</th>
<th>Floor guide*</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.42.112_R0.AG.NC</td>
<td>112</td>
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<td>125</td>
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<td>175</td>
</tr>
<tr>
<td>E4.42.15_R0.AG.NC</td>
<td>150</td>
<td>176</td>
<td>125</td>
<td>150</td>
<td>160</td>
<td>175</td>
</tr>
<tr>
<td>E4.42.17_R0.AG.NC</td>
<td>168</td>
<td>194</td>
<td>125</td>
<td>150</td>
<td>160</td>
<td>175</td>
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<td>160</td>
<td>175</td>
</tr>
<tr>
<td>E4.42.262_R0.AG.NC</td>
<td>262</td>
<td>289</td>
<td>125</td>
<td>150</td>
<td>160</td>
<td>175</td>
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</tbody>
</table>

More widths upon request. Please consult igus® for delivery time. *Part No. of individual part.

Complete Part No. with required radius (R). Example: E4.42.15.150.0.AG.NC

To receive autoglide e-chains® with pre-fitted glide wings please add index OF. Example: E4.42.15.150.0.AG.OF.NC

P4 profile-roll e-chain® - reduce energy consumption by 57%
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- autoglide crossbars for safe guidance

More information ► From page 1112

More information ► www.igus.co.uk/E4.42AG
Series E4.56AG | Crossbars every link (crossbars removable along the inner and outer radius)

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi (mm)</th>
<th>Ba (mm)</th>
<th>R Available bend radii</th>
<th>E4.56AG</th>
<th>Glide wing*</th>
<th>Floor guide*</th>
</tr>
</thead>
<tbody>
<tr>
<td>E4.56.15</td>
<td>150</td>
<td>184</td>
<td>(150) 175 200 240 250 300 350 400 450 500</td>
<td>1.139</td>
<td>AG.400.OF</td>
<td>AG.380.BF</td>
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<tr>
<td>E4.56.21</td>
<td>212</td>
<td>247</td>
<td>(150) 175 200 240 250 300 350 400 450 500</td>
<td>1.567</td>
<td>AG.400.OF</td>
<td>AG.380.BF</td>
</tr>
<tr>
<td>E4.56.25</td>
<td>260</td>
<td>294</td>
<td>(150) 175 200 240 250 300 350 400 450 500</td>
<td>1.656</td>
<td>AG.400.OF</td>
<td>AG.380.BF</td>
</tr>
</tbody>
</table>

More widths upon request. Please consult igus® for delivery times. *Part No. of individual part.

Complete Part No. with required radius (R). Example: E4.56.15.150.0.AG.NC
To receive autoglide e-chains® with pre-fitted glide wings please add index OF. Example: E4.56.15.150.0.AG.OF.NC

Version 01 | Series E4.56AG | Product range
Crossbars along the inner radius fitted with moulded autoglide grooves

Version 01 | Series E4.56AG | Installation dimensions

autoglide principle
Offset operation of upper and lower run, offering a consistent glide surface

Gliding applications | Long travels up to max. 80m | Fill weight* 6.4 - 12kg/m
*depends on radius

Notes: We recommend the project planning of such a system to be carried out by igus®. In case of travels under 10m we recommend an unsupported e-chain®.

Accessories | More information ► www.igus.co.uk/E4.56AG

P4 profile-rol e-chain® - reduce energy consumption by 57%
- Safe, low-noise, abrasion-resistant energy supply system for long travels
- Long travels up to 800m and more, high fill weights up to 30kg/m
- For very long travels and high travel speeds up to 10m/s
- Autoglide crossbars for safe guidance

More information ► From page 1112

More information ► www.igus.co.uk/E4.56AG

Version 01 | Series E4.56AG | Installation dimensions

Optimised, cable-friendly interior separation
Pivoting KMA mounting bracket with attachment from any side

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/autoglide

More information ► www.igus.co.uk/E4.56AG
Self-guiding e-chains® for system E2/000 - autoglide version 02

Guide troughs for long travels can be dispensed with when using the autoglide system. Self-guiding e-chains® can glide safely on top of each other for up to 70 metres. The system has now been extended to the igus® E2/000 and further improved. The autoglide crossbars ensure even longer life. A clip-on glide wing ensures safe e-chain® alignment over the first few metres of travel. The eccentric guides are fastened to the floor every 2 metres.

- Travel distance up to 70m and speed up to 2.0m/s
- Very compact, removes troughs forming an obstacle in the working area
- Quick installation for long travels
- Openable along the inner radius
- Also for "half tube" fully enclosed in the outer radius
- Clip-on glide wings, secure movement of the e-chain®
- Floor guides can be driven over

Typical industries and applications
- Greenhouses
- Storage and retrieval systems
- Conveyor belts
- Indoor cranes
- Handlings
- And many other long travel applications

Order example for complete e-chain® (15.0m), colour black, with mounting brackets and interior separation:

- e-chain® (15m) indicate e-chain® length: 15m E4.32.15.150.0.AG.NC
- 2 glide wings 2 glide wings are required per e-chain® E4.32.15.150.0.AG.0F.NC
- 8 pieces (2 units every 2m from the half of the travel) + Floor guides AG.380.BF

Order text: 15 m 2400.05AG.100.0 + AG.2400.0F + AG.380.BF

Order key 2400.05AG.100.0

More information ▶ www.igus.co.uk/autoglide

Find a video online ▶ www.igus.co.uk/safetrough

Technical data

- Speed gliding \( \leq 2.0 \, [m/s] \)
- Acceleration gliding \( \leq 1.0 \, [m/s^2] \)
- Material - permitted temperature °C, igumid G -40°C / +120°C
- Flammability class, igumid G VDE 0304 IIC UL94-HB

Order example | Order key

Order example for complete e-chain® (15.0m), colour black, with mounting brackets and interior separation:

- e-chain® (15m) indicate e-chain® length: 15m E4.32.15.150.0.AG.NC
- 2 glide wings 2 glide wings are required per e-chain® E4.32.15.150.0.AG.0F.NC
- 8 pieces (2 units every 2m from the half of the travel) + Floor guides AG.380.BF

Order text: 15 m 2400.05AG.100.0 + AG.2400.0F + AG.380.BF

Order key 2400.05AG.100.0

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
Version 02 | Series 2400AG | Product range
Crossbars with moulded autoglide grooves

E2000 AG e-chain® - energy-efficient and cost-effective
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Travels up to 150m, max. rolling speed up to 4m/s
- Available as cost-effective ready-to-fit harnessed system with many accessories

Accessories | More information ► www.igus.co.uk/2400AG

More information ► www.igus.co.uk/2400AG
Version 02 | Series 2600AG | Product range
Crossbars with moulded autoglide grooves

**Autoglide principle**
Offset operation of upper and lower run, offering a consistent glide surface

**Gliding applications** | Long travels up to max. 60m | Fill weight 2.5kg/m

**Accessories** | More information ➤ [www.igus.co.uk/2600AG](http://www.igus.co.uk/2600AG)

---

**E2/000 rol e-chain®** - energy-efficient and cost-effective
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Travels up to 150m, max. rolling speed up to 4m/s
- Available as cost-effective ready-to-fit harnessed system with many accessories

More information ➤ From page 1160

---

**Version 02 | Series 2600AG | Installation dimensions**

**Part No.**
e-chains®

<table>
<thead>
<tr>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R Available bend radii</th>
</tr>
</thead>
<tbody>
<tr>
<td>2600.05 AG.0.0</td>
<td>50 66</td>
<td>075 100 125 150 175 200 250</td>
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<tr>
<td>2600.07 AG.0.0</td>
<td>75 91</td>
<td>075 100 125 150 175 200 250</td>
</tr>
</tbody>
</table>

**Glide wing®**

- AG.2600.0F
- AG.380.BF

**Floor guide®**

- AG.2600.0F
- AG.380.BF

**Notes:** We recommend the project planning of such a system to be carried out by igus®.

For travels between 5.0 and 10m we recommend an unsupported e-chain®.

---

**Accessories**

- Optimised, cable-friendly interior separation
- Pivoting mounting brackets - recommended for gliding applications
- KMA mounting bracket with attachment from any side

**More information ➤ [www.igus.co.uk/autoglide](http://www.igus.co.uk/autoglide) 1187**
**E2/2000 rol e-chain® - energy-efficient and cost-effective**

- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Travels up to 150m, max. rolling speed up to 4m/s
- Available as cost-effective ready-to-fit harnessed system with many accessories

More information ➤ From page 1160
easy chain® openable along the outer radius, fitted with moulded autoglide grooves along the inner radius - autoglide Version 03

Version 03 is the quickly filled and cost-effective easy chain® e-chain® with moulded autoglide combs along the inner radius. The combs, similar to tiewrap plates, are moulded directly into the e-chain® link and are available in two sizes. The primary reason to choose easy chains® is to save time when fitting cables. The material, igumid NB, presents more application opportunities due to its elasticity, UL94-V2 classification and excellent suitability for cleanrooms. The one-piece design keeps the easy chain® very cost-effective.

- Doubly cost-effective. Elimination of guide troughs and cost-effective, one-piece e-chain®
- Very quick assembly time - even for long travels
- "easy" design: easy to fill - cables and hoses can be inserted without opening
- Single part design
- Small width, quiet operation
- UL94-V2 classification

Typical industries and applications
- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.
**Version 03 | Series EA16 | Product range**

"easy" design along outer radius, autoglide crossbars along inner radius

**Series EA16 | "easy" design - split crossbar along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
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<th>R Available bend radii</th>
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<td>60</td>
<td>065, 075, 100</td>
</tr>
</tbody>
</table>

**Installation dimensions**

![autoglide principle](offset operation of upper and lower run, offering a consistent glide surface)

**Gliding applications** | Long travels up to max. 20m | Fill weight 0.4kg/m

**Note:** We recommend the project planning of such a system to be carried out by igus®.

**Part No.**
e-chains®

**Available bend radii**

065, 075, 100

**Mounting brackets:** full set incl. tiewrap plates Part No. 117.4.12PZ, full set without tiewrap plates Part No. 117.4.12P

Complete Part No. with required radius (R). Example: EA16.4.100.0

**More widths upon request. Please consult igus® for delivery time.**

**3D CAD, configurators, service life calculation and more** | www.igus.co.uk/autoglide

---

**Version 03 | Series EA25 | Product range**

"easy" design along outer radius, autoglide crossbars along inner radius

**Series EA25 | "easy" design - split crossbar along the outer radius**

<table>
<thead>
<tr>
<th>Part No.</th>
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**Installation dimensions**

![autoglide principle](offset operation of upper and lower run, offering a consistent glide surface)

**Gliding applications** | Long travels up to max. 20m | Fill weight 0.4kg/m

**Note:** We recommend the project planning of such a system to be carried out by igus®.

**Part No.**
e-chains®

**Available bend radii**

075, 100

**Mounting brackets:** full set incl. tiewrap plates Part No. EA25.050.12PZB, full set without tiewrap plates Part No. EA25.050.12P

Complete Part No. with required radius (R). Example: EA25.050.100.0

**More widths upon request. Please consult igus® for delivery time.**

**3D CAD, configurators, service life calculation and more** | www.igus.co.uk/autoglide

---

1192 More information | www.igus.co.uk/EA16 | www.igus.co.uk/EA25
Special glide shoes provide a safe guiding for the E2/000 - autoglide version 04

In this version, special plastic glide shoes are fitted to the sides of the e-chain® links every 1-2m. The function of these gliding shoes resembles the leeboards used on sail boats. The glide shoes pivot upwards to enable the constant travel. They provide the precise lateral guidance and a smooth gliding of the e-chain®. The glide shoes are assembled every 24th e-chain® link from the moving end. Up to 10m length without floor guides is possible in the series 2400/2450/2480/2500.

- Reliable and precise guidance due to special plastic glide shoes
- Long travels with easier filling
- Provides precise lateral guidance and a smooth gliding of the e-chain®
- Easy to install - openable along the outer radius

**Typical industries and applications**
- Industrial vehicles
- Long travels with easier filling
- Simple outdoor applications

**Technical data**
- Speed gliding \( \leq 0.5 \, [\text{m/s}] \)
- Acceleration gliding \( \leq 1.0 \, [\text{m/s}^2] \)
- Material - permitted temperature °C, igumid G
  - -40°C / +120°C
- Flammability class, igumid G
  - VDE 0304 IIC UL94-HB

**Order example | Order key**

**Order example for complete e-chain® (10.0m), colour black, with mounting brackets and interior separation:**

| e-chain® (10m) | Please indicate e-chain® length*: 10m or 209 links | 2500.05.150.0 |
| e-chain® + Glide wing | Module, containing 4 e-chain® links and 2 glide wings | 2500.05.150.0.AG |
| + Floor guides | 8 pieces (2 units every 2m from the half of the travel) | AG.380.BF |

**Order text:**

- 10 m 2500.05.150.0 + 10 X 2500.05.150.0.AG

*Length= number of links in the assembly must still be deducted = 209 links (optional: mounting bracket and interior separation)

**Note:** the lateral glide wings are assembled on every 24th e-chain® link.

**Order key**

2500.05.150.0.AG

**Order examples**

- autoglide version 04
- Introduction | Advantages
- Easy to install: openable along the outer radius
- Practical: traversable floor guides
- Safely on track: assembled glide wing holds the e-chain®
- Universal: mounting bracket with integrated strain relief

**More information**

www.igus.co.uk/autoglide

**Available from stock. Ready to ship in 24 - 48hrs.**

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.*

**3D CAD, configurators, service life calculation and more**

www.igus.co.uk
Special glide shoes provide secure guidance

Picture shows 2500

e-chains®  Series 2400  Openable along the inner radius
Half e-tubes  Series 2450  Openable along the inner radius, closed along outer radius
Full e-tubes  Series 2480  Openable along the inner radius, fully enclosed

Complete Part No. with required radius (R). Example: 2500.05,150.0.AG

<table>
<thead>
<tr>
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<th>Series 2500</th>
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<td>Floor guide*</td>
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<td>AG.380.BF</td>
<td>AG.380.BF</td>
<td>AG.380.BF</td>
</tr>
</tbody>
</table>

*Radius for series 2450/2480 available upon request. Please consult igus® for delivery time. *Part No. of individual part

**E2000 rol e-chain® - energy-efficient and cost-effective**
- Required drive power is reduced up to 75% while increasing the service life of the e-chain®
- Travels up to 150m, max. rolling speed up to 4m/s
- Available as cost-effective ready-to-fit harnessed system with many accessories

More information ➤ From page 1160

Gliding applications | Long travels up to max. 20m | Fill weight 1.6kg/m

The lateral glide wings are assembled on every 24th e-chain® link.

**Note:** We recommend the project planning of such a system to be carried out by igus®.
In case of travels under 3.0m we recommend an unsupported e-chain®.

<table>
<thead>
<tr>
<th>R</th>
<th>055*</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
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<td>D2*K</td>
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<td>2,438</td>
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</table>

*Radius for series 2450/2480 available upon request. Please consult igus® for delivery time.

**Accessories**
- Optimised, cable-friendly interior separation
- Pivoting mounting brackets - recommended for gliding applications
- KMA mounting bracket with attachment from any side

More information ➤ www.igus.co.uk/autoglide

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/autoglide
Picture shows 2700 e-chains®

2700 e-chains®

Available as cost-effective ready-to-fit harnessed system with many accessories

Optimised, cable-friendly interior separation

Pivoting mounting brackets - recommended for gliding applications

KMA mounting bracket with attachment from any side

More information ▶ www.igus.co.uk/autoglide
Guide trough systems

Aluminium SuperTrough | Steel guide trough | Steel support tray
Aluminium support tray | guidefast | guidelite
Tubular trough | Snap-in trough
Guide troughs | Aluminium | Steel

For general applications - aluminium SuperTrough, basic version, standard
- Huge range available for almost all igus® e-chains®
- Very simple, modular assembly
- Corrosion-resistant, seawater-resistant aluminium profile
- Flexible assembly
- Plastic glide bar made of PE
- Glide strips for wear protection at high-speed
- Bottom clamp attached either inwards or outwards - directly on the surface or on the C-profile
- Heavy-duty bracket option for high load applications: you can configure this version using our online catalogue
- Conductivity according to DIN EN 61537 - as standard
Aluminium SuperTroughs ➤ From page 1208

For heavy-duty applications - steel guide trough
- Very tough steel guide trough for applications in tough environments
- Easy assembly due to installation set for joining and fixing
- Easy mounting directly to the C-profile
- Large range, 2-piece design, adjustable to e-chain® width
- Available in galvanised steel and stainless steel
- Low friction: Glide bar made of PE
- Fixed end module option, for fast and easy fitting without any drilling
- Conductivity according to DIN EN 61537 - as standard
Steel guide troughs ➤ From page 1234

Guide troughs | Further trough systems

For easy support of the lower run - steel support tray
- Simple one-piece steel support trays as a modular construction kit
- Complete system, ready to install
- Easy installation onto your machine, on profiles or wall brackets
Steel support trays ➤ From page 1264

The flexible construction kit to support the lower run - aluminium support tray
- Corrosion-resistant and seawater-resistant aluminium rails with adjustable width and open principle
- Wear-reducing glide strip integrated as standard
- Easy installation and connection of the e-chain®
Aluminium support trays ➤ From page 1270

Energy supply for crane girders and indoor cranes - guidefast
- Save up to 80% installation time
- Fits virtually any standard crane girder
- Static cable can be fixed to the trough brackets
- Low wear polymer glide bars (optional)
guidefast ➤ From page 1276

Long travels up to 150m, quick and cost-effective - igus® guidelite
- Time saving through fast assembly
- Very lightweight polymer components
- Corrosion-resistant
- Construction kit solution, from stock
guidelite ➤ From page 1282

Lets light and dirt through - tubular trough system RS
- Resistant to dirt - wear debris falls through
- More open than sheet metal constructions
- Easy and fast assembly and cost-effective
- Easy and space-saving delivery
Tubular trough system RS ➤ From page 1288

Simple and cost-effective - snap-in trough system SP
- Quick and easy assembly
- Fixed inner width with spacer
- No complex width setting required
- Cost-effective due to easy assembly
Snap-in trough system SP ➤ From page 1294

More information ➤ www.igus.co.uk/guide

www.igus.co.uk/alu-guide

www.igus.co.uk/alu-guide
igus® guide troughs

Guide troughs are used for long travels. They support the low friction gliding operation of the e-chain® and e-tubes. If the fixed end is installed in the centre of the travel ("centre-fixed"), the e-chain® glides on itself for half the travel. For the other half, we recommend glide bars, which are assembled into the trough and on which the e-chain® glides. igus® guide troughs are available from stock with these highly abrasion resistant polymer glide bars, which are optimised for use with igus® e-chains® in terms of noise, abrasion and friction.

Trough type

igus® offers guide troughs made of corrosion-resistant aluminium, steel or stainless steel. The trough type to be used depends on the application and the requirements of the customer. We recommend the igus® aluminium SuperTrough as standard.

Glide bars

Glide bars made from igulen are optimised for use with the e-chain® material and offer the lowest gliding friction, noise and wear. Glide bars must be used if the fixed end is in the centre of the travel. This means that half of the guide trough has glide bars and the other half is without.

Delivery details

The troughs are delivered in 2m sections. Special lengths up to 6m are possible. The left and right side parts are installed with the appropriate spacing - depending on the width of the igus® e-chain®. The necessary width is shown by the dimension \( B_{\text{a}} \) on the guide trough pages. The trough side parts can be linked with the base by screwing, welding or a special igus® installation set. The fixed end module for the igus® aluminium SuperTrough is a quick fix for mounting the stationary end of an e-chain® with a KMA-mounting bracket. With this module, easy attachment of the e-chain® with plastic-metal mounting bracket (KMA) to the super aluminium trough is possible without drilling.

