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
easy triflex® | Introduction | Advantages

KMA mounting brackets: split mounting bracket with integrated strain relief

Modular:
est easy lengthening and shortening at any point

Robust:
"push-button" joint

Simple:
est easy filling from both sides with "easy" design

Fast:
est simply press cable in along the inner or outer radius

Customisable:
different bend radii and types can be combined

Flexible:
est multi-axis movement for all kinds of machinery

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®

More information | www.igus.eu/easytriflex

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easy triflex® | Selection table

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<thead>
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Single-axis movement - "easy" design
easy filling from both sides

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Double-axis movement - "easy" design with RBR (Reverse Bend Radius)
easy filling from both sides

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Triple-axis movement - "easy" design with RBR (Reverse Bend Radius)
easy filling from both sides

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.eu/easytriflex

3D CAD, configurators, service life calculation and more

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### Technical data

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<td>Speed / acceleration</td>
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<td>Material - permitted temperature °C, igumid NB</td>
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<td>Flammability class, igumid NB</td>
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### 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  
  - Order key: E333.75.200/200.0

- **Mounting brackets**: 1 set mounting bracket with strain relief  
  - Order key: 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  
  - Series
  - Width index
  - Bend radius R
  - Standard colour black

- **Double-axis movement**: E332.75.2.200.0  
  - Series
  - Width index
  - Bend radius R
  - Bend radius RBR
  - Standard colour black

- **Triple-axis movement**: E333.75.200/200.0  
  - Series
  - Width index
  - Bend radius R
  - Bend radius RBR
  - Standard colour black

### Application examples

Robots with igus® easy triflex® e-chains® on an assembly line

Igus® easy triflex® and E2 medium e-chain® in a production line

Easy triflex® e-chains® can also be used for simple applications needing an aesthetic solution

More information » www.igus.eu/easytriflex

3D CAD, configurators, service life calculation and more » www.igus.eu/easytriflex
**easy triflex® | Series E332 | Product range**

**Single-axis movement**

e