For lateral guidance on long travels, an igus® guide trough is necessary. In most cases, the upper run of the e-chain® glides partly on the lower run and partly on a glide bar; this is shown in the diagram below. If the fixed end of the system can be placed in the centre, the e-chain® length is calculated as follows: \( L_x = \frac{1}{2} S_x + K_2 \). Placing the fixed end in the centre of the travel offers the shortest e-chain® length and cables. The length of the e-chain® then corresponds to slightly more than half of the travel length. Depending on the technical data for the selected e-chain®, the mounting height of the moving end of the e-chain® must be lowered on some applications. In these cases please contact igus® and we’d be glad to advise.

Selection criteria

Following parameters are required for design of a trough system: ● e-chain® type (Series, width \( B_r \), radius \( R_i \)) ● Travel and travel speed ● Fill weight ● Acceleration ● Lateral acceleration ● Environmental conditions

Design and installation of the guide trough

Usually, the height of the trough must be at least twice that of the e-chain® link height: \( H_{\text{a}} \geq 2 \times h_a \). The sides must provide a chamfered opening. The trough inner width is the same as the e-chain® outer width, plus 4mm or 5mm (eg \( B_{\text{a}} = B_a + 4 \)). Along the side of the trough, where the upper run cannot glide on the lower run, glide bars must be installed. Guide troughs with and without glide bars can be obtained from stock for almost all igus® e-chains®.

Important: When assembling the trough parts, the following points must be observed: ● Properly align all trough parts during installation ● All screw heads should be flush with the trough ● Smooth level 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 igus® guide troughs.

Aluminium SuperTrough without glide bars - upper run glides on the lower run

Aluminium SuperTrough with glide bars. The upper run glides on the glide bars from the centre of the travel
Guide troughs | Long travels | C-profiles

C-profile Part No. 92.52.XX

- For all igus® aluminium SuperTrough and steel guide troughs
- With increased holding force for heavy-duty applications
- Standard material galvanised steel Part No. 92.52.XX
- Also available as stainless steel version*, please add index .E Example: Part No. 92.52.XX .E
- Length tolerances for C-profiles of ±5mm possible!

XX = length mm / *Material: stainless steel 1.4301/AISI 304

Guide troughs | Application examples

C-profile Part No. 92.52.XX | With increased holding force for heavy-duty applications

igus® has experience with all kinds of installations and travels. Very long travels up to 615m or "green systems", they help save energy cost and are made with igus® e-chains®, chainflex® cables and guide troughs. Together with the igus® accessories, they offer long service life even in tough weather conditions or in areas of dust and dirt.

More information ► www.igus.co.uk/guide

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/guide
Aluminium SuperTrough

For general use

Advantages aluminium SuperTrough

- Huge range available for almost all igus® e-chains®
- Very simple, modular assembly
- Corrosion-resistant, seawater-resistant aluminium profile
- Flexible assembly
- Heavy-duty bracket option for high load applications: you can configure the heavy-duty version online
  - www.igus.co.uk/alu-guide
- Conductivity according to DIN EN 61537 - as standard
- Glide strips for wear protection at high-speed

When to use another guide trough:

- When a very tough guide trough made from steel is required for heavy-duty applications
  - Steel guide troughs, page 1234
Aluminium SuperTrough | Introduction | Advantages

Huge range: aluminium profile (standard: 2m section) available for almost all igus® e-chains®, seawater and corrosion-resistant

Wear-reducing: glide strips protect from wear on the sides

Fast connection: interface connector, basic, made of plastic; easy to assemble without tools

Easy click-on assembly: wear-reducing polymer glide bar

Noise-reducing: optional rubber silencer profile

Easy installation: basic bottom clamp, attached either inwards or outwards

Easy fastening: C-profile, for bottom clamps

For heavy-duty applications: heavy-duty clamp
You can configure the heavy-duty version using our online catalogue ▶ www.igus.co.uk/alu-guide

For general applications - aluminium SuperTrough, basic version, standard

- Simple and cost-effective basic design as well as version for complex engineering applications
- Very simple, modular assembly
- Corrosion-resistant, seawater-resistant aluminium profile
- Flexible assembly
- Misalignment-free installation - no screwing or welding of the profiles required
- Conductivity according to DIN EN 61537 - as standard

Aluminium SuperTrough | Selection table

<table>
<thead>
<tr>
<th>Part No. without glide bars</th>
<th>Part No. with glide bars</th>
<th>Outer height $H_m$ [mm]</th>
<th>Part No. installation set*</th>
<th>Side part material</th>
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*The basic installation sets are the standard for the aluminium SuperTroughs. They can be fastened inside or outside and are recommended for most application areas. The basic clamps are made of aluminium. The heavy-duty versions are differentiated only by the type of the installation set. The part numbers of the channel side plates, glide strips, etc., are the same as the basic model. The heavy-duty installation set consists of a larger aluminium bracket, fastened on the outside of the guide trough.

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

For heavy-duty applications - aluminium SuperTrough, heavy-duty version, standard

- For tough plant construction
You can configure the heavy-duty version according to the respective e-chain® you've chosen or ▶ www.igus.co.uk/alu-guide

Aluminium SuperTrough | Size overview

3D CAD, configurators, service life calculation and more ▶ www.igus.co.uk/alu-guide

1210 More information ▶ www.igus.co.uk/alu-guide
Aluminium SuperTrough | Basic version | Individual parts

Components, guide troughs and components, mounting kits

Components
- Trough side parts, aluminium, 2 m
- Glide bar, plastic, 2 m
- Glide strips, plastic, 2 m
- Without glide strips upon request
- Optional: rubber silencer profile

Components, installation set
- Bottom clamp, aluminium
- C-profile, galvanised steel
- Allen wrench
- Sliding nut
- Interface connector, plastic

Aluminium SuperTrough | Features

Simple fastening with basic bottom clamp and C-profile
Wear-reducing with polymer glide bar and glide strip
Noise-reducing with silencer profile option
Simple connection to the e-chain® with the fixed end module

Aluminium SuperTrough | Basic version

Configured according to your requirements

Quickly and easily 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 infed 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 part: 2,000mm). For centre infed, the length of the guide trough is calculated from half the travel length with and half the travel length without the glide bar
- Option: sound damping rubber silencer profile
- Number and type of the installation set
- There are two installation set options: basic (standard), heavy-duty (for plant construction)

The quantity of the installation set is calculated from the number of the trough pieces + 1 set:

Order example | Examples based on Part No. 973.30.SL | 973.31.SL

Order example: length of travel 30m - centre fixed for series 3500.100.200.0 with $BR_i = 124$

Guide trough side part, incl. glide strips, without glide bar
Order text: 16m guide trough without glide bar (16 x 2m sections) 973.30.SL

Guide trough side part, incl. glide strips, with glide bar
Order text: 16m guide trough with glide bar (16 x 2m sections) 973.31.SL

Installation set basic complete (quantity: guide trough sets + 1)
Order text: 17 installation sets, basic 960.40.175

Fixed end module
Order text: 1 set 973.80.5

Option: For an additional noise dampening with silencer profile, please add Index A 973.30.SLA

Calculation - travel centre fixed: half travel length, rounded to full 2m sections = X m.
Guide trough length without glide bars + X m guide trough length with glide bars + installation set, basic (number of trough pieces + 1)
Aluminium SuperTrough | Basic version | Fixed end module

Quick and simple fixing onto the aluminium SuperTrough

Optimised fixed end module - lightweight, low-cost, for connection of the e-chain® in aluminium SuperTrough

- Mounting bracket attachment on the aluminium SuperTrough without drilling
- Fixed end module is clamped to the trough
- Slave installation time
- Minimise errors from drilling holes
- Stainless and cost-effective

Installation - fixed end module

A

Removing the preassembled metal bushings

B

Insert the threaded bushings

Installation KMA mounting bracket

Installation fixed-end module

Mounting on KMA mounting bracket

Fixing on the aluminium SuperTrough

Fixed end module - simple fixing of the e-chain® without drilling

A

Fixed end clamp to attach the e-chain® into the smallest aluminium 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 aluminium SuperTrough without drilling.

- Quick attachment of the e-chain® to the aluminium SuperTrough
- The mounting point of the e-chain® can be changed quickly

Fixed end clamp principle:

1) Fixed end clamp 970.80
2) Mounting bracket
3) Aluminium SuperTrough 970.30.SL

Aluminium SuperTrough | Test examples

The igus® aluminium SuperTrough has been used in test setups since 2005. Test setup axis 1: speed 1.5m/s, travel 18m, travel so far: about 50,000km (test running since 2005)

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

More information ➤ www.igus.co.uk/alu-guide

Aluminium SuperTrough | Basic version | Fixed end module

Fixed end module | Fixed end clamp | Product range

<table>
<thead>
<tr>
<th>Series</th>
<th>Part No.</th>
<th>For aluminium SuperTroughs</th>
<th>For e-chain® series</th>
<th>From inner width</th>
<th>Mounting bracket</th>
</tr>
</thead>
<tbody>
<tr>
<td>970.80/1</td>
<td>970.30.SL</td>
<td>970.31.SL</td>
<td>10, B15, 15/R15/1</td>
<td>050</td>
<td>one-piece</td>
</tr>
<tr>
<td>970.80/1</td>
<td>970.30.SL</td>
<td>970.32.SL</td>
<td>1500/1</td>
<td>050</td>
<td>one-piece</td>
</tr>
<tr>
<td>971.80/1</td>
<td>971.30.SL</td>
<td>971.31.SL</td>
<td>E2.26, 2500, E6.29, ER61.29</td>
<td>07</td>
<td>KMA</td>
</tr>
<tr>
<td>972.80/1</td>
<td>972.02.30.SL</td>
<td>972.02.31.SL</td>
<td>E4.28, E4.31L</td>
<td>06</td>
<td>KMA</td>
</tr>
<tr>
<td>972.80/1</td>
<td>972.30.SL</td>
<td>972.32.SL</td>
<td>E4.28, E4.31L</td>
<td>06</td>
<td>KMA</td>
</tr>
<tr>
<td>973.81.5</td>
<td>973.30.SL</td>
<td>973.31.SL</td>
<td>E4.42, E4.48L, E6.52</td>
<td>10</td>
<td>KMA</td>
</tr>
<tr>
<td>974.81.5</td>
<td>974.30.SL</td>
<td>974.31.SL</td>
<td>E4.42, E4.48L, E6.52</td>
<td>10</td>
<td>KMA</td>
</tr>
<tr>
<td>975.80/1</td>
<td>975.30.SL</td>
<td>975.31.SL</td>
<td>14040/14140/R18840, 14240/14340</td>
<td>10</td>
<td>KMA</td>
</tr>
<tr>
<td>975.81/1</td>
<td>975.30.SL</td>
<td>975.31.SL</td>
<td>15050/15150/R19850, 15250/15350</td>
<td>10</td>
<td>KMA</td>
</tr>
</tbody>
</table>

1) Material: polymer 2) Material: Aluminium AlMg3, seawater resistant 3) Fixed end clamp


More information ➤ www.igus.co.uk/alu-guide

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/alu-guide
Aluminium SuperTrough | 970.30.SL | 970.31.SL

Trough height: 77mm | Product range

For the following igus® series

- E2 mini
  - 10
  - B15
  - 15/R15

Note: The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

C-profile length according to dimension $B_{fa}$

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>970.30.SL</td>
<td>Ba attached inwards</td>
<td>2.10kg</td>
<td></td>
</tr>
<tr>
<td>970.31.SL</td>
<td>Ba attached outwards</td>
<td>2.00kg</td>
<td></td>
</tr>
</tbody>
</table>

Installation sets - consisting of part $A$ | $B$ | $C$ | $D$ | $E$

- 1 installation set without C-profile: 960.30
- 1 installation set with C-profile (C-profile length according to dimension $B_{fa}$): 960.30.XXX* upon request

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960.30.125

Aluminium SuperTrough | Full set

- Trough side parts - consisting of part $A$ | $B$ | $C$ | $D$ | $E$
  - Trough side part, incl. glide strips, without glide bar, 2m section: 970.30.SL = 2.10kg
  - Trough side part, incl. glide strips, with glide bar, 2m section: 970.31.SL = 2.00kg

- Installation sets - consisting of part $A$ | $B$ | $C$ | $D$ | $E$
  - 1 installation set without C-profile: 960.30
  - 1 installation set with C-profile (C-profile length according to dimension $B_{fa}$): 960.30.XXX* upon request

Aluminium SuperTrough | Components as individual parts

- Individual parts, trough
  - 1 trough side part, individual, 2m section: 70.11 = 2.04kg
  - 1 glide bar, plastic, individual, 2m section: 81.79 = 0.40kg
  - 1 glide strip, plastic, individual, 2m section: 76.01 = 0.03kg

- Individual parts, installation set
  - 1 bottom clamp, aluminium individual: 75.40 = 0.03kg
  - 1 C-profile, individual (C-profile length according to dimension $B_{fa}$): 92.52.XXX* = 0.03kg
  - 1 screw M6 x 16, individual: MAT 0040209 / M6 x 16
  - 1 glide nut, individual: MAT 0040057 / M6
  - 1 interface connector, individual: 75.60

Additional option for simple fixing of the e-chain® without drilling

- 1 set fixed end module (more information: Page 1214) 970.80

C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304). Please add index E to the Part No.

Note: The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

Note: The C-profile length $B_{fa}$ is guided by an aluminium SuperTrough system

For more information, visit: www.igus.co.uk/alu-guide

C-profile lengths (according to Dim. $B_{fa}$) | Basic version

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>970.30.SL</td>
<td>Ba attached inwards</td>
<td>2.10kg</td>
<td></td>
</tr>
<tr>
<td>970.31.SL</td>
<td>Ba attached outwards</td>
<td>2.00kg</td>
<td></td>
</tr>
</tbody>
</table>

More information: www.igus.co.uk/alu-guide

3D CAD, configurators, service life calculation and more: www.igus.co.uk/alu-guide
Aluminium SuperTrough | 970.30.SL | 970.32.SL
Trough height: 77mm | Product range

For the following igus® series
E2/000
● 1500
E4.1
● E4.21

C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304).

Aluminium SuperTrough

Installation sets - consisting of part Ba (with glide bar, 2m section)

- Trough side part, incl. glide strips, without glide bar, 2m section
  Part No. 970.30.SL
  Weight 1.10kg

- Trough side part, incl. glide strips, with glide bar, 2m section
  Part No. 970.32.SL
  Weight 1.70kg

Installation sets - consisting of part Bi (without C-profile)

- 1 installation set without C-profile
  Part No. 960.30
  Weight 0.88kg

- 1 installation set with C-profile (C-profile length according to dimension B2a)
  Part No. 960.30.XXX
  Weight 2.00kg

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960.30.125

Aluminium SuperTrough | Components as individual parts

- Individual parts, trough
  1 trough side part, individual, 2m section
    Part No. 71.10
    Weight 2.08kg
  1 glide bar, plastic, individual, 2m section
    Part No. 81.70
    Weight 0.42kg
  1 glide strip, plastic, individual, 2m section
    Part No. 75.01
    Weight 0.58kg

- Individual parts, installation set
  1 bottom clamp, aluminium individual
    Part No. 75.40
    Weight 0.83kg
  1 C-profile, individual (C-profile length according to dimension B2a)
    Part No. 92.52.XXX
    Weight 2.00kg
  1 screw M6 x 16, individual
    Part No. MAT 0040209 / M6 x16
  1 glide nut, individual
    Part No. MAT 004057 / M6
  1 interface connector, individual
    Part No. 75.60

- Additional option for simple fixing of the e-chain® without drilling
  1 set fixed end module (more information► Page 1214)
    Part No. 970.80

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 92.52.125.E

C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304). Please add index E to the Part No.

Seawater-resistant aluminium SuperTrough for an igus® E4 system on an RTG crane

1218  More information ► www.igus.co.uk/alu-guide

1219  3D CAD, configurators, service life calculation and more ► www.igus.co.uk/alu-guide
Aluminium SuperTrough | 971.30.SL | 971.31.SL

Trough height: 87mm | Product range

For the following igus® series

- **E2.1**
  - E2.26
- **E2/000**
- **E255**
- **E2 R**
  - **E6.1**
  - **EF61.29/EF61.29**
- **E6**
  - **E6.29/R6.29**

Aluminium SuperTrough | Full set

- Trough side parts - consisting of part 1, 2, 3, 4
  - Trough side part, incl. glide strips, without glide bar, 2m section
    - Part No.: 971.30.SLA**
    - Weight: 2.50kg
  - Trough side part, incl. glide strips, with glide bar, 2m section
    - Part No.: 971.31.SL
    - Weight: 3.20kg

*For an additional noise dampening with silencer profile, please add index A to the Part No. Example: 971.30.SLA

**Installation sets - consisting of part A, B, C, D, E

- 1 installation set without C-profile
  - Part No.: 960.30
  - Weight: 0.09kg
- 1 installation set with C-profile (C-profile length according to dimension $B_{ca}$)
  - Part No.: 960.30.XXX*
  - Weight: upon request

Aluminium SuperTrough | Components as individual parts

<table>
<thead>
<tr>
<th>Individual parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 trough side part, individual, 2m section</td>
<td>71.11</td>
<td>2.44kg</td>
</tr>
<tr>
<td>1 glide bar, plastic, individual, 2m section</td>
<td>82.79</td>
<td>0.60kg</td>
</tr>
<tr>
<td>1 glide strip, plastic, individual, 2m section</td>
<td>75.01</td>
<td>0.08kg</td>
</tr>
<tr>
<td>1 silencer profile, rubber, individual, 2m section (optional for an additional noise dampening)</td>
<td>75.67.H</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual parts, installation set</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 bottom clamp, aluminium individual</td>
<td>75.40</td>
<td>0.03kg</td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dimension $B_{ca}$)</td>
<td>92.52.XXX.E*</td>
<td>0.009kg/m</td>
</tr>
<tr>
<td>1 screw M6 x 16, individual</td>
<td>MAT 0040209 / M6 x16</td>
<td></td>
</tr>
<tr>
<td>1 glide nut, individual</td>
<td>MAT 0040057 / M6</td>
<td></td>
</tr>
<tr>
<td>1 interface connector, individual</td>
<td>75.60</td>
<td></td>
</tr>
</tbody>
</table>

**Additional option for simple fixing of the e-chain® without drilling**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 set fixed end module (more information ➤ Page 1214)</td>
<td>971.20.4</td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 92.52.125.E

C-profile lengths (according to Dim. $B_{ca}$) | Basic version

Bottom clamp attached either inwards or outwards

Pipe guide trough

![3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/alu-guide](image)

Heavy-duty version for high load applications

- This aluminium SuperTrough is also available with special heavy-duty brackets for secure connection
- You can configure the heavy-duty version using our online catalogue
- Installation set Part No. 971.50

More information ➤ www.igus.co.uk/alu-guide
Aluminium SuperTrough | 972.02.30.SL | 972.02.31.SL

Trough height: 117mm | Product range

**For the following igus® series**

- **E4.1L**
- **E4.31L/R4.31L**
- **E4.1**
- **E4.28/R4.28**
- **E5.1**
- **E5.35**
- **E6.1**
- **E6.35**

**Individual parts, installation set**

Aluminium SuperTrough

*Please add the C-profile length

1 installation set

1 installation set

Installation sets - consisting of part

Trough side parts - consisting of part A D G I

**For a smaller noise damper with the former profile, please add index A to the Part No. Example: 972.02.30.SL**

Installation sets - consisting of part A D G I

1 installation set without C-profile

1 installation set with C-profile (C-profile length according to dimension $B_d$)

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960.30.175

Aluminium SuperTrough | Full set

Trough side parts - consisting of part A D G I | Part No. | Weight

- Trough side part, incl. glide strips, without glide bar, 2m section 972.02.30.SL** | 3.00kg
- Trough side part, incl. glide strips, with glide bar, 2m section 972.02.31.SL | 0.70kg

**For an additional noise damper with a silencer profile, please add index A to the Part No. Example: 972.02.30.SL**

Installation sets - consisting of part A D G I

1 installation set without C-profile 960.30 | 0.00kg

1 installation set with C-profile (C-profile length according to dimension $B_d$) 960.30 XXX* | upon request

Aluminium SuperTrough | Components as individual parts

**Individual parts, trough**

- 1 trough side part, individual, 2m section 72.02.11 | 2.94kg
- 1 glide bar, plastic, individual, 2m section 62.79 | 1.03kg
- 1 glide strip, plastic, individual, 2m section 75.01 | 0.08kg
- 1 silencer profile, rubber, individual, 2m section (optional for an additional noise damper) 75.67.H | 0.19kg

**Individual parts, installation set**

- 1 bottom clamp, aluminium individual 75.40 | 0.03kg
- 1 C-profile, individual (C-profile length according to dimension $B_d$) 92.52.XXXL* | 0.00kg/m
- 1 screw M6 x 16, individual MAT 0040209 / M6 x16
- 1 glide nut, individual MAT 0040057 / M6
- 1 interface connector, individual 75.60

**Additional option for simple fixing of the e-chain® without drilling**

1 set fixed end module (more information ★ Page 1214) 972.80.4 ★

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 92.52.XXX

C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304). Please add index E to the Part No.

C-profile lengths (according to Dim. $B_d$) | Basic version

Bottom clamp attached either inwards or outwards

<table>
<thead>
<tr>
<th><strong>E4.31L/R4.31L</strong></th>
<th><strong>E4.28/R4.28</strong></th>
<th><strong>E6.35</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>Index</td>
<td>Part No.</td>
</tr>
<tr>
<td>$B_d$ mm</td>
<td>0.040</td>
<td>960.30.190</td>
</tr>
<tr>
<td>90 ± 0.15</td>
<td>64</td>
<td>960.30.175</td>
</tr>
<tr>
<td>85 ± 0.15</td>
<td>56</td>
<td>960.30.175</td>
</tr>
<tr>
<td>80 ± 0.15</td>
<td>48</td>
<td>960.30.175</td>
</tr>
<tr>
<td>75 ± 0.15</td>
<td>40</td>
<td>960.30.175</td>
</tr>
<tr>
<td>70 ± 0.15</td>
<td>32</td>
<td>960.30.175</td>
</tr>
<tr>
<td>65 ± 0.15</td>
<td>25</td>
<td>960.30.175</td>
</tr>
<tr>
<td>60 ± 0.15</td>
<td>17</td>
<td>960.30.175</td>
</tr>
<tr>
<td>55 ± 0.15</td>
<td>10</td>
<td>960.30.175</td>
</tr>
<tr>
<td>50 ± 0.15</td>
<td>9</td>
<td>960.30.175</td>
</tr>
<tr>
<td>45 ± 0.15</td>
<td>8</td>
<td>960.30.175</td>
</tr>
<tr>
<td>40 ± 0.15</td>
<td>7</td>
<td>960.30.175</td>
</tr>
</tbody>
</table>

Heavy-duty version for high load applications

- This aluminium SuperTrough is also available with special heavy-duty brackets for secure connection
- You can configure the heavy-duty version using our online catalogue
- Installation set Part No. 972.50.

More information ★ www.igus.co.uk/alu-guide
Aluminium SuperTrough | 972.30.SL | 972.31.SL

Trough height: 117 mm | Product range

For the following igus® series

E4.1L
● E4.38L/R4.38L
E4.1
● E4.32/H4.32/R4.32
E6.1
● E61.40
E6
● E64.40/R6.40

C-profile length according to dimension \( B_{Ra} \) | see table on the right page

Aluminium SuperTrough | Full set

Trough side parts - consisting of part \( 1 \) | \( 3 \) | \( 5 \) | \( 7 \)

Part No. 972.30.SL** 972.31.SL

Weight 3.0kg 0.7kg

**For an additional noise damping with silencer profile, please add index A to the Part No. Example: 972.30.SLA

Installation sets - consisting of part \( A \) | \( B \) | \( C \) | \( D \) | \( E \)

Part No. 960.30

Weight 0.0kg

1 installation set without C-profile 960.30

1 installation set with C-profile (C-profile length according to dimension \( B_{Ra} \)) 960.30.XXX

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960.30.150

Aluminium SuperTrough | Components as individual parts

Individual parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.11</td>
<td>2.9kg</td>
</tr>
<tr>
<td>82.79</td>
<td>0.0kg</td>
</tr>
<tr>
<td>75.01</td>
<td>0.0kg</td>
</tr>
<tr>
<td>75.67</td>
<td>0.1kg</td>
</tr>
</tbody>
</table>

Individual parts, installation set

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.40</td>
<td>0.0kg</td>
</tr>
<tr>
<td>MAT 0040020 / M6 x 16</td>
<td>0.0kg</td>
</tr>
<tr>
<td>MAT 0040057 / M6</td>
<td>0.0kg</td>
</tr>
</tbody>
</table>

Heavy-duty version for high load applications

This aluminium SuperTrough is also available with special heavy-duty brackets for secure connection.

You can configure the heavy-duty version using our online catalogue.

Installation set Part No. 972.50.

More information | www.igus.co.uk/alu-guide
**Aluminium SuperTrough | Full set**

Trough side parts - consisting of part  \( B_i \) and C-profile length

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>972.30.SLA**</td>
<td>3.30kg</td>
</tr>
<tr>
<td>972.32.SL**</td>
<td>3.70kg</td>
</tr>
</tbody>
</table>

**For an additional noise dampering with silencer profile, please add index A to the Part No. Example: 972.30.SLA A**

Installation set - consisting of part A

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>960.30</td>
<td>0.05kg</td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960.30.XXX*

**Aluminium SuperTrough | Components as individual parts**

Individual parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.11</td>
<td>2.94kg</td>
</tr>
<tr>
<td>62.79</td>
<td>0.60kg</td>
</tr>
<tr>
<td>75.01</td>
<td>0.05kg</td>
</tr>
<tr>
<td>75.67.H</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

Individual parts, installation set

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.40</td>
<td>0.03kg</td>
</tr>
</tbody>
</table>

C-profile, individual (C-profile length according to dimension \( B_{ii} \))

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.52.XXX</td>
<td>0.00kg/m</td>
</tr>
</tbody>
</table>

1 screw M6 x 16, individual

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0040209 / M6 x 16</td>
<td></td>
</tr>
</tbody>
</table>

1 glide nut, individual

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 0040057 / M6</td>
<td></td>
</tr>
</tbody>
</table>

1 interface connector, individual

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.00</td>
<td></td>
</tr>
</tbody>
</table>

C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304). Please add index B to the Part No.

**C-profile lengths (according to Dim. \( B_{ii} \))**

**Basic version**

Bottom clamp attached either inwards or outwards

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>72.10</td>
<td>0.16kg</td>
</tr>
<tr>
<td>72.20</td>
<td>0.16kg</td>
</tr>
<tr>
<td>72.30</td>
<td>0.16kg</td>
</tr>
<tr>
<td>72.40</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

**Heavy-duty version for high load applications**

This Aluminium SuperTrough is also available with special heavy-duty brackets for secure connection. You can configure the heavy-duty version using our online catalogue. Installation set Part No. 972.50.

**Due to the compact design of the Aluminium SuperTrough, less space is required along the travel distance. Long travel crane; 32m travel, operating speed 80m/min.**

More information | www.igus.co.uk/alu-guide
### Aluminium SuperTrough | Full set

**Trough side parts - consisting of part A, B, C, D**

- **Part No.** 973.30.SL / 973.31.SL
- **Weight** 4.00 kg

**Note:** The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

**Installation sets - consisting of part A, B, C, D, E:**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>960.40/XXX</td>
<td>0.00 kg</td>
</tr>
</tbody>
</table>

*Please add C-profile length XXX as shown on the tables on the right page. Example: 960.40.175*

### Aluminium SuperTrough | Components as individual parts

<table>
<thead>
<tr>
<th>Individual parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Trough side part, Individual, 2m section</td>
<td>973.10.SL</td>
<td>73.11</td>
</tr>
<tr>
<td>2 Glider bar, Plastic, Individual, 2m section</td>
<td>63.79</td>
<td></td>
</tr>
<tr>
<td>3 Glide strip, Plastic, Individual, 2m section</td>
<td>75.01</td>
<td></td>
</tr>
<tr>
<td>4 Silencer profile, Rubber, Individual, 2m section (optional for an additional noise dampering)</td>
<td>75.68.H</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual parts, installation set</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Bottom clamp, aluminium individual</td>
<td>92.52/XXX</td>
<td>92.52</td>
</tr>
<tr>
<td>2 Screw M6 x 16, Individual</td>
<td>MAT 000445/48</td>
<td>50.38</td>
</tr>
<tr>
<td>3 Glide nut, Individual</td>
<td>MAT 000441/48</td>
<td>50.38</td>
</tr>
<tr>
<td>4 Interface connector, Individual</td>
<td>75.60</td>
<td></td>
</tr>
</tbody>
</table>

### E2/48

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>Bb</td>
<td>Br</td>
</tr>
<tr>
<td>250</td>
<td>74</td>
<td>upon request</td>
</tr>
<tr>
<td>275</td>
<td>89</td>
<td>upon request</td>
</tr>
<tr>
<td>300</td>
<td>105</td>
<td>upon request</td>
</tr>
<tr>
<td>325</td>
<td>125</td>
<td>upon request</td>
</tr>
<tr>
<td>350</td>
<td>140</td>
<td>upon request</td>
</tr>
<tr>
<td>375</td>
<td>150</td>
<td>upon request</td>
</tr>
<tr>
<td>400</td>
<td>165</td>
<td>upon request</td>
</tr>
<tr>
<td>425</td>
<td>180</td>
<td>upon request</td>
</tr>
<tr>
<td>450</td>
<td>195</td>
<td>upon request</td>
</tr>
<tr>
<td>475</td>
<td>205</td>
<td>upon request</td>
</tr>
<tr>
<td>500</td>
<td>215</td>
<td>upon request</td>
</tr>
</tbody>
</table>

### Heavy-duty version for high load applications

- This aluminium SuperTrough is also available with special heavy-duty brackets for secure connection.
- You can configure the heavy-duty version using our online catalogue.
- Installation set Part No. 973.50.
- More information: www.igus.co.uk/alu-guide
C-profiles also available in 304 stainless steel. Material 1.4301 (AISI 304).

Trough side part, incl. glide strips, set can di

Note:

E6

O

E4.1

140/4140/18840
142/4140
E6
E61.62
E6
E6.62

Additional option for simple fixing of the e-chain without drilling

Part No.
00404145 / M8 x 20
463

Page 1214 | Product range

www.igus.co.uk/alu-guide

Heavy-duty version for high load applications

This Aluminium SuperTrough is also available with special heavy-duty brackets for secure connection

You can configure your heavy-duty version using our online catalogue

Installation set Part No. 974.50.

More information ➤ www.igus.co.uk/alu-guide

1230 More information ➤ www.igus.co.uk/alu-guide
Steel guide trough

Very tough for heavy-duty applications

Advantages of the steel guide trough

- Very tough guide trough for applications in tough environments
- Easy assembly due to installation set design
- Easy mounting directly to the C-profile
- Large range, 2-piece design, adjustable to e-chain® width
- Available in galvanised steel and stainless steel
- Low friction: Glide bar made of PE
- Fixed end module option, for fast and easy fitting without any drilling
- Conductivity according to DIN EN 61537 - as standard

When to use another guide trough:

- When a corrosion-resistant, seawater-resistant aluminium trough is required,
  - Aluminium SuperTroughs, page 1208
Steel guide trough | Introduction | Advantages

Heavy-duty:
very tough guide trough made of steel

Large range:
2-piece design, adjustable to e-chain® width

Resistant:
side parts made from galvanised steel
Optional side parts made from:
304 stainless steel, material 1.4301 (AISI 304) / 316 stainless steel, material 1.4404 (AISI 316L) / 316 stainless steel, material 1.4571 (AISI 316Ti)

Easy to install: installation set for joining and fixing; secure connection without misalignment and with no welding

Low friction:
glide bar made from PE

Simple fastening:
directly on the ground or with C-profile

Fast and easy mounting:
with fixed end module, without any drilling

Very tough for heavy-duty applications - steel guide trough

If the igus® installation sets are used, the guide troughs are very easy to assemble. All steel guide troughs are constructed according to the same basic design. On the following pages, you will find information about dimensions, weights and accessories. All sizes use a common C-profile on which the guide parts are assembled. The installation brackets used vary in height only. Conductivity according to DIN EN 61537 - as standard.

Steel guide trough | Selection table

<table>
<thead>
<tr>
<th>Part No. without glide bars</th>
<th>Part No. with glide bars</th>
<th>Outer height H₀ [mm]</th>
<th>Part No. installation set</th>
<th>Side part material</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.30</td>
<td>92.31</td>
<td>70</td>
<td>92.50</td>
<td>galvanised steel¹</td>
<td>1242</td>
</tr>
<tr>
<td>95.30</td>
<td>95.31</td>
<td>100</td>
<td>95.50</td>
<td>galvanised steel¹</td>
<td>1244</td>
</tr>
<tr>
<td>99.30</td>
<td>99.31</td>
<td>100</td>
<td>95.50</td>
<td>galvanised steel¹</td>
<td>1246</td>
</tr>
<tr>
<td>97.30</td>
<td>97.31</td>
<td>130</td>
<td>93.50</td>
<td>galvanised steel¹</td>
<td>1248</td>
</tr>
<tr>
<td>93.30</td>
<td>93.31</td>
<td>130</td>
<td>93.50</td>
<td>galvanised steel¹</td>
<td>1250</td>
</tr>
<tr>
<td>94.30</td>
<td>94.31</td>
<td>170</td>
<td>94.50</td>
<td>galvanised steel¹</td>
<td>1252</td>
</tr>
<tr>
<td>94.14550.30</td>
<td>94.14550.31</td>
<td>170</td>
<td>94.50</td>
<td>galvanised steel¹</td>
<td>1254</td>
</tr>
<tr>
<td>96.30</td>
<td>96.31</td>
<td>220</td>
<td>96.50</td>
<td>galvanised steel¹</td>
<td>1256</td>
</tr>
<tr>
<td>98.30</td>
<td>98.31</td>
<td>300</td>
<td>98.50</td>
<td>galvanised steel¹</td>
<td>1258</td>
</tr>
<tr>
<td>90.30</td>
<td>90.31</td>
<td>480</td>
<td>90.50</td>
<td>galvanised steel¹</td>
<td>1260</td>
</tr>
<tr>
<td>91.10 - 91.71¹</td>
<td></td>
<td>48</td>
<td>–</td>
<td>galvanised steel</td>
<td>1241</td>
</tr>
</tbody>
</table>

¹ Optional: 304 stainless steel, material 1.4301 (AISI 304) / 316 stainless steel, material 1.4404 (AISI 316L) / 316 stainless steel, material 1.4571 (AISI 316Ti)

Steel guide trough very tough for heavy-duty applications

Available from stock. Ready to ship in 24 - 48 hrs.*
*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

Steel guide trough | Size overview
Steel guide trough | Individual parts

Components
- Guide trough
- Glide bar
- Installation set
- C-profile

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(B_a)</td>
<td>e-chain® outer width</td>
</tr>
<tr>
<td>(B_i)</td>
<td>e-chain® inner width</td>
</tr>
<tr>
<td>(h_a)</td>
<td>e-chain® outer height</td>
</tr>
<tr>
<td>(H_a)</td>
<td>Trough inner height</td>
</tr>
<tr>
<td>(H_i)</td>
<td>Trough outer height</td>
</tr>
<tr>
<td>(B_w)</td>
<td>Trough inner width</td>
</tr>
<tr>
<td>(B_{aw})</td>
<td>Trough outer width</td>
</tr>
<tr>
<td>(n_{im})</td>
<td>Number of installation sets (left/right)</td>
</tr>
<tr>
<td>(n_{p})</td>
<td>Number of trough sets (left/right)</td>
</tr>
</tbody>
</table>

Steel guide trough | Features

- Guide trough side part, incl. glide strips, without glide bar
- Order text: 16m guide trough without glide bar (16 x 2m sections)

- Guide trough side part, incl. glide strips, with glide bar
- Order text: 16m guide trough with glide bar (16 x 2m sections)

- Installation set basic complete (quantity: guide trough sets + 1)
- Order text: 17 installation sets

- Fixed end module
- Order text: 1 set

Steel guide trough available without and with glide bars

- Side view of trough joint - steel guide troughs - all dimensions except height apply to all sizes

- Installation set for joining and fixing: secure connection without misalignment and with no welding

Quickly and easily assemble the right trough for your application

- Selection of the suitable guide trough according to the e-chain® series and e-chain® width \(B_i\)
- Determine the infed 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 part: 2,000mm). For centre infed, the length of the guide trough is calculated from half the travel length with and half the travel length without the glide bar
- Number and type of the installation set

The quantity of the installation set is calculated from the number of the trough pieces + 1 set:

\[n_{im} = n_{p} + 1\]

- C-profile length according to dimension \(B_{aw}\)

Order example | Examples based on Part No. 94.30 | 94.31

Order example: length of travel 30m - centre fixed for series E4.56.20.300.0 with \(B_a = 239\)

- Guide trough side part, incl. glide strips, without glide bar
- Order text: 16m guide trough without glide bar (16 x 2m sections)
- Order text: 17 installation sets
- Order text: 1 set

Order example: length of travel 30m - centre fixed for series E4.56.20.300.0 with \(B_a = 239\)

- Guide trough side part, incl. glide strips, with glide bar
- Order text: 16m guide trough with glide bar (16 x 2m sections)
- Order text: 17 installation sets
- Order text: 1 set

Calculation - travel centre fixed: half travel length, rounded to full 2m sections = \(X\) m.

Guide trough length without glide bars + 2m guide trough length with glide bars + installation sets (number of trough pieces + 1)
Steel guide trough | Fixed end module
Quick and simple fixing onto the steel guide trough

When installing the mounting brackets at the fixed end, the steel trough normally needs to be drilled to match the mounting bracket hole pattern. With the new fixed end module the holes are pre-prepared so that the 2,000mm long component can be used for centre fed, end fed and even for reverse fed applications.

1. Fast fixation of igus® mounting brackets thanks to prefabricated holes
2. Fast installation of C-profile for strain relief
3. Fast bolting of glide bars

Industries: power plants, coal conveyors, mining, composting plants, raw material storage, gypsum plants, etc.

Series
Part No. | For steel guide trough | For e-chain® series
---|---|---
90.80.01 | 90.30 | 90.31 | 800, 840
92.80.01 | 92.30 | 92.31 | E2.26, 2500, 255, E6.29/R6.29, E61.29
93.80.01 | 93.30 | 93.31 | E2.48, 3500, R8, E4.42/H4.42/R4.42, E4.48L/R4.48L, E6.52/R6.52, E61.52
94.80.01 | 94.30 | 94.31 | E4.56/H4.56/R4.56, 14040/14140/R18840, 14240/14340, E6.62, E4.64L
95.80.01 | 95.30 | 95.31 | E2.38, 2700
96.80.01 | 96.30 | 96.31 | E4.80/H4.80/R4.80, 15050/15150/R19850, E6.80, E61.80
97.80.01 | 97.30 | 97.31 | E4.32/H4.32/R4.32, E4.38L/R4.38L, E6.40/R6.40, E61.40
98.80.01 | 98.30 | 98.31 | E4.112/R4.112, 1640/R1660
99.80.01 | 99.30 | 99.31 | E4.28/R4.28, E4.31/R4.31L, E6.35, E61.35
94.14550.80.01 | 94.14550.30 | 94.14550.31 | 14550*14650/R19950

*Fixed end module available upon request. Please consult igus® for delivery time.

Steel guide trough | One-piece, U-shaped
Special solution for series 10, B15 and 15

For series 10, 15 and B15 one-piece, U-shaped steel guide troughs are available. They have a continuous glide bar for the gliding section of the trough. The guide troughs for the e-chains® with an outer width up to 100mm are available from stock. For wider e-chains® special solutions are possible. For this trough sizes no installation sets are necessary as the guide troughs are made of a single U-profile. The solution for the trough joint is specific to each application. (material: galvanised steel)

Series
Part No. | For e-chain® series | B$_{oa}$ | B$_{or}$ | Weight (kg/m)
---|---|---|---|---
91.10 Trough without glide bar, 2m section | 10.015/15.015/B15.015 | 40.5 | 30 | 1.50
91.11 Trough with glide bar, 2m section | 10.015/15.015/B15.015 | 40.5 | 30 | 2.10
91.20 Trough without glide bar, 2m section | 10.025/15.025/B15.025 | 50.5 | 40 | 1.65
91.21 Trough with glide bar, 2m section | 10.025/15.025/B15.025 | 50.5 | 40 | 2.35
91.30 Trough without glide bar, 2m section | 10.038/15.038/B15.038 | 62.5 | 52 | 1.80
91.31 Trough with glide bar, 2m section | 10.038/15.038/B15.038 | 62.5 | 52 | 2.70
91.40 Trough without glide bar, 2m section | 10.050/15.050/B15.050 | 72.5 | 62 | 1.90
91.41 Trough with glide bar, 2m section | 10.050/15.050/B15.050 | 72.5 | 62 | 3.15
91.50 Trough without glide bar, 2m section | 10.515.5/B15.5 | 89.5 | 79 | 2.15
91.51 Trough with glide bar, 2m section | 10.515.5/B15.5 | 89.5 | 79 | 4.30
91.60 Trough without glide bar, 2m section | 10.615.6/B15.6 | 106.5 | 95 | 2.40
91.61 Trough with glide bar, 2m section | 10.615.6/B15.6 | 106.5 | 95 | 4.60
91.70 Trough without glide bar, 2m section | 10.715.7/B15.7 | 126.5 | 116 | 2.80
91.71 Trough with glide bar, 2m section | 10.715.7/B15.7 | 126.5 | 116 | 5.20

Available from stock. Ready to ship in 24 - 48 hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

www.igus.co.uk/steelguide 1240 More information ➤ www.igus.co.uk/steelguide 1241
For the following igus® series

### E2.1
- E2.26
- E2/000
- E255

### E6.1
- E61.29/E61.29
- E6
- E6.29/R6.29

---

**Steel guide trough | Full set**

**Trough side parts**
- Trough side part, **without** glide bar, 2m section
  - Part No. 92.30:E2 / E44:4 / E45:5
  - Width: 3.80 kg
- Trough side part, **with** glide bar, bolted, 2m section
  - Part No. 92.31:E1 / E44:4 / E45:5
  - Width: 4.90 kg

**Installation sets**
- 1 installation set **without** C-profile
  - Part No. 92.50
  - Weight: 0.34 kg
- 1 installation set **with** C-profile (C-profile length according to dimension $B_{Rd}$)
  - Part No. 92.50:XXX
  - Weight: upon request

---

**Steel guide trough | Components as individual parts**

**Individual parts, trough**
- 1 trough side part, individual, 2m section
  - Part No. 92.31:E1 / E44:4 / E45:5
  - Weight: 3.80 kg
- 1 glide bar, plastic, individual, 2m section
  - Part No. 92.01
  - Weight: 0.75 kg
- 1 glide bar, individual, 2m section + 11 screw sets
  - Part No. 92.20
  - Weight: 0.99 kg
- 1 package with 11 screw sets (for glide bar, 2m section)
  - Part No. 92.21
  - Weight: 0.23 kg

**Individual parts, installation set**
- 1 clamping bracket, individual
  - Part No. 92.51
  - Weight: 0.13 kg
- 1 countersunk-head screw, individual
  - Part No. 92.53 / M6 x 14
- 1 hexagon nut, individual
  - Part No. 92.54 / M6
- 1 hexagon-head screw, individual
  - Part No. 92.55 / M10 x 16
- 1 glide nut, individual
  - Part No. 92.56 / M10
- 1 C-profile, individual (C-profile length according to dimension $B_{Rd}$)
  - Part No. 92.52:XXX
  - Weight: 0.090 kg/m
- Additional option for simple fixing of the e-chain® without drilling
  - Part No. 92.80:01
  - Weight: 7.60 kg

---

**Note:** The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

---

**Steel guide trough | C-profile lengths**

**C-profile length according to dimension $B_{Rd}$**

<table>
<thead>
<tr>
<th>Width</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>225</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>250</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>275</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>300</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>325</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>350</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>375</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
<tr>
<td>400</td>
<td>92.56</td>
<td>3.80 kg</td>
</tr>
</tbody>
</table>

---

**Steel guide trough in use**

---

1242 More information ★ www.igus.co.uk/steelguide 1243
Steel guide trough | 95.30 | 95.31 | Heavy-duty

Trough height: 100mm | Product range

For the following igus® series

E2.1
- E2.38
E2/000
- 2700
E2 R
- R58

Steel guide trough | Full set

Trough side parts, without glide bar, 2m section
95.30. E2/000 / E44® / E45®
Part No. Installation set
n = 0.90kg

Trough side parts, with glide bar, bolted, 2m section
95.31. E2/000 / E44® / E45®
Part No. Installation set
n = 0.60kg

Installation sets

1 installation set without C-profile
95.50.
Part No.
Weight
n = 0.41kg

1 installation set with C-profile (C-profile length according to dimension \( B_{Ri} \))
95.50. XXX
Part No.
Weight
upon request

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 95.50.200

Steel guide trough | Components as individual parts

Individual parts, trough

1 trough side part, individual, 2m section
95.11. E2/000 / E44® / E45®
Part No.
Weight
n = 5.00kg

1 glide bar, plastic, individual, 2m section
92.01
n = 0.75kg

1 glide bar, individual, 2m section + 11 screw sets
92.20
n = 0.98kg

1 package with 11 screw sets (for glide bar, 2m section)
92.21
n = 0.23kg

Individual parts, installation set

1 clamping bracket, individual
95.51
Part No.
Weight
n = 0.76kg

1 countersunk-head screw, individual
92.53 / M6 x 14
n = 0.08kg

1 hexagon nut, individual
92.54 / M6
n = 0.11kg

1 hexagon-head screw, individual
92.55 / M10 x 16
n = 0.09kg

1 glide nut, individual
92.56 / M10
n = 0.06kg

1 C-profile, individual (C-profile length according to dimension \( B_{Ri} \))
92.52. XXX
Part No.
Weight
n = 0.08kg/m

Additional option for simple fixing of the e-chain® without drilling

1 set fixed end module (more information ► Page 1240)
95.80.01
Part No.
Weight
n = 10.00kg

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 95.52.200.E

1) Trough side parts + C-profile - also available in 304 stainless steel, material 1.4301 (AISI 304). Please add index E to the Part No.
2) Trough side parts - also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index E44 to the Part No.
3) Trough side parts - also available in 316L stainless steel, material 1.4571 (AISI 316L). Please add index E44 to the Part No.

www.igus.co.uk/steelguide
Steel guide trough | C-profile lengths

C-profile length according to dimension $B_{\text{pl}}$

<table>
<thead>
<tr>
<th>Part No.</th>
<th>$B_{\text{pl}}$ [mm]</th>
<th>Part No.</th>
<th>$B_{\text{pl}}$ [mm]</th>
<th>Part No.</th>
<th>$B_{\text{pl}}$ [mm]</th>
<th>Part No.</th>
<th>$B_{\text{pl}}$ [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.11</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
</tr>
<tr>
<td>92.53</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
</tr>
<tr>
<td>92.54</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
</tr>
<tr>
<td>92.55</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
<td>95.30</td>
<td>125</td>
</tr>
</tbody>
</table>

Note: Please add the C-profile length XXX as shown on the tables on the right page. Example: 95.50, XXX

Steel guide trough | Components as individual parts

<table>
<thead>
<tr>
<th>Individual parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 trough side part, individual, 2m section</td>
<td>99.11</td>
<td>5.00kg</td>
</tr>
<tr>
<td>1 glide bar, plastic, individual, 2m section</td>
<td>92.01</td>
<td>0.75kg</td>
</tr>
<tr>
<td>1 glide bar, individual, 2m section + 11 screw sets</td>
<td>92.20</td>
<td>0.89kg</td>
</tr>
<tr>
<td>1 package with 11 screw sets (for glide bar, 2m section)</td>
<td>92.21</td>
<td>0.23kg</td>
</tr>
<tr>
<td>Individual parts, installation set</td>
<td>95.51</td>
<td>0.15kg</td>
</tr>
<tr>
<td>1 countersunk-head screw, individual</td>
<td>92.53 / M6 x 14</td>
<td></td>
</tr>
<tr>
<td>1 hexagon nut, individual</td>
<td>92.54 / M6</td>
<td></td>
</tr>
<tr>
<td>1 hexagon-head screw, individual</td>
<td>92.55 / M10 x 16</td>
<td></td>
</tr>
<tr>
<td>1 C-profile, individual (C-profile length according to dimension $B_{\text{pl}}$)</td>
<td>92.52, XXX</td>
<td>0.009kg/m</td>
</tr>
</tbody>
</table>

Additional option for simple fixing of the e-chain® without drilling

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>99.80,01</td>
<td>10.00kg</td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 95.50, XXX

1) Trough side parts + C-profile — also available in 316 stainless steel, material 1.4571 (AISI 316Ti). Please add index C to the Part No.
2) Trough side parts — also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index B to the Part No.
3) Trough side parts — also available in 316 stainless steel, material 1.4571 (AISI 316). Please add index B to the Part No.

For the following igus® series

- E4.1L
- E4.31L/R4.31L
- E4.1
- E4.28/R4.28
- E6.1
- E6.1,35
- E6.3
- E6.35

Note: The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

3D CAD, configurators, service life calculation and more — www.igus.co.uk/steelguide

www.igus.co.uk/steelguide
Steel guide trough | 97.30 | 97.31 | Heavy-duty
Trough height: 130mm | Product range

### For the following igus® series

**E4.1L**
- E4.38L/F4.38L

**E4.1**
- E4.32/H4.32/F4.32

**E6.1**
- E6.1

**E6.40/F6.40**

---

**Note:** The inner width of the guide trough and the C-profile length of the installation set can only be obtained by specifying the mounting bracket you choose. Please call us.

---

### Steel guide trough | Full set

**Trough side parts, without glide bar, 2m section**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width Bm [mm]</th>
<th>Please add the C-profile length XXX as shown on the tables in the right page. Example: 93.50.350</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.30.E1</td>
<td>89.50</td>
<td>1.05kg</td>
</tr>
<tr>
<td>97.30.E4</td>
<td>114.50</td>
<td>1.93kg</td>
</tr>
<tr>
<td>97.31.E1</td>
<td>89.50</td>
<td>1.05kg</td>
</tr>
<tr>
<td>97.31.E4</td>
<td>114.50</td>
<td>1.93kg</td>
</tr>
</tbody>
</table>

**Trough side parts, with glide bar, 2m section**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width Bm [mm]</th>
<th>Please add the C-profile length XXX as shown on the tables in the right page. Example: 93.50.350</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.31.E1</td>
<td>89.50</td>
<td>1.05kg</td>
</tr>
<tr>
<td>97.31.E4</td>
<td>114.50</td>
<td>1.93kg</td>
</tr>
</tbody>
</table>

**Installation sets**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width Bm [mm]</th>
<th>Please add the C-profile length XXX as shown on the tables in the right page. Example: 93.50.350</th>
</tr>
</thead>
<tbody>
<tr>
<td>93.50</td>
<td>60.50</td>
<td>0.84kg</td>
</tr>
</tbody>
</table>

**Note:** The C-profile length according to dimension Bm can be found in the table on the right page. Example: 93.50.350

---

### Steel guide trough | Components as individual parts

**Individual parts, trough**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.11.E1</td>
<td>9.90kg</td>
</tr>
<tr>
<td>92.01</td>
<td>0.75kg</td>
</tr>
<tr>
<td>92.20</td>
<td>0.98kg</td>
</tr>
<tr>
<td>92.21</td>
<td>0.32kg</td>
</tr>
<tr>
<td>93.51</td>
<td>0.20kg</td>
</tr>
</tbody>
</table>

**Individual parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.53</td>
<td>0.69kg</td>
</tr>
<tr>
<td>92.54</td>
<td>0.69kg</td>
</tr>
<tr>
<td>92.56</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

**Additional option for simple fixing of the e-chain® without drilling**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.80.01</td>
<td>11.80kg</td>
</tr>
</tbody>
</table>

---

### Steel guide trough | C-profile lengths

**C-profile length according to dimension Bm**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.52</td>
<td>49.50</td>
<td>11.0kg</td>
</tr>
</tbody>
</table>

**Individual parts, installation set**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.53</td>
<td>49.50</td>
<td>0.69kg</td>
</tr>
<tr>
<td>92.54</td>
<td>49.50</td>
<td>0.69kg</td>
</tr>
<tr>
<td>92.56</td>
<td>49.50</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

---

**Weight**

<table>
<thead>
<tr>
<th>Width [mm]</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>20.00</td>
<td>5.78kg</td>
</tr>
</tbody>
</table>

---

**3D CAD, configurators, service life calculation and more**

[www.igus.co.uk/steelguide](http://www.igus.co.uk/steelguide)
Steel guide trough | C-profile lengths

C-profile length according to dimension $B_{rot}$

<table>
<thead>
<tr>
<th>Width index</th>
<th>$B_{rot}$</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2.48</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.48L/R4.48L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.42/H4.42/R4.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.1,62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.52/E6.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E2.48</td>
<td></td>
<td></td>
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<tr>
<td>3500</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.48L/R4.48L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E4.42/H4.42/R4.42</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.1,62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E6.52/E6.52</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 93.50.350*

Steel guide trough | Components as individual parts

<table>
<thead>
<tr>
<th>Individual parts, trough</th>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 trough side part, individual, 2m section</td>
<td>93.30.1</td>
<td>9.50kg</td>
</tr>
<tr>
<td>1 glide bar, plastic, individual, 2m section</td>
<td>93.01</td>
<td>1.69kg</td>
</tr>
<tr>
<td>1 glide bar, individual, 2m section + 11 screw sets</td>
<td>93.20</td>
<td>2.22kg</td>
</tr>
<tr>
<td>1 package with 11 screw sets (for glide bar, 2m section)</td>
<td>93.21</td>
<td>0.04kg</td>
</tr>
<tr>
<td>Individual parts, installation set</td>
<td>93.51</td>
<td>0.02kg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C-profile, Individual (C-profile length according to dimension $B_{rot}$)</th>
<th>Part No.</th>
<th>Additional option for simple fixing of the e-chain without drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.52.300, XXX (E41)</td>
<td>92.52.300, XXX (E41)</td>
<td>0.090kg/m</td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 92.52.350*

1) Trough side parts – C-profile - also available in 304 stainless steel, material 1.4301 (AISI 304). Please add index E1 to the Part No.
2) Trough side parts – also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index E44 to the Part No.
3) Trough side parts – also available in 316 stainless steel, material 1.4571 (AISI 316Ti). Please add index E46 to the Part No.

Travel up to 195m with the igus® system E4, safely guided in an igus® steel trough
Steel guide trough | C-profile lengths

C-profile length according to dimension $B_a$

<table>
<thead>
<tr>
<th>$B_a$</th>
<th>$B_{E4.64L}$</th>
<th>$B_{E4.4}$</th>
<th>$B_{E4.4/light}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.20</td>
<td>50.0</td>
<td>45.0</td>
<td>42.0</td>
</tr>
<tr>
<td>0.25</td>
<td>55.0</td>
<td>50.0</td>
<td>47.0</td>
</tr>
<tr>
<td>0.30</td>
<td>60.0</td>
<td>55.0</td>
<td>52.0</td>
</tr>
<tr>
<td>0.35</td>
<td>65.0</td>
<td>60.0</td>
<td>57.0</td>
</tr>
<tr>
<td>0.40</td>
<td>70.0</td>
<td>65.0</td>
<td>62.0</td>
</tr>
<tr>
<td>0.45</td>
<td>75.0</td>
<td>70.0</td>
<td>67.0</td>
</tr>
<tr>
<td>0.50</td>
<td>80.0</td>
<td>75.0</td>
<td>72.0</td>
</tr>
<tr>
<td>0.55</td>
<td>85.0</td>
<td>80.0</td>
<td>77.0</td>
</tr>
<tr>
<td>0.60</td>
<td>90.0</td>
<td>85.0</td>
<td>82.0</td>
</tr>
<tr>
<td>0.65</td>
<td>95.0</td>
<td>90.0</td>
<td>87.0</td>
</tr>
<tr>
<td>0.70</td>
<td>100.0</td>
<td>95.0</td>
<td>92.0</td>
</tr>
<tr>
<td>0.75</td>
<td>105.0</td>
<td>100.0</td>
<td>97.0</td>
</tr>
<tr>
<td>0.80</td>
<td>110.0</td>
<td>105.0</td>
<td>102.0</td>
</tr>
<tr>
<td>0.85</td>
<td>115.0</td>
<td>110.0</td>
<td>107.0</td>
</tr>
<tr>
<td>0.90</td>
<td>120.0</td>
<td>115.0</td>
<td>112.0</td>
</tr>
<tr>
<td>0.95</td>
<td>125.0</td>
<td>120.0</td>
<td>117.0</td>
</tr>
<tr>
<td>1.00</td>
<td>130.0</td>
<td>125.0</td>
<td>122.0</td>
</tr>
<tr>
<td>1.05</td>
<td>135.0</td>
<td>130.0</td>
<td>127.0</td>
</tr>
<tr>
<td>1.10</td>
<td>140.0</td>
<td>135.0</td>
<td>132.0</td>
</tr>
<tr>
<td>1.15</td>
<td>145.0</td>
<td>140.0</td>
<td>137.0</td>
</tr>
<tr>
<td>1.20</td>
<td>150.0</td>
<td>145.0</td>
<td>142.0</td>
</tr>
<tr>
<td>1.25</td>
<td>155.0</td>
<td>150.0</td>
<td>147.0</td>
</tr>
<tr>
<td>1.30</td>
<td>160.0</td>
<td>155.0</td>
<td>152.0</td>
</tr>
<tr>
<td>1.35</td>
<td>165.0</td>
<td>160.0</td>
<td>157.0</td>
</tr>
<tr>
<td>1.40</td>
<td>170.0</td>
<td>165.0</td>
<td>162.0</td>
</tr>
<tr>
<td>1.45</td>
<td>175.0</td>
<td>170.0</td>
<td>167.0</td>
</tr>
<tr>
<td>1.50</td>
<td>180.0</td>
<td>175.0</td>
<td>172.0</td>
</tr>
<tr>
<td>1.55</td>
<td>185.0</td>
<td>180.0</td>
<td>177.0</td>
</tr>
<tr>
<td>1.60</td>
<td>190.0</td>
<td>185.0</td>
<td>182.0</td>
</tr>
<tr>
<td>1.65</td>
<td>195.0</td>
<td>190.0</td>
<td>187.0</td>
</tr>
<tr>
<td>1.70</td>
<td>200.0</td>
<td>195.0</td>
<td>192.0</td>
</tr>
<tr>
<td>1.75</td>
<td>205.0</td>
<td>200.0</td>
<td>197.0</td>
</tr>
<tr>
<td>1.80</td>
<td>210.0</td>
<td>205.0</td>
<td>202.0</td>
</tr>
<tr>
<td>1.85</td>
<td>215.0</td>
<td>210.0</td>
<td>207.0</td>
</tr>
<tr>
<td>1.90</td>
<td>220.0</td>
<td>215.0</td>
<td>212.0</td>
</tr>
<tr>
<td>1.95</td>
<td>225.0</td>
<td>220.0</td>
<td>217.0</td>
</tr>
<tr>
<td>2.00</td>
<td>230.0</td>
<td>225.0</td>
<td>222.0</td>
</tr>
</tbody>
</table>

Steel guide trough | Full set

Trough side parts - also available in 316 stainless steel, material 1.4571 (AISI 316Ti). Please add index D to the Part No.

1) Trough side parts - C-profile - also available in 304 stainless steel, material 1.4301 (AISI 304). Please add index D to the Part No.

2) Trough side parts - also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index E44 to the Part No.

3) Trough side parts - also available in 316 stainless steel, material 1.4571 (AISI 316F). Please add index E45 to the Part No.

Note: The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

Steel guide trough | Components as individual parts

Individual parts, installation set

Part No. | Weight |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>94.11.E</td>
<td>7.35kg</td>
</tr>
<tr>
<td>93.01</td>
<td>1.69kg</td>
</tr>
<tr>
<td>93.20</td>
<td>2.21kg</td>
</tr>
<tr>
<td>93.21</td>
<td>0.54kg</td>
</tr>
</tbody>
</table>

Additional options for simple fixings of the e-chain® without drilling

Part No. | Weight |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>94.00.E</td>
<td>14.70kg</td>
</tr>
</tbody>
</table>
Steel guide trough | C-profile lengths

C-profile length according to dimension \( B_{Ri} \)

<table>
<thead>
<tr>
<th>Width ( B_{Ri} )</th>
<th>Part No.</th>
<th>Installation set</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>91</td>
<td>94.14550.30</td>
<td>0.6kg</td>
</tr>
<tr>
<td>26</td>
<td>92</td>
<td>94.14550.31</td>
<td>0.6kg</td>
</tr>
<tr>
<td>30</td>
<td>93</td>
<td>94.14550.30</td>
<td>0.6kg</td>
</tr>
<tr>
<td>35</td>
<td>94</td>
<td>94.14550.31</td>
<td>0.6kg</td>
</tr>
</tbody>
</table>

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 94.50.350

Steel guide trough | Full set

**Fixed end module available upon request. Please consult igus for delivery time.

For the following igus® series

- **E4/light**
  - FL40 x 4
  - FL40 x 5
  - FL40 x 6
  - FL40 x 7

Options with sideboard mounting angles for extremely demanding heavy-duty applications.

The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket you choose. Please call us.

Trough side part + C-profile - also available in 304 stainless steel, material 1.4301 (AISI 304). Please add index E45 to the Part No.

1) Trough side parts + C-profile - also available in 304 stainless steel, material 1.4301 (AISI 304). Please add index E45 to the Part No.
2) Trough side parts - also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index E44 to the Part No.
3) Trough side parts - also available in 316 stainless steel, material 1.4571 (AISI 316Ti). Please add index E44 to the Part No.

**Please add the C-profile length XXX as shown on the tables on the right page. Example: 94.50.350

Additional option for simple fixing of the e-chain® without drilling

1 set fixed end module (more information Page 1240)

94.14550.80.01**

System E4 with extension links and high fill weight - long travel application on-board West Navigator drill ship.

1254 More information ► www.igus.co.uk/steelguide
**Steel guide trough | C-profile lengths**

C-profile length according to dimension $B_a$

<table>
<thead>
<tr>
<th>Width $B_a$ [mm]</th>
<th>$B_{a_{80}}$</th>
<th>Part No.</th>
<th>Part No. Installation set</th>
<th>$B_{a_{80}}$</th>
<th>Part No.</th>
<th>Part No. Installation set</th>
<th>$B_{a_{80}}$</th>
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</tbody>
</table>

**Steel guide trough | Full set**

Trough side parts

- Trough side part, without glide bar, 2m section
- Trough side part, with glide bar, bolted, 2m section

Installation sets

- 1 installation set with C-profile
  - 96.50 [E45] = 0.73 kg
- 1 installation set with C-profile length according to dimension $B_a$
  - 96.50.XXX = upon request

**Steel guide trough | Components as individual parts**

Individual parts, trough

- 1 trough side part, individual, 2m section
  - 93.01 = 1.69 kg
- 1 glide bar, plastic, individual, 2m section
  - 93.20 = 2.20 kg
- 1 glide bar, individual, 2m section + 11 screw sets
  - 93.21 = 0.54 kg

Individual parts, installation set

- 1 clamp bracket, individual
  - 96.51 = 0.31 kg
- 1 countersunk-head screw, individual
  - 92.53 / M6 x 14
- 1 hexagon nut, individual
  - 92.54 / M6
- 1 hexagon-head screw, individual
  - 92.55 / M10 x 16
- 1 glide nut, individual
  - 92.56 / M10

C-profile, individual (C-profile length according to dimension $B_a$)

- 92.52.XXX = 0.09 kg/m

Additional option for simple fixing of the e-chain® without drilling

- 1 set fixed end module (more information Page 1240)
  - 96.80.01 = 0.83 kg

*Note: The inner width of the guide trough and the C-profile length of the installation set can offer according to the mounting bracket you choose. Please call.*

1) Trough side part - C-profile - also available in AISI stainless steel, material 1.4301 (AISI 304). Please add index E to the Part No.
2) Trough side part - also available in 316 stainless steel, material 1.4404 (AISI 316L). Please add index E44 to the Part No.
3) Trough side part - also available in 316 stainless steel, material 1.4571 (AISI 316TI) Please add index E45 to the Part No.
Steel guide trough | Heavy-duty
Trough height: 300mm | Product range

For the following igus® series
E4.1
E4.112/R4.112
E4/light
1640/R1608

Options: with reinforced mounting angles for extremely demanding heavy-duty applications

Note: The inner width of the guide trough and the C-profile length of the installation set can differ according to the mounting bracket choice. Please call us.

Steel guide trough | Full set
Trough side parts, without guide bar, 2m section
98.30.15 E4/44/5 E4/55
Weight
17.30kg

Trough side parts, with guide bar, bolted, 2m section
98.31.15 E4/44/5 E4/55
Weight
19.50kg

Installation sets
1 installation set without C-profile
98.50
Weight
1.16kg

1 installation set with C-profile
98.50.XXX
Weight
upon request

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 98.50.350

Steel guide trough | Components as individual parts
Individual parts, trough
98.11.15 E4/44/5 E4/55
Weight
17.30kg

1 guide bar, plastic, individual, 2m section
93.01
Weight
1.69kg

1 guide bar, individual, 2m section + 11 screw sets
93.20
Weight
2.22kg

1 package with 11 screw sets (for guide bar, 2m section)
93.21
Weight
0.54kg

Individual parts, installation set
1 clamping bracket, individual
98.51
Weight
0.92kg

1 countersunk-head screw, individual
92.05 / M8 x 20

1 hexagon nut, individual
92.04 / M8

1 hexagon-head screw, individual
92.55 / M10 x 16

1 glide nut, individual
92.56 / M10

C-profile, individual (C-profile length according to dimension Bc)
92.52.XXX E4
Weight
0.00kg/m

Additional option for simple fixing of the e-chain® without drilling
Part No.
98.80.01
Weight
34.60kg

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 92.52.375.E

1) Trough side parts + C-profile — also available in 304 stainless steel, material 1.4301 (A4S 304). Please add index E to the Part No.
2) Trough side parts — also available in 316 stainless steel, material 1.4404 (AIS 316L). Please add index E4 to the Part No.
3) Trough side parts — also available in 316 stainless steel, material 1.4571 (AISI 316L). Please add index E45 to the Part No.

1259 More information ► www.igus.co.uk/steelguide
Steel guide trough | Heavy-duty

**Trough height:** 480mm | **Product range**

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**E4.1**
- **800**
- **840**

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**For the following igus® series**

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**Option:** with reinforced mounting angles for extremely demanding heavy-duty applications

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**Note:** The inner width of the guide trough and the C-profile length of the installation set can only be delivered according to the mounting bracket you choose. Please call us.

---

**Steel guide trough | Full set**

**Trough side parts**
- without glide bar, 2m section
- with glide bar, bolted, 2m section

**Installation sets**
- 1 installation set with C-profile
- 1 installation set with C-profile (C-profile length according to dimension $B_{t}$)

---

**Steel guide trough | Components as individual parts**

**Individual parts, trough**
- 1 trough side part, individual, 2m section
- 1 glide bar, plastic, individual, 2m section
- 1 glide bar, individual, 2m section + 11 screw sets
- 1 package with 11 screw sets (for glide bar, 2m section)

**Individual parts, installation set**
- 1 clamping bracket, individual

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**Steel guide trough | C-profile lengths**

**C-profile length according to dimension $B_{t}$**

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**Steel guide trough | C-profile lengths according to dimension $B_{t}$**

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**Assembly of an E4 e-chain® series 800 in a steel guide trough**

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**www.igus.co.uk/steelguide**

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**1260 More information ► www.igus.co.uk/steelguide**

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Other guide trough systems

- Steel support tray
- Aluminium support tray
- Guidefast
- Guidelite
- Tubular trough
- Snap-in trough
Steel support tray | Introduction | Advantages

Noise- and wear-reducing: safe guidance of the lower run of your e-chain® for standard applications

Flexible one-piece solution: for a large selection of igus® E2/000 and E4.1 e-chains®

Simple design: easy mounting to all types of profiles and wall brackets

Complete system: ready to install

Lightweight material: available in the colour of your choice

For easy support of the lower run - steel support tray

Simple one-piece steel support trays for the e-chain® lower run to your requirements and specification. Your width, height and colour - we supply the fitting e-chain® together with the support tray system, ready to install onto your machine or application. Save time on procurement and design.

- Complete system, ready to install
- Avoids costly custom designs
- Easy installation onto your machine, on profiles or wall brackets
- igus® steel support tray - available in 2 types and 4 options
- Available from stock for many e-chain® widths

Steel support tray | Selection table

<table>
<thead>
<tr>
<th>Part No.</th>
<th>e-chains®</th>
<th>Bp</th>
<th>Bm</th>
<th>Material</th>
<th>Page</th>
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</thead>
<tbody>
<tr>
<td>Type 01 for series:</td>
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</table>

Type 02 for series:

| S9.020/021.10.XXXX.0 | E2.48 | 167 | 156 | steel, black | 1268 |
| S9.020/021.15.XXXX.0 | E2.48 | 217 | 206 | steel, black | 1268 |
| S9.020/021.20.XXXX.0 | E2.48 | 267 | 256 | steel, black | 1268 |
| S9.020/021.25.XXXX.0 | E2.48 | 317 | 306 | steel, black | 1268 |

*B depends on width index

Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.
Steel support tray | Type 01 | Product range

Steel support tray | Type 01

1. Steel support tray type 01 - standard length from stock 1m and 2m
2. All connection rails 975mm
3. Wall bracket for easy attachment to your application

Steel support tray | Type 01 | Installation dimensions

Installation dimensions and mounting holes

Steel support tray - Type 01

Wall bracket - Type 01

Order key

For standard length of 1m

- Steel support tray
- Without wall bracket
- Width e-chain®
- Length 1,000mm
- Colour, powdered black

Order key

For standard length of 2m

- Steel support tray
- With wall bracket
- Width e-chain®
- Length 2,000mm
- Colour, powdered black

Type 01 | Series S9.010. | S9.011. | Product range

<table>
<thead>
<tr>
<th>For system</th>
<th>Suitable for the following series</th>
<th>Width</th>
<th>B1m</th>
<th>B2m</th>
<th>Part No. support tray, single</th>
<th>Part No. with wall bracket, single</th>
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<td>S9.011.10.000.0</td>
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</table>

Please replace XXXX by the standard lengths 1,000 or 2,000mm available from stock.

The lengths and widths mentioned here are available from stock in the standard black colour.

For other lengths, widths and colours, please contact us.

More information: [www.igus.co.uk/supporttray](http://www.igus.co.uk/supporttray)
**Steel support tray | Type 02 | Product range**

Standard length from stock 1m and 2m

For the following igus® series

**E2.1**
- E2.48
- E2/000
- E4/300/3450/3480/3500

**E4.1L**
- E4.48L/R4.48L
- E4.6L

**E4.1**
- E4.42/H4.42/R4.42
- E4.56/H4.56/R4.56
- E4.80/H4.80/R4.80

**E4/light**
- 14040/14140
- 14240/14340
- 14550/14650/19050
- 15050/15150/R19850
- 15250/15350

**E6.1**
- E6.62
- E6.80

**E6**
- E6.56
- E6.62
- E6.80

**Type 02 | Series S9.020. | S9.021. | Product range**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No. support tray, single</th>
<th>Part No. with wall bracket, single</th>
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</table>

Wall bracket - Type 02

**Order key**

For standard length of 1m

- Steel support tray
- Without wall bracket
- Width e-chain®
- Length 1,000mm
- Colour, powdered black

For standard length of 2m

- Steel support tray
- With wall brackets
- Width e-chain®
- Length 2,000mm
- Colour, powdered black

Please replace XXXX by the standard lengths 1,000 or 2,000mm available from stock.

The lengths and widths mentioned here are available from stock in the standard black colour.

For other lengths, widths and colours, please contact us.

1268 More information ► www.igus.co.uk/supporttray
The flexible construction kit to support the lower run - aluminium support tray

The design of this aluminium support tray emulates the igus® aluminium SuperTrough. This modular construction kit covers the standard sizes of our e-chains®. Because of its flexible width adjustment using installation sets with C-profiles, the aluminium support tray is used with various e-chains® series and widths. A support trough consists of 2 trough side pieces with 2m length. Standard installation sets can be used, just as for the aluminium SuperTrough. 

- Corrosion-resistant, seawater-resistant aluminium profile
- Wear-reducing glide strips integrated as standard
- Quiet movement of the e-chain® with optional silencer profile
- Simple assembly on flexible width C-profiles with basic clamps
- e-chain® easily connects to aluminium support tray using plastic fixed end modules
- Open guide trough design, debris can fall through
- Conductivity according to DIN EN 61537 - as standard
Aluminium support tray | Individual parts
Components, guide troughs and components, mounting kits

Components
1 Trough side parts, aluminium, 2m
2 Glide strip, plastic, 2m
3 Optional: rubber silencer profile

Components, installation set
1) Bottom clamp, aluminium
2) C-profile, galvanised steel
3) Allen wrench
4) Sliding nut

Aluminium support tray | Features
Simple fastening with basic bottom clamp and C-profile
Wear-reducing glide strips
Noise-reducing with silencer profile option
Simple connection to the e-chain® with the fixed end module

Order example | Based on Part No. 9AT.35.SLA

Order key
guide trough 1
9AT.35.SLA
Trough system
Aluminium support tray
Outer height
With glide strip
With silencer profile

Order key
installation set 2
960AT.30.125
Installation set
Size of bottom clamp
Length of C-profile

Aluminium support tray | Fixed end module
Quick and simple fixing onto the aluminium support tray

Fixed end module - to attach the e-chain® into the aluminium support tray
1 Mounting bracket attachment on the aluminium support tray without drilling
2 Fixed end module is clamped to the trough
3 Save installation time
4 Minimise errors from drilling holes
5 Stainless and cost-effective

Fixed end module | Fixed end clamp | Product range

<table>
<thead>
<tr>
<th>Series</th>
<th>For aluminium support tray</th>
<th>For e-chain® series</th>
<th>From inner width</th>
<th>Mounting bracket</th>
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<tr>
<td>971.80.4</td>
<td>9AT.35.SL</td>
<td>9AT.35.SLA</td>
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<td>9AT.35.SLA</td>
<td>E4.32/H4.32/R4.32, E4.38/L/R4.38, E6.40/R6.40, E61.40</td>
<td>.06</td>
</tr>
</tbody>
</table>

More series available upon request


Available from stock. Ready to ship in 24 - 48hrs.*

* The delivery times indicated correspond to the average time until the ordered goods are dispatched.
### Aluminium support tray | 9AT.35.SL | 9AT.35.SLA

**Trough height:** 35mm  |  **Product range**

---

#### For the following igus® series

- **E2.1**
  - E2.26
  - E2/000
  - E2/2000
  - E2/2000/2500/2450/2480
  - E2/2600/2700/2650/2680

- **E4.1L**
  - E4.31L/R4.31L
  - E4.38L/R4.38L

- **E4.1**
  - E4.28/R4.28
  - E4.32/H4.32/R4.32

- **E6.1**
  - EF61.29/E61.129
  - E61.35
  - E61.40

- **E6**
  - E6.29
  - E6.35
  - E6.40/R6.40

---

### C-profile lengths

For aluminium support tray with fixed end module (depending to dimension $B_a$, bottom clamp attached inwards)

#### E6.29/R6.29

<table>
<thead>
<tr>
<th>Width</th>
<th>$B_a$ [mm]</th>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>272</td>
<td>90 960AT.30.150</td>
<td>250</td>
<td>270 960AT.325</td>
</tr>
<tr>
<td>270</td>
<td>90 960AT.30.150</td>
<td>250</td>
<td>270 960AT.325</td>
</tr>
<tr>
<td>268</td>
<td>90 960AT.30.150</td>
<td>250</td>
<td>270 960AT.325</td>
</tr>
<tr>
<td>266</td>
<td>90 960AT.30.150</td>
<td>250</td>
<td>270 960AT.325</td>
</tr>
</tbody>
</table>

---

### Aluminium support tray | Full set

Trough side parts - consisting of part 1, 2, 3  |  Part No. | Weight [kg]

- 1 installation set without C-profile 960AT.30.150
- 1 installation set with C-profile (C-profile length according to dimension $B_a$) 960AT.30.XXX

*Please add the C-profile length XXX as shown on the tables on the right page. Example: 960AT.30.150

---

### Aluminium support tray | Components as individual parts

#### Individual parts, trough

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9AT.35.11</td>
<td>1.673kg</td>
</tr>
</tbody>
</table>

#### Individual parts, profile

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>75.01</td>
<td>0.062kg</td>
</tr>
<tr>
<td>75.40</td>
<td>0.031kg</td>
</tr>
<tr>
<td>92.52.XXX</td>
<td>0.080kg</td>
</tr>
<tr>
<td>92.52.XXX</td>
<td>0.080kg</td>
</tr>
</tbody>
</table>

---

#### Additional option for simple fastening of the e-chain® without drilling

- Part No. 971.80/4 | 972.80/4

---

#### Installation sets

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight [kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9AT.35.SL</td>
<td>3.470kg</td>
</tr>
<tr>
<td>9AT.35.SLA</td>
<td>3.716kg</td>
</tr>
</tbody>
</table>

---

For the following igus® series:

- C-profile also available in 304 stainless steel. Material 1.4301 (AISI 304). Please add index
Energy supply for crane girders and indoor cranes - guidefast

- The guidefast guide trough is mounted on the side of the crane girder so that welded brackets are not necessary.
- Save up to 80% installation time compared to standard trough systems.
- Cost-effective modular solution.
- Fits virtually any standard crane girder.
- 2 versions of brackets with integrated strain relief for static cable runs on the crane girder.
- Suitable for any wall-mounted application - not only cranes.
- Easy to install due to preassembled hole patterns of e-chain® brackets.
- Standard material: galvanised steel.
- Optional: 304 stainless steel, material 1.4301 (AS1 304) or black powder coated.
- Conductivity according to DIN EN 61537: as standard with special connector.
- Long-term tested to withstand vibration and tough environments.

Typical industries and applications
- Crane manufacturers (mainly indoor cranes).
- Applications where wall-mounted installation of the guide trough is beneficial.

Quick assembly:
- fast and easy fixing using clamping rails.

Modular:
- one-piece steel trough with 2m standard length.

Wear-reducing:
- glide bar for centre infeed installations.

Simple:
- Trough section interfaces are fastened with clips, eliminating sharp edges.

Options:
- 2 versions of trough brackets with integrated strain relief.

guidefast guide trough | Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>For e-chain® series</th>
<th>B</th>
<th>Complete width</th>
<th>Material</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
<td>B[D [mm]]</td>
<td>Bw [mm]</td>
<td>Complete width [mm]</td>
<td>Material</td>
<td>Page</td>
</tr>
<tr>
<td>GF91.30.025.2000</td>
<td>1500.025.</td>
<td>42.5</td>
<td>81</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF91.30.050.2000</td>
<td>1500.050.</td>
<td>67.5</td>
<td>106</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF92.30.03.</td>
<td>E2.26.038.</td>
<td>58</td>
<td>96.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF92.30.05.</td>
<td>E2.26.057.</td>
<td>77</td>
<td>115.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF92.30.07.</td>
<td>E2.26.077.</td>
<td>97</td>
<td>135.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF92.30.09.</td>
<td>2500.09.</td>
<td>109</td>
<td>145.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF92.30.10.</td>
<td>2500.10.</td>
<td>123</td>
<td>161.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF95.30.05.</td>
<td>E2.38.050.</td>
<td>70</td>
<td>108.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF95.30.07.</td>
<td>E2.38.075.</td>
<td>95</td>
<td>133.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
<tr>
<td>GF95.30.10.</td>
<td>E2.38.100.</td>
<td>120</td>
<td>158.5</td>
<td>galvanised steel*</td>
<td>1279</td>
</tr>
</tbody>
</table>

*Standard material: galvanised steel. Optional: 304 stainless steel, material 1.4301 (AS1 304) or black powder coated.

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
guidefast guide trough | Individual parts

Standard length from stock 2m

For the following igus® series

- E2.1
  - E2.26
  - E2.38
- E2/000
  - 1500
  - 2500
  - 2700

Components, guidefast set

1. Trough profile, 2m section
2. Glide bar, polymer, 2m section, optional
3. Clip connector, Part No. 908.467
4. Clamping blocks, Part No. G9.2.10

Components - trough bracket

- Version 01 - short trough bracket
- Version 02, long trough bracket
- Version 01 - short trough bracket

| Ba = e-chain® outer width | Bi = e-chain® inner width | ha = e-chain® outer height | Btr = Trough inner width |

2 Versions of trough brackets with integrated strain relief

- Version 01 - short trough bracket
- Version 02 - long trough bracket

Guidefast guide trough with glide bar, short trough bracket, standard length from stock 2m

Guidefast guide trough without glide bar, short trough bracket, standard length from stock 2m

Guidefast guide trough with glide bar, short trough bracket, standard length from stock 2m

Guidefast guide trough without glide bar, short trough bracket, standard length from stock 2m

Guidefast guide trough | Product range

Trough profile | Product range | Installation dimensions

<table>
<thead>
<tr>
<th>Trough profile</th>
<th>Trough profile without glide bar</th>
<th>Trough profile with glide bar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(set with clips)</td>
<td>(set with clips)</td>
</tr>
</tbody>
</table>

For e-chain® series

- 1500, 025
  - 1500, 050
  - E2.26, 050
  - E2.26, 077
  - E2.26, 097
  - E2.26, 107
  - E2.38, 050
  - E2.38, 075
  - E2.38, 100

<table>
<thead>
<tr>
<th>Trough profile</th>
<th>Ba [mm]</th>
<th>A [mm]</th>
<th>B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>GF91.30.025</td>
<td>42.5</td>
<td>61</td>
<td>81</td>
</tr>
<tr>
<td>GF91.30.050</td>
<td>67.5</td>
<td>61</td>
<td>106</td>
</tr>
<tr>
<td>GF92.30.03.000</td>
<td>58</td>
<td>75</td>
<td>97</td>
</tr>
<tr>
<td>GF92.30.05.000</td>
<td>77</td>
<td>75</td>
<td>115.5</td>
</tr>
<tr>
<td>GF92.30.07.000</td>
<td>97</td>
<td>75</td>
<td>135.5</td>
</tr>
<tr>
<td>GF92.31.09.000</td>
<td>105</td>
<td>75</td>
<td>148</td>
</tr>
<tr>
<td>GF92.31.10.000</td>
<td>123</td>
<td>75</td>
<td>161.5</td>
</tr>
<tr>
<td>GF93.30.05.000</td>
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<td>105</td>
<td>108.5</td>
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<tr>
<td>GF93.30.07.000</td>
<td>95</td>
<td>105</td>
<td>133.5</td>
</tr>
<tr>
<td>GF93.30.10.000</td>
<td>120</td>
<td>105</td>
<td>158.5</td>
</tr>
</tbody>
</table>

Standard material: galvanised steel. Optional: 304 stainless steel, material 1.4301 (AISI 304) or black powder coated

Trough brackets with integrated strain relief | 2 versions | Product range | Installation dimensions

For

- Trough profile
- guidefast trough bracket short version 01 (set with clamping blocks)
- guidefast trough bracket long version 02 (set with clamping blocks)

<table>
<thead>
<tr>
<th>Trough profile</th>
<th>guidefast trough bracket short version 01 (set with clamping blocks)</th>
<th>guidefast trough bracket long version 02 (set with clamping blocks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GF91.30.025</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF91.30.050</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF92.30.03.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF92.30.05.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF92.30.07.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF92.31.09.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF92.31.10.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF93.30.05.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF93.30.07.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
<tr>
<td>GF93.30.10.000</td>
<td>GF9.2.12</td>
<td>GF9.2.11</td>
</tr>
</tbody>
</table>

Standard dimensions

- B: 58
- Ri: 95
- A: 133.5

More information | www.igus.co.uk/guidefast

3D CAD, configurators, service life calculation and more | www.igus.co.uk/guidefast
**Guidefast Guide Trough**

**Length Calculation**

Standard length from stock 2m

**Application**

Guidefast - easy attachment to the crane girder using welded bolts or nut/thread, here with version 2 long trough bracket

---

Order example for end infeed, travel = 9.5m / guide trough 10m

- Trough profile set **without** glide bar (incl. 5 clip connectors)
- Order text: 10m = 5 x 2m sections trough profile, without glide bar
- Trough brackets (incl. 11 clamping blocks, "long" Version 02)
- Order text: 11 x trough brackets

**GF93.30.07.2000**

**GF9.2.11**

---

10m = 5 x GF93.30.07.2000 + 11 x GF9.2.11

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More information ➤ [www.igus.co.uk/guidefast](http://www.igus.co.uk/guidefast)

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3D CAD, configurators, service life calculation and more ➤ [www.igus.co.uk/guidefast](http://www.igus.co.uk/guidefast)
guidelite guide trough | Introduction | Advantages

Long travels up to 150m, quick and cost-effective - igus® guidelite

A construction kit system primarily for slow applications with low cycle duty. The lower run of the igus® e-chain® is guided in two L-shaped guide rails made from Glass Fibre Reinforced Plastic (GFRP). The upper run of the e-chain® is partially guided by angle brackets that are installed at distances of one metre. One option to obtain the correct width is to install clip-on spacers (Version 01) between the retainers. This greatly simplifies the installation since no further adjustments are needed. Another option, which facilitates a greater range of widths, is to mount the guide angle brackets on a C-profile (Version 02).

- Time saving through fast assembly
- Very lightweight polymer components - quieter than troughs made from steel
- Cost-effective
- Corrosion-resistant
- Gliding application: max. speed 1m/s
- Unsupported application (guidelite as support tray): max. speed 5m/s (higher speeds can be attained. Please contact us for details)
- Construction kit solution, from stock

Typical industries and applications
- Irrigation and watering systems
- For applications with low duty cycles, low speed and fill weight
- As cost-effective support tray for unsupported applications

Selection table

<table>
<thead>
<tr>
<th>Series</th>
<th>For e-chain® series</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>guidelite version 01 - installation set with spacer, standard fixed width due to clip-on spacer, no adjustments needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9GL.65.450.00</td>
<td>E2.48 • 2500 • 2700 • 3500</td>
<td>1284</td>
</tr>
<tr>
<td>9GL.65.450.00</td>
<td>E4.21 • E4.28 • E4.32</td>
<td></td>
</tr>
</tbody>
</table>

| guidelite version 02 - installation set with C-profile guide angle brackets are assembled on C-profile for a larger range of widths |
| 9GL.64.50.LLL | E2.26 • E2.38 • 1500 • 2500 • 2700 • 3500 | 1286 |
| 9GL.64.50.LLL | E4.21 • E4.28 • E4.32 | |

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
guidelite | Version 01 | Individual parts

Installation set with spacer - fixed width with clip-on spacers

Feed module:
Installation set:
Please use the feed module guidelite. Centre infeed is only used with rol e-chains

Feed module that guides the upper run of the e-chain
Set plastic guide rails (left and right) in specified lengths (standard: 2m)
Installation set with spacer for a fixed width, consisting of 2 x plastic guide rails + 1 x spacer
Specification

Components - version 01
1 Angle brackets
2 Plastic guide rail
3 Crossbar

A = BB + 130
B = BB + 72 (Bb + 1-4)

guidelite | Version 01 | Product range

Installation set with crossbar - for a fixed width

<table>
<thead>
<tr>
<th>Part No. including</th>
<th>For width index spacer E2.1 series</th>
<th>For E2/000 / E4.1 series</th>
<th>For rol E2/000 series</th>
<th>Length of spacer BB [mm]</th>
<th>Outer angle bracket distance A [mm]</th>
<th>Inner angle bracket distance B [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>9GL.64.50.45.05</td>
<td>2500.R</td>
<td>3500.R</td>
<td>2500.R</td>
<td>50</td>
<td>180</td>
<td>122</td>
</tr>
<tr>
<td>9GL.64.50.45.06</td>
<td>2700.R</td>
<td>3500.R</td>
<td>2700.R</td>
<td>75</td>
<td>205</td>
<td>147</td>
</tr>
<tr>
<td>9GL.64.50.45.10</td>
<td>3000.R</td>
<td>3500.R</td>
<td>3000.R</td>
<td>75</td>
<td>150</td>
<td>222</td>
</tr>
<tr>
<td>9GL.64.50.45.14</td>
<td>3500.R</td>
<td>3500.R</td>
<td>3500.R</td>
<td>100</td>
<td>230</td>
<td>172</td>
</tr>
<tr>
<td>9GL.64.50.45.16</td>
<td></td>
<td>3500.R</td>
<td>3500.R</td>
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<td>255</td>
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<td>9GL.64.50.45.17</td>
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<td>3500.R</td>
<td>3500.R</td>
<td>150</td>
<td>280</td>
<td>222</td>
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<tr>
<td>9GL.64.50.45.20</td>
<td></td>
<td>3500.R</td>
<td>3500.R</td>
<td>175</td>
<td>305</td>
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<tr>
<td>9GL.64.50.45.06</td>
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<td>3500.R</td>
<td>3500.R</td>
<td>200</td>
<td>330</td>
<td>272</td>
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<tr>
<td>9GL.64.50.45.05</td>
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<td>3500.R</td>
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<td>9GL.64.50.45.07</td>
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<td>3500.R</td>
<td>75</td>
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<td>147</td>
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<tr>
<td>9GL.64.50.45.06</td>
<td></td>
<td>3500.R</td>
<td>3500.R</td>
<td>50</td>
<td>180</td>
<td>122</td>
</tr>
<tr>
<td>9GL.64.50.45.06</td>
<td></td>
<td>3500.R</td>
<td>3500.R</td>
<td>65</td>
<td>195</td>
<td>137</td>
</tr>
</tbody>
</table>

Note: Dimension B (inner angle bracket distance) must always be 1 to 4mm larger than Ba of the e-chain®

Ideal for outdoor applications - UV-resistant, corrosion-free, allows dirt to pass through

More information ➤ www.igus.co.uk/guidelite

guidelite | Version 01 | 3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/guidelite
**guidelite** | **Version 02** | **Individual parts**

Installation set with C-profile | Assembly of guide angles brackets on C-profiles

---

**Feed module:**

- **1286**: B
- **E2.26**: 1500
- **E2.38**: 2700
- **E4.21**: 3500

Components - version 02

- ① Angle brackets
- ② Plastic guide rail
- ③ Screw set M8
- ④ C-profile

- Ba = e-chain® outer width
- Bi = e-chain® inner width
- \( B_a = B_a + 132 \)
- \( B_i = B_i + 2 \)

---

**guidelite** | **Version 02** | **Product range**

---

**Part No. installation set with C-profile**

| Part No. installation set with C-profile | For | For | For |
|---|---|---|
| length LLL | E2.1 | E2/000 / E4.1 | For rol E2/000 series |
| **1500** | | | |
| 9GL.64.50. | 150 – | 1500,068/R,0 | – |
| 9GL.64.50. | 175 – | 1500,100/R,0 | – |
| 9GL.64.50. | 175 – | 1500,100/R,0 | – |
| 9GL.64.50. | 200 – | 1500,125/R,0 | – |
| **E2.26 / 2500** | | | |
| 9GL.64.50. | 150 E2.26.077/R,0 | 2500,05/R,0 | – |
| 9GL.64.50. | 175 E2.26.077/R,0 | 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 | – |
| **E2.38 / 2700** | | | |
| 9GL.64.50. | 150 E2.38.065/R,0 | 2700,06/R,0 | 2700,06/R,0 |
| 9GL.64.50. | 175 E2.38.075/R,0 | 2700,07/R,0 | 2700,07/R,0 |
| 9GL.64.50. | 175 – | 2700,09/R,0 | 2700,09/R,0 |
| 9GL.64.50. | 200 E2.38.100/R | 2700,10/R,0 | 2700,10/R,0 |
| 9GL.64.50. | 225 – | 2700,12/R,0 | 2700,12/R,0 |
| 9GL.64.50. | 250 – | 2700,15/R,0 | 2700,15/R,0 |
| 9GL.64.50. | 275 – | 2700,17/R,0 | 2700,17/R,0 |
| **3500** | | | |
| 9GL.64.50. | 175 – | 3500,075/R,0 | 3500,075/R,0 |
| 9GL.64.50. | 200 – | 3500,100/R,0 | 3500,100/R,0 |
| 9GL.64.50. | 200 – | 3500,115/R,0 | 3500,115/R,0 |
| 9GL.64.50. | 200 – | 3500,125/R,0 | 3500,125/R,0 |
| 9GL.64.50. | 225 – | 3500,150/R,0 | 3500,150/R,0 |
| 9GL.64.50. | 225 – | 3500,175/R,0 | 3500,175/R,0 |
| 9GL.64.50. | 250 – | 3500,200/R,0 | 3500,200/R,0 |
| 9GL.64.50. | 325 – | 3500,225/R,0 | 3500,225/R,0 |
| 9GL.64.50. | 350 – | 3500,250/R,0 | 3500,250/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. | 200 – | E4.21.100/R,0 | – |
| 9GL.64.50. | 200 – | E4.21.110/R,0 | – |
| 9GL.64.50. | 200 – | E4.21.120/R,0 | – |

---

Feed principles

**Feed module:**

- End infeed is recommended for all e-chains® in combination with guidelite
- Centre infeed is only used with rol e-chain® series 2700R and series 3500R.

Please use the feed module 9GL.64.80.Series.LLL, which guides the upper run of the e-chain® down.

---

1286 More information ► www.igus.co.uk/guidelite

---

1287 3D CAD, configurators, service life calculation and more ► www.igus.co.uk/guidelite
Tubular trough | System RS | Introduction | Advantages

**Tubular trough system RS**

*Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

**Tubular trough | System RS | Selection table**

<table>
<thead>
<tr>
<th>Part No. without glide bars</th>
<th>Part No. with glide bars</th>
<th>For e-chain® series</th>
<th>$H_{\text{max}}$ [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>92.70.</td>
<td>92.71.</td>
<td>E2.26 $\bullet$ 2500 $\bullet$ 255</td>
<td>90</td>
<td>1290</td>
</tr>
<tr>
<td>93.70.</td>
<td>93.71.</td>
<td>E2.48 $\bullet$ 3500</td>
<td>146</td>
<td>1291</td>
</tr>
<tr>
<td>95.70.</td>
<td>95.71.</td>
<td>E2.38 $\bullet$ 2700</td>
<td>126.3</td>
<td>1292</td>
</tr>
</tbody>
</table>

**Tubular trough | System RS | Introduction | Advantages**

**iF product design award**

2000 System RS

---

**igus® tubular troughs are simple and open options to safely guide e-chains®. Recommended for less demanding applications and applications with travel speeds less than 2m/s, as well as travel distances less than 50m.**

- For application areas where dirt, chips occur - the waste simply fall through the spaces
- Elegant design and easy assembly
- For applications with low mechanical loads
- No complicated setting of the correct width - the fitting spacers are delivered with the complete order
- The tubes are available in galvanised steel or polymer
- Very easy assembly - the elements are pushed together and clipped in

**Typical industries and applications**

- For application areas with dirt or chips

---

**Let's light and dirt through - tubular trough system RS**

- Transition from section without glide bar to section with glide bar and spacer plate in detail
- Debris simply falls through the spaces
- Area 1m with glide bar
- Area 1m without glide bar
- Tubular trough system RS lets light and dirt through
- Area 1m with glide bar
- Area 1m without glide bar
- 2m total length

---

**More information**

www.igus.co.uk/tubulartrough

---

**www.igus.co.uk/tubulartrough**
Tubular trough | System RS | 92.70 | 92.71
Trough height: 90mm | Product range

For the following igus® series
- E2.1
- E2.26
- E2/000
- 2500
- 255

For 1m trough without glide bars 6 tubes 1m long are required.
For 1m trough with glide bars 4 tubes 1m long are required.

Installation dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>Bi</th>
<th>Ba</th>
<th>Bm</th>
<th>Bn</th>
</tr>
</thead>
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<tr>
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<td>123</td>
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<tr>
<td>12</td>
<td>125</td>
<td>141</td>
<td>181</td>
<td>145</td>
</tr>
</tbody>
</table>

*Spacer plate upon request

XXX = Width index

Tubular trough | Components

Individual parts | Part No. | Weight
--- | --- | ---
Installation set without glide bars | 92.70.XXX | 0.15kg
Installation set with glide bars | 92.71.XXX | 0.15kg
Installation set junction | 92.74.XXX | 0.15kg

Tubular steel, diameter ø 12 x 1 (galvanised)

Installation set 4 x 4 piece 92.80 (L = 885 for clearance, installation set 1m)

Order example: e-chain® inner width 57mm.
For 8m trough the following parts are required:

Area with glide bar: 4 x installation set + tube: 4 x 4 piece 92.71.050
Area without glide bar: 4 x installation set + Tube: 4 x 6 piece 92.70.050

Transition from area without glide bar to area with glide bar: 1 x installation set junction 92.74.050

For the following igus® series
- E2.1
- E2.48
- E2/000
- 3350

Tubular trough | System RS | 93.70 | 93.71
Trough height: 146mm | Product range

For the following igus® series
- E2.1
- E2.48
- E2/000
- 3350

For 1m trough without glide bars 6 tubes 1m long are required.
For 1m trough with glide bars 4 tubes 1m long are required.

Installation dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>Bi</th>
<th>Ba</th>
<th>Bm</th>
<th>Bn</th>
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<tr>
<td>250</td>
<td>250</td>
<td>270</td>
<td>330</td>
<td>275</td>
</tr>
</tbody>
</table>

XXX = Width index

Tubular trough | Components

Individual parts | Part No. | Weight
--- | --- | ---
Installation set without glide bars | 93.70.XXX | 0.20kg
Installation set with glide bars | 93.71.XXX | 0.20kg
Installation set junction | 93.74.XXX | 0.20kg

Tubular steel, diameter ø 15 x 1 (galvanised)

Installation set 50 x 50mm. inner width 50mm.

Order example: e-chain® inner width 57mm.
For 8m trough the following parts are required:

Area with glide bar: 4 x installation set + tube: 4 x 4 piece 93.71.050
Area without glide bar: 4 x installation set + Tube: 4 x 6 piece 93.70.050

Transition from area without glide bar to area with glide bar: 1 x installation set junction 93.74.050

More information: www.igus.co.uk/tubulartrough

3D CAD, configurators, service life calculation and more: www.igus.co.uk/tubulartrough
For the following igus® series

**E2.1**
- E2.38
- E2/000
- 2700

**Tubular trough | System RS | 95.70 | 95.71**

Trough height: 126.3mm | Product range

For 1m trough without glide bars 6 tubes 1m long are required.
For 1m trough with glide bars 4 tubes 1m long are required.

**Installation dimensions**

<table>
<thead>
<tr>
<th>XXX</th>
<th>Bi</th>
<th>Ba</th>
<th>B_{Ha}</th>
<th>B_{Ra}</th>
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<td>224</td>
</tr>
</tbody>
</table>

*Spacer plate upon request

XXX = Width index

**Tubular trough | Components**

**Individual parts**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>95.70,XXX</td>
<td>≈ 0.21kg</td>
</tr>
<tr>
<td>95.71,XXX</td>
<td>≈ 0.17kg</td>
</tr>
<tr>
<td>95.74,XXX</td>
<td></td>
</tr>
</tbody>
</table>

**Installation set**

- without glide bars: ≈ 0.21kg
- with glide bars: ≈ 0.17kg

**Fastening set**

- Tubular steel, diameter ø 15 x 1 galvanised: 93.80 ≈ 0.50kg

Please add the width index XXX. Example: 95.71.05

**Order example: e-chain® inner width 50mm.**

For 8m trough the following parts are required:

- **Area with glide bar:**
  - 4 x installation set +
  - tube: 4 x 4 piece
  - 93.80
  - 95.71.050

- **Area without glide bar:**
  - 4 x installation set +
  - Tube: 4 x 6 piece
  - 93.80
  - 95.70.050

- **Transition from area without glide bar to area with glide bar:**
  - 1 x installation set junction
  - 95.74.05
Simple and cost-effective - snap-in trough system SP

The igus® snap-in trough system SP is a very simple and cost-effective trough-system made from galvanised steel to guide e-chains® up to 50m lengths at low speeds.

- Smaller than conventional troughs
- Quick and easy assembly
- Fixed inner width with spacer
- No complex width setting required
- No sharp metal edges internally
- Cost-effective with easy assembly

Typical industries and applications
- For simple applications with less installation space

Snap-in trough | System SP | Selection table

<table>
<thead>
<tr>
<th>Part No. without glide bars</th>
<th>Part No. with glide bars</th>
<th>For e-chain® series</th>
<th>$H_{\text{max}}$ [mm]</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>91.930</td>
<td>91.931</td>
<td>10 ● B15/B15i ● 15/R15</td>
<td>55.5</td>
<td>1296</td>
</tr>
<tr>
<td>92.930</td>
<td>92.931</td>
<td>E2.26 ● 2500 ● 255</td>
<td>76.6</td>
<td>1297</td>
</tr>
<tr>
<td>93.930</td>
<td>93.931</td>
<td>E2.48 ● 3500</td>
<td>138.6</td>
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<td>95.930</td>
<td>95.931</td>
<td>E2.38 ● 2700</td>
<td>106.6</td>
<td>1299</td>
</tr>
</tbody>
</table>

Available from stock. Ready to ship in 24 - 48hrs. *

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
For the following igus® series

E2 mini
- 10
- B15/B15i
zipper
- 15/R15

BhB = B + 5

Installation dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>A</th>
<th>BhB</th>
</tr>
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<tbody>
<tr>
<td>015</td>
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<td>46</td>
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<tr>
<td>025</td>
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<td>113</td>
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<td>07</td>
<td>108</td>
<td>133</td>
</tr>
</tbody>
</table>

XXX = Width index

Please add the width index XXX. Example: 91.950.050

Order example: series 15 for e-chain® inner width 50mm.
For 20m trough the following parts are required:

- 10 x 1m, trough sections without glide bars (10 x 1m) 91.930
- 10 x 1m, trough sections with glide bars (10 x 1m) 91.931
- Installation set with spacer plate (21x) 91.950.050

---

For the following igus® series

E2.1
- E2.26
- E2/000
- 2500

BhB = B + 5

Installation dimensions

<table>
<thead>
<tr>
<th>XXX</th>
<th>A</th>
<th>BhB</th>
</tr>
</thead>
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<td>12</td>
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<td>167</td>
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</tbody>
</table>

XXX = Width index

Please add the width index XXX. Example: 92.950.05

Order example: series 2500 for e-chain® inner width 50mm.
For 20m trough the following parts are required:

- 10 x 1m, trough sections without glide bars (5 x 2m) 92.930
- 10 x 1m, trough sections with glide bars (5 x 2m) 92.931
- Installation set with spacer plate (21x) 92.950.05

---

For more information please visit www.igus.co.uk/snap-in-trough. 3D CAD, configurators, service life calculation and more.
For the following igus® series

### Snap-in trough | System SP | 93.930 | 93.931

**Trough height: 138.6mm | Product range**

**Installation dimensions**

<table>
<thead>
<tr>
<th>XXX</th>
<th>A</th>
<th>B_{ha}</th>
<th>B_{a}</th>
<th>B_{i}</th>
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</thead>
<tbody>
<tr>
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</tbody>
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**Snap-in trough | Components**

**Individual parts**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Weight</th>
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</thead>
<tbody>
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<tr>
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<tr>
<td>93.950.XXX</td>
<td>0.20kg</td>
</tr>
<tr>
<td>93.950</td>
<td>0.16kg</td>
</tr>
</tbody>
</table>

*Please add the width index XXX. Example: 93.950.050*

**Order example:** series 3500 for e-chain® inner width 50mm.

For 20m trough the following parts are required:

- 10 x 1m, trough sections **without** glide bars (5 x 2m) 93.930
- 10 x 1m, trough sections **with** glide bars (5 x 2m) 93.931
- Installation set with spacer plate (21x) 93.950.050

---

For the following igus® series

### Snap-in trough | System SP | 95.930 | 95.931

**Trough height: 106.6mm | Product range**

**Installation dimensions**

<table>
<thead>
<tr>
<th>XXX</th>
<th>A</th>
<th>B_{ha}</th>
<th>B_{a}</th>
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<td></td>
</tr>
</tbody>
</table>

*Please add the width index XXX. Example: 95.950.05*

**Order example:** series 15 for e-chain® inner width 50mm.

For 20m trough the following parts are required:

- 10 x 1m, trough sections **without** glide bars (5 x 2m) 95.930
- 10 x 1m, trough sections **with** glide bars (5 x 2m) 95.931
- Installation set with spacer plate (21x) 95.950.05

---

Visit [www.igus.co.uk/snap-in-trough](http://www.igus.co.uk/snap-in-trough) for 3D CAD, configurators, service life calculation and more.
igus®
chainfix
Strain relief

Advantages of igus® strain relief:
- Long service life for cables
- Specifically designed for use in energy chains
- Offers maximum holding force
- Assembly-time optimised
- Space-saving
- Tested under real-world conditions
- Wide range of options
Strain relief from igus® is specifically developed for use in e-chains® and dynamic applications. The combination of polymer strain relief components and chainflex® cable materials offers maximum holding force and very high service life for the cables. For a wide variety of applications, igus® offers the best solution with respect to cost and benefits; from the CFXL strain relief for long travels in harsh environments, or the new CFU honeycomb strain relief for fast assembly to the CFN chainfix nuggets for simple and inexpensive strain relief. igus® chainfix strain relief components have been successfully used in thousands of applications around the world for years.

Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.
### e-chain® Series / System

<table>
<thead>
<tr>
<th>e-chain®</th>
<th>CFV</th>
<th>CFNL</th>
<th>CFU</th>
<th>CFN</th>
<th>Strain relief</th>
<th>Strain relief can be clipped onto mounting bracket/ROMA</th>
<th>Tiewrap plate/connector system</th>
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1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 32.52.XX)
2) You’ll find on the product page of each e-chain series
3) Half e-tube only
4) Only for the KMA mounting bracket

More information: [www.igus.co.uk/chainfix](http://www.igus.co.uk/chainfix)
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<th>CFN Nagel</th>
<th>Strain relief separator</th>
<th>CFV Stripped, strain relief</th>
<th>Strain relief can be clipped onto mounting bracket / 100A</th>
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<th>Timewrap plate Series 3000</th>
<th>Timewrap plate with clip-on connection for C-profile</th>
<th>Timewrap plate for fixed crossbars</th>
<th>Timewrap plate for triflex® R and triflex® X</th>
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1) Assembled in front of the mounting bracket. (CFXL clamps are always assembled before the mounting bracket in a separate C-profile 92.52.XX)
2) You’ll find the product page of each e-chain series
3) Half e-tube only
4) = recommended strain relief for selected e-chain
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<th>Series / System</th>
<th>e-chain®</th>
<th>CFX Clamp, standard</th>
<th>CFXL Clamps, for increased holding forces</th>
<th>CFU Honeycomb strain relief</th>
<th>CFN Nugget</th>
<th>Strain relief separator</th>
<th>CFV Stepped strain relief</th>
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<th>Tiewrap plate for fixed crossbars</th>
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<th>Tiewrap plates for E2 e-tubes</th>
<th>Tiewrap plate/ teeth directly moulded on the mounting bracket</th>
<th>CFB Strain relief connector system</th>
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2) You’ll find on the product page of each e-chain® series. 3) Half-e-tube only. * = recommended strain relief for selected e-chain®

More information ► www.igus.co.uk/chainfix

1308 3D CAD, configurators, service life calculation and more ► www.igus.co.uk/chainfix 1309
**igus® chainfix strain relief system**

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<tr>
<th>CFX - clamps</th>
<th>Tiewrap plates - bolted, clip-on</th>
<th>CFU - lean honeycomb strain relief</th>
<th>CFN nuggets</th>
<th>Strain relief separators</th>
<th>CFV - strain relief element</th>
<th>CFB - strain relief connector system</th>
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**When to use this strain relief?**

- **CFX - clamps**
  - Standard for high accelerations, loads and demanding applications. For many cables, large cable diameters and stacked cables. For long travels, cranes, offshore, machine tools, high speeds and hydraulic cables.
  - Assembled in seconds - CFX honeycomb strain relief. Strain relief with honeycomb structure, operable from both sides. Simply insert cables and hoses into the honeycomb and close. Strain relief for different cables in one slot. Also suitable for gliding applications.

- **Tiewrap plates - bolted, clip-on**
  - Standard for many applications at medium and low accelerations. For unsupported, gliding, hanging and standing applications in general machinery and machine tools. For cables side by side. Also available as an individual part, for example in control cabinets etc.
  - Cost-effective, fast strain relief for simple applications with small spaces and medium accelerations. Also available as single parts for fixed applications, such as in cabinets, etc.

- **CFU - lean honeycomb strain relief**
  - For all KMA* with C-profile or top-hat (DIN) rail
  - *Polymer metal mounting bracket

- **CFN nuggets**
  - For high loads
  - For medium accelerations

- **Strain relief separators**
  - For high loads
  - For medium accelerations

- **CFV - strain relief element**
  - For high loads

- **CFB - strain relief connector system**
  - For high loads

**When not to use it:**

- **CFX - clamps**
  - No limitation

- **Tiewrap plates - bolted, clip-on**
  - No limitation

- **CFU - lean honeycomb strain relief**
  - No limitation

- **CFN nuggets**
  - No limitation

- **Strain relief separators**
  - No limitation

- **CFV - strain relief element**
  - No limitation

- **CFB - strain relief connector system**
  - No limitation

**Properties**

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<th>Dynamics</th>
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<td>Assembly time index</td>
<td>Adjustable tensile strength</td>
<td>Price Index</td>
<td>Modularity</td>
<td>Dynamics</td>
</tr>
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<td>+ + + +</td>
<td>+ + + +</td>
<td>-</td>
<td>yes</td>
<td>high/to very high</td>
</tr>
</tbody>
</table>

**Price index**

- **+++** = best suitability
- **+** = good suitability
- **++** = suitable
- **** = limited suitability

**More information**

[www.igus.co.uk/chainfix](http://www.igus.co.uk/chainfix)
chainfix strain relief | C-profile

Standard C-profile Part No. 92.42. XX
- For all igus® CFX clamps and KMA mounting brackets with C-profile option
- Standard material galvanised steel Part No. 92.42. XX
- Also available as stainless steel version, please add index .E
Example: Part No. 92.42. XX .E
- Length tolerances for C-profile of ±1mm possible!

XX = length mm / Material: stainless steel 1.4301/AISI 304

Standard C-profile Part No. 92.42. For standard applications
Can be integrated into KMA with C-profile option!

Optional | For heavy-duty applications

C-profile Part No. 92.52. XX
- For all igus® CFXL clamps
- For increased holding force - even for heavy duty applications
- Standard material galvanised steel Part No. 92.52. XX
- Also available as stainless steel version, please add index .E
Example: Part No. 92.52. XX .E
- Length tolerances for C-profile of ±5mm possible!

XX = length mm / Material: stainless steel 1.4301/AISI 304

C-profile Part No. 92.52 For increased holding force for heavy-duty applications
Always assembled in front of the e-chain®. Cannot be integrated into KMA!

Tensile strength tests with chainflex® cables

Tensile strength tests of igus® clamps with cable tiewraps

igus® test: comparison of three different strain reliefs - Result: triple tensile strength of igus® chainfix clamps when compared with conventional products

igus® tensile strength test with CFX clamps

Whether under the influence of fluids like water or oil, or at different ambient temperatures. The interaction of chainfix systems with different jacket materials of cables and hoses plays a big role in the in-house tests.

More information ➤ www.igus.co.uk/chainfix

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/chainfix
chainfix strain relief | Clamps | Advantages

**chainfix strain relief**

- Fitted quickly and securely
- Easy to read the Part No. and marking of the correct installation direction
- Reduced installation height due to optimal housing height (compared to conventional clamps up to 15mm)
- Space and time-saving assembly
- Delivery options for complete systems with cables and preassembled strain relief
- Improved base for easy fit into the C-profile
- Simple assembly with hex head set screw
- High strength for dynamic applications with improved stacker elements
- Built-in ribs on the stacker elements give secure grip on the cables
- Optional: CPXL clamps for increased holding force for heavy-duty applications (CPXL clamps are always assembled in front of the e-chain®. They cannot be integrated into KMA mounting brackets with C-profile option)

**Product range and materials**
- Steel clamp: clamp and screw black painted steel
- Stainless steel clamp: clamp and screw, blank (material 1.4301/AISI 304)
- Stacker elements: bottom saddle and stacker saddle (igumid G material)
- Steel C-profile available (material galvanised steel)
- Stainless steel C-profile available (material 1.4301/AISI 304)

**Installation height**

If the e-chain® glides on itself for long travels, the screw heads of the strain relief at the fixed end of the e-chain® must have a distance of at least 10mm from the top of the e-chain®. As a result, many strain relief elements described here may not be suitable for use at the fixed end on long gliding e-chains®. For unsupported e-chains® strain relief elements can always be safely used.

**Please note**

- The cables should ideally be fixed at both ends of the e-chain®. As a minimum they need to be attached at the moving end of the e-chain®
- When using chainfix clamps on C-profile in the mounting bracket for the series E4.32/H4.32/R4.32, E4.38L/R4.38L (also for the classic series 280/290/770, 2828/2928/7728) a shortened bottom saddle must be used. For shortened bottom saddles supplement Part No. with index “K”. Example: CFX12.1K

**Available from stock. Ready to ship in 24 - 48hrs.*

*The delivery times indicated correspond to the average time until the ordered goods are dispatched.

---

**chainfix strain relief**

- For the following igus® series
- E2/000
  - 2600/2650/2680
  - 3400/3450/3480
- E4.1L
  - E4.38L/R4.38L
  - E4.48L/R4.48L
  - E4.64L
- 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/R4.112
  - E4.162
- E4/light
  - 1404/14140/14840
  - 14240/14340
  - 14550/14650/19050
  - 15050/15150/19850
  - 15250/15350
- E6
  - E6.1
  - E6.40
  - E6.52/R6.52
  - E6.62
  - E6.80/L
  - E6.80

---

**For the following igus® series**

- E2/000
  - 2600/2650/2680
  - 3400/3450/3480
- E4.1L
  - E4.38L/R4.38L
  - E4.48L/R4.48L
  - E4.64L
- 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/R4.112
  - E4.162
- E4/light
  - 1404/14140/14840
  - 14240/14340
  - 14550/14650/19050
  - 15050/15150/19850
  - 15250/15350
- E6
  - E6.1
  - E6.40
  - E6.52/R6.52
  - E6.62
  - E6.80/L
  - E6.80

---

**More information**

- [www.igus.co.uk/cfx_clamp](http://www.igus.co.uk/cfx_clamp)

---

**3D CAD, configurators, service life calculation and more**

- [www.igus.co.uk/chainfix](http://www.igus.co.uk/chainfix)
### CFX | Standard clamps with standard base
(Suitable for C-profile 92.42.**X** - can be integrated into KMA with C-profile option)

**Single clamp housing, incl. bottom saddle**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>≤ Ø</th>
<th>B-²</th>
<th>H</th>
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<td>stainless steel*</td>
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<td>CFX14.1.E</td>
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<td>18</td>
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<td>CFX16.1.E</td>
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**Double clamp housing, incl. bottom and stacker saddles**

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<td>14 - 16</td>
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**Triple clamp housing, incl. bottom and stacker saddles**

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</tbody>
</table>

*Stainless steel material: 1.4301/AISI 304

### CFX | Clamps with wide base for increased holding force
(Suitable for C-profile 92.52.**X** - C-profile always assembled in front of the e-chain®. Cannot be integrated into KMA)

**Single clamp housing, incl. bottom saddle**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
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<th>B-²</th>
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<td>CFXL16.1.E</td>
<td>14 - 16</td>
<td>20</td>
<td>58</td>
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**Double clamp housing, incl. bottom and stacker saddles**

<table>
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<th>Part No.</th>
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<td>CFXL16.2.E</td>
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**Triple clamp housing, incl. bottom and stacker saddles**

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<th>Part No.</th>
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<td>CFXL16.3.E</td>
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*Stainless steel material: 1.4301/AISI 304

---

**Suitable C-profile for CFX clamps**

<table>
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[www.igus.co.uk/cfx_clamp](http://www.igus.co.uk/cfx_clamp)

---

**Suitable C-profile for CFXL clamps**

<table>
<thead>
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<td>92.52</td>
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</tbody>
</table>

[www.igus.co.uk/chainfix](http://www.igus.co.uk/chainfix)
chainfix strain relief | Clamps | Individual parts

chainfix clamps - stacker elements
- Built-in ribs for secure grip on cables
- Optimised stacker saddle, captive by locking spring and with spring groove for a simplified and precise installation
- Conventional stacker saddle
- Long contact surface improves the clamp's stability
- More secure due to high strength
- Suitable for CFX and CFXL clamps

CGXX | Bottom saddle to fit into the clamp housing as an individual part

CDXX | Conventional stacker saddle for all double and triple clamps as an individual part

CD.XX.C | Optimised stacker saddle for all double and triple clamps as an individual part

CD.XX.C

<table>
<thead>
<tr>
<th>CGXX</th>
<th>CDXX</th>
<th>CDXX.L.C</th>
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<tbody>
<tr>
<td>Bottom saddle</td>
<td>Stacker saddle</td>
<td>Stacker saddle</td>
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<table>
<thead>
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<th>CG22</th>
<th>CD22.C</th>
<th>CFX/CFXL26.X</th>
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<tbody>
<tr>
<td>20 - 22</td>
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</table>

Please note: When using chainfix clamps on C-profile in the mounting bracket for series E4.32/H4.32/R4.32, E4.38L/R4.38L a shortened bottom saddle has to be used. For shortened bottom saddles supplement Part No. with index “K”.
Example: CFX12.1K

chainfix strain relief | Multi-clamps

chainfix multi-clamps
- More modular options of the proven igus® chainfix strain relief system
- Universal strain relief - various assembly options
- Save both time and space during installation
- Compact and modular
- For cables with small outer diameters
- Cost-effective

CFX12 | Multi-clamps, universal strain relief

Universal bottom and stacker saddles

<table>
<thead>
<tr>
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<th>Number stacker saddles -individual parts</th>
<th>≤ Ø</th>
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<td>2 x</td>
<td>6</td>
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<tr>
<td>CFX12.2.Z1</td>
<td>2 x, 1 x</td>
<td>6 + 12</td>
</tr>
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<td>CFX12.2.Z2</td>
<td>1 x</td>
<td>6 + 8</td>
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<tr>
<td>CFX12.2.Z3</td>
<td>1 x</td>
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<td>CFX12.3.Z1</td>
<td>2 x, 3 x</td>
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<td>CFX12.3.Z2</td>
<td>1 x, 2 x, 1 x</td>
<td>6 + 12</td>
</tr>
<tr>
<td>CFX12.3.Z3</td>
<td>1 x, 1 x</td>
<td>6 + 12</td>
</tr>
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<td>CFX12.3.Z4</td>
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</table>

Standard material: galvanised steel. For the stainless steel version (material 1.4301/AISI 304) supplement Part No. with Index “E”.
Example: CFX12.3.Z1.E

More information ➤ www.igus.co.uk/cfx_clamp ➤ www.igus.co.uk/multiclamp

3D CAD, configurators, service life calculation and more ➤ www.igus.co.uk/chainfix
Option 1A: chainfix tiewrap plate series 2000 as an individual part
- Available as an individual component
- Screwed on KMA* with C-profile (polymer metal mounting bracket)
- Can be clipped onto some mounting brackets
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

Series 2000 | Tiewrap plate as an individual part
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<td>-</td>
</tr>
<tr>
<td>2125.ZB</td>
<td>12</td>
<td>120</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Strain relief consisting of 2 tiewrap plates

For the following igus® series
easychain®
- E200/Z200
- E2.1
- E2/000
- 1400/1500/1450/1480
- 2400/2500/2450/2480
- 255
- E2R100
- R1.17/R1.18
- E2R
- E4.8
- E4.1
- E4.21
- E6.1
- E61.29/E61.29
- E61.35
- E61.40
- E6.29/R6.29
- E6.35
- E6.40

Cable tiewraps as individual parts

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width x length</th>
<th>≤ Ø</th>
<th>Holding force [N]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFB.001</td>
<td>4.8 x 150</td>
<td>36</td>
<td>222 N</td>
</tr>
</tbody>
</table>

1320 More information ► www.igus.co.uk/tiewrap_plate

Option 1B: chainfix tiewrap plate series 3000 as an individual part
- Available as an individual component
- Screwed on KMA* with C-profile (polymer metal mounting bracket)
- Can be clipped onto some mounting brackets
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

Series 3000 | Tiewrap plate as an individual part
---
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.ZB</td>
<td>5</td>
<td>50</td>
<td>30</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3075.ZB</td>
<td>7</td>
<td>75</td>
<td>55</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3100.ZB</td>
<td>10</td>
<td>100</td>
<td>80</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3115.ZB</td>
<td>11</td>
<td>115</td>
<td>95</td>
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<td>-</td>
</tr>
<tr>
<td>3125.ZB</td>
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<td>125</td>
<td>105</td>
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<td>-</td>
</tr>
<tr>
<td>3150.ZB</td>
<td>15</td>
<td>150</td>
<td>130</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3175.ZB</td>
<td>17</td>
<td>175</td>
<td>155</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3200.ZB</td>
<td>20</td>
<td>200</td>
<td>180</td>
<td>90</td>
<td>+</td>
</tr>
<tr>
<td>3225.ZB</td>
<td>22</td>
<td>225</td>
<td>205</td>
<td>102.5</td>
<td>+</td>
</tr>
<tr>
<td>3250.ZB</td>
<td>25</td>
<td>250</td>
<td>230</td>
<td>115</td>
<td>+</td>
</tr>
</tbody>
</table>

For the following igus® series
easychain®
- E26/Z26
- E300/Z300
- E2.1
- E2.3B
- 2600/2700/2650/2680
- 3400/3500/3450/3480
- E4.1L
- E4.3BL/R4.3BL
- E4.4BL/R4.4BL
- E4.64L
- E4.1
- E4.32A4.32/R4.32
- E4.42A4.42/R4.42
- E4.56A4.56/R4.56
- E4.80A4.80/R4.80
- E4.112/R4.112
- E4.162
- 840
- 840
- E4/light
- 14040/14140/18840
- 14240/14340
- 14550/14650/19050
- 15050/15150/19850
- 15250/15350
- 1640/1608
- E6.1
- E6.152
- E6.162
- E6.180
- E6
- E6.52/R6.52
- E6.62
- E6.80L
- E6.80

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/chainfix

1321
Option 1: Tiewrap plate for C-profile
- Can be clipped into the KMA C-profile
- Easy to assemble without any screws
- Easy to remove with screwdriver but secure when in use
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Number of teeth</th>
<th>For series</th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.ZC</td>
<td>50</td>
<td>5</td>
<td>60</td>
</tr>
<tr>
<td>3075.ZC</td>
<td>75</td>
<td>7</td>
<td>70</td>
</tr>
</tbody>
</table>

Option 2: Integrated strain relief for R series E2 e-tubes
- Strain relief integrates completely into the e-tube
- Easy to assemble without any screws
- Can be used as an individual part in switchgear cabinets or in the assembly of machines

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Number of teeth</th>
<th>For series</th>
</tr>
</thead>
<tbody>
<tr>
<td>3050.Z</td>
<td>50</td>
<td>5</td>
<td>R58</td>
</tr>
<tr>
<td>3075.Z</td>
<td>75</td>
<td>7</td>
<td>R68</td>
</tr>
<tr>
<td>5850.Z</td>
<td>46</td>
<td>4</td>
<td>R58</td>
</tr>
</tbody>
</table>

Option 3: Tiewrap plate for fixed crossbars
- Can be clipped on fixed crossbars
- For use with many harnessed cables
- If the KMA is too small for C-profile
- Easy to assemble without any screws

For the following igus® series:
- easychain®
  - E200/2200
  - E2.1
  - E2.3B
  - E2.4B
  - E2/000
  - E2400/2500
  - 2600/2700
  - 3400/3500
  - E4.1L
  - E4.3BL
  - E4.48L
chainfix strain relief \| Tiewrap plates \| Optional

**Option 4: chainfix tiewrap plates for openable crossbars**

- Can be clipped on openable crossbars
- For use with many harnessed cables
- If the KMA is too small for C-profile
- Easy to assemble without any screws

### Option 4 | Tiewrap plate for openable crossbars

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Width [mm]</th>
<th>Number of teeth</th>
<th>For series</th>
</tr>
</thead>
<tbody>
<tr>
<td>2050.Z</td>
<td>60</td>
<td>6</td>
<td>2600/2700/2650, E4.28, E6.52, E6.52</td>
</tr>
<tr>
<td>3035.ZS</td>
<td>35</td>
<td>3</td>
<td>3400/3500/3450</td>
</tr>
<tr>
<td>3050.ZS</td>
<td>50</td>
<td>5</td>
<td>3400/3500/3450</td>
</tr>
<tr>
<td>3075.ZS</td>
<td>75</td>
<td>7</td>
<td>3400/3500/3450</td>
</tr>
<tr>
<td>C622.100.ZS New</td>
<td>80</td>
<td>8</td>
<td>E4.38L, E4.48L</td>
</tr>
</tbody>
</table>

**For the following igus® series**

- E2/000
  - 2600/2700/2650
  - 3400/3500/3450
- E4.1L
  - E4.38L
  - E4.48L
- 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/R4.112
- E4/light
  - 14040/14140/18840
  - 14240/14340
  - 14550/14650/19050
  - 15050/15150/19850
  - 15240/15350
  - 1640/1608
- E6
  - E6.52/R6.48
  - E6.62
  - E6.80
  - E6.80L
- E6.1
  - E6.1.52
  - E6.1.62
  - E6.1.80

**Assembled in seconds - honeycomb strain relief CFU - New**

- Up to 80% faster strain relief for different cables in one slot
- Simply insert cables and hoses into the honeycomb and close
- Easy to make changes - add or remove cables/hoses
- Simplified parts
- Can be used in gliding applications

**Strain relief of different cables in one slot, openable on both sides. Black anodised aluminium rails with side recesses for easier assembly**

**Strain relief can be screwed in from above or below. Compact design is smaller than the mounting bracket of the e-chain® at the fixed end, meaning it can also be used for long travels**

**Red Dot Design Award winner 2018**

More technical information on request or online

More information | www.igus.co.uk/tiewrap_plate | www.igus.co.uk/CFU

1325 | 3D CAD, configurators, service life calculation and more | www.igus.co.uk/chainfix
Strain relief separators - separator with integrated strain relief teeth

- To be fitted at the first and last e-chain® link
- For restricted space conditions
- Easy to assemble without any screws
- The number "n" depends on the selection of the cables (diameter, type) and the available space

Strain relief separator | With integrated teeth

Strain relief separators are assembled either at the first or last e-chain® link. Alternatively they can be fitted within the e-chain® as an intermediate strain relief.

Strain relief separator for the following igus® series

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For series</th>
<th>Number of teeth</th>
<th>A [mm]</th>
<th>B [mm]</th>
<th>C [mm]</th>
<th>D [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>21.1.Z</td>
<td>1400/1500</td>
<td>4</td>
<td>10</td>
<td>4</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>2020.Z</td>
<td>2400/2500</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>2020.ZR</td>
<td>2450/2480</td>
<td>4</td>
<td>10</td>
<td>4</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>262.Z</td>
<td>2600/2700</td>
<td>3</td>
<td>10</td>
<td>4</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>301.Z</td>
<td>3400/3500</td>
<td>3</td>
<td>18</td>
<td>4</td>
<td>–</td>
<td>14</td>
</tr>
<tr>
<td>34501.Z</td>
<td>3450/3480</td>
<td>6</td>
<td>14</td>
<td>4</td>
<td>–</td>
<td>10</td>
</tr>
<tr>
<td>1585.01.Z</td>
<td>R157/R158</td>
<td>6</td>
<td>22</td>
<td>4</td>
<td>–</td>
<td>18</td>
</tr>
<tr>
<td>1665.01.Z</td>
<td>R167/R168</td>
<td>8</td>
<td>22</td>
<td>4</td>
<td>–</td>
<td>18</td>
</tr>
<tr>
<td>481.ZR</td>
<td>R48</td>
<td>4</td>
<td>10</td>
<td>3.5</td>
<td>10</td>
<td>6.5</td>
</tr>
<tr>
<td>R2.26.Z</td>
<td>R2.26/R2.26i</td>
<td>4</td>
<td>10</td>
<td>3</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>R2.40.Z</td>
<td>R2.40/R2.40</td>
<td>8</td>
<td>12</td>
<td>3</td>
<td>–</td>
<td>7</td>
</tr>
<tr>
<td>31.Z</td>
<td>E4.31L/R4.31L</td>
<td>4</td>
<td>9</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>48.Z</td>
<td>E4.48L/R4.48L</td>
<td>4</td>
<td>14</td>
<td>4.5</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>48.ZS</td>
<td>E4.48L/R4.48L</td>
<td>4</td>
<td>14</td>
<td>4.5</td>
<td>8</td>
<td>20</td>
</tr>
<tr>
<td>T2103.Z</td>
<td>E4.21</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>28.Z</td>
<td>E4.28</td>
<td>4</td>
<td>10</td>
<td>4</td>
<td>–</td>
<td>6</td>
</tr>
<tr>
<td>28.ZT</td>
<td>R4.28</td>
<td>4</td>
<td>10</td>
<td>4</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>E6.29.02.Z</td>
<td>T3.29</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>E6.29.02.Z</td>
<td>E6.29/E61.29</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>R6.29.02.Z</td>
<td>R6.29</td>
<td>2</td>
<td>10</td>
<td>4</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>E6.35.02.Z</td>
<td>E6.35/E61.35</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>E6.40.02.Z</td>
<td>E6.40/E61.40</td>
<td>3</td>
<td>13</td>
<td>4</td>
<td>–</td>
<td>8</td>
</tr>
</tbody>
</table>

*For KMA mounting bracket only

For the following igus® series

- E2.1
  - E2.26
  - E2/000
  - 1400/1500
  - 2400/2500
  - 2450/2480
  - 2600/2700
  - 3400/3500
  - 3450/3480
  - E2/100
  - R157/R158
  - R167/R168

- R2.1
  - R2.26/R2.26i
  - R2.40/R2.40

- E4.1L
  - E4.31L/R4.31L
  - E4.48L/R4.48L

- E4.1
  - E4.21
  - E4.28/R4.28

- T3
  - T3.29

- E6
  - E6.29
  - R6.29
  - E6.35
  - E6.40

More information ► www.igus.co.uk/cfx_separator

3D CAD, configurators, service life calculation and more ► www.igus.co.uk/chainfix
### Overview

#### For series E2/000

<table>
<thead>
<tr>
<th>E2.00</th>
<th>E4.00</th>
<th>E6.00</th>
<th>T3.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
<td>assembled</td>
</tr>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
<td>assembled</td>
</tr>
</tbody>
</table>

#### For series R E2 e-tubes

<table>
<thead>
<tr>
<th>R20.00</th>
<th>R40.00</th>
<th>R60.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
</tr>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
</tr>
</tbody>
</table>

#### For series E1 e-tubes

<table>
<thead>
<tr>
<th>E4.00</th>
<th>E6.00</th>
<th>T3.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
</tr>
<tr>
<td>demolished</td>
<td>assembled</td>
<td>demolished</td>
</tr>
</tbody>
</table>

#### For series E1.1 e-chains

<table>
<thead>
<tr>
<th>E2.26</th>
<th>E4.26</th>
</tr>
</thead>
<tbody>
<tr>
<td>demolished</td>
<td>assembled</td>
</tr>
<tr>
<td>demolished</td>
<td>assembled</td>
</tr>
</tbody>
</table>

*For KMA mounting bracket only.

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For more information, visit [www.igus.co.uk/chainfix](http://www.igus.co.uk/chainfix)
CFV strain relief element - for a stepped strain relief for use outside of the e-chain® section
● Easy strain relief for cables, even in fully enclosed tubes and with different connectors
● For e-chains® and e-tubes
● Easy to retrofit
● Simple installation into KMA mounting bracket or top-hat (DIN) rail 15 (TS92.31)

**CFV | Strain relief elements with tiewrap teeth**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For series</th>
<th>Inner height H [mm]</th>
<th>For use in</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFV.31.N15 New</td>
<td>E4.31L/R4.31L</td>
<td>31</td>
<td>Top-hat (DIN) rail 15 (TS92.31)</td>
</tr>
<tr>
<td>CFV.R2.26.Z New</td>
<td>R2.26</td>
<td>26</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.R2.30.Z</td>
<td>R2.40</td>
<td>40</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.42.C</td>
<td>E4.32/H4.32/R4.32</td>
<td>32</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.80.C</td>
<td>E4.75/H4.75/R4.75</td>
<td>56</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.38.R2.26.Z</td>
<td>R2.26</td>
<td>26</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.48.R2.40.Z</td>
<td>R2.40</td>
<td>40</td>
<td>KMA*</td>
</tr>
<tr>
<td>CFV.64.R2.64.Z</td>
<td>R2.64</td>
<td>64</td>
<td>KMA*</td>
</tr>
</tbody>
</table>

For the following igus® series
- E2/000
  - 2600/2700
  - 2650/2680
  - 3400/3500
  - 3450/3480

**Option 1 | CFN nuggets for C-profile**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For</th>
<th>≤ Ø [mm]</th>
<th>A [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFN.20</td>
<td>C-profile</td>
<td>92.42 ...</td>
<td>20</td>
</tr>
<tr>
<td>CFN.30.52</td>
<td>Top-hat (DIN) rail 35</td>
<td>92.52 ...</td>
<td>30</td>
</tr>
</tbody>
</table>

For the following igus® series
- Top-hat (DIN) rail 35

**Option 2 | CFN nuggets for top-hat (DIN) rail**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>For</th>
<th>≤ Ø [mm]</th>
<th>A [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>CFN.20.N35</td>
<td>Top-hat (DIN) rail 35</td>
<td>20</td>
<td></td>
</tr>
</tbody>
</table>

*KMA = plastic metal mounting bracket

For the following igus® series
- Top-hat (DIN) rail 35

More information: www.igus.co.uk/CFV
www.igus.co.uk/nuggets
www.igus.co.uk/chainfix
**chainfix strain relief | Strain relief connector system**

**CFB strain relief connector system - polymer, modular, can be mounted into the C-profile**
- Customised strain relief solutions can be offered
- 2 options available, cost-effective and strong
- Fast assembly with bolted connection
- Can be mounted in the mounting bracket or in front of the e-chain
- Customised production from 1 piece

**CFB strain relief connector system | Series 907.881**

<table>
<thead>
<tr>
<th>Parts list</th>
<th>Part No.</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outer fixing block</td>
<td>CFB20.1</td>
<td>N x 2</td>
</tr>
<tr>
<td>Clamping bar</td>
<td>907.881.1.XXX</td>
<td>2</td>
</tr>
<tr>
<td>Threaded bolt with plate</td>
<td>907.825.2.LLL</td>
<td>3</td>
</tr>
<tr>
<td>Hexagon nut M8</td>
<td>MAT 0040012</td>
<td>2</td>
</tr>
<tr>
<td>C-profile (part of KMA)</td>
<td>92.42.XXX</td>
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<tr>
<td>Strain relief block</td>
<td>Customer-specific</td>
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**Order key 907.881.XXX.N**

N = Number of layers of fixing blocks

XXX= Bi - 3mm (mounting bracket)

Part No. with version 881

**CFB strain relief connector system | Series 907.825**

<table>
<thead>
<tr>
<th>Parts list</th>
<th>Part No.</th>
<th>Quantity</th>
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<tbody>
<tr>
<td>Description</td>
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<tr>
<td>Outer fixing block</td>
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<tr>
<td>Threaded bolt with plate</td>
<td>907.825.2.LLL</td>
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<tr>
<td>Hexagon nut M8</td>
<td>MAT 0040012</td>
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<td>Inner fixing block</td>
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**Order key 907.825.XXX.N**

N = Number of layers of fixing blocks

XXX= Bi - 3mm (mounting bracket)

Part No. with version 825

**Please consult igus® when designing this product**

**Delivery time upon request, due to customer-specific fabrication!**

More information | www.igus.co.uk/CFB

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**UnivFix® chainfix strain relief**

- Strain relief connector system
- Series 907.825
- Please consult igus® when designing this product

**Parts list**

- Description
- Part No.
- Quantity

**Please consult igus® when designing this product**

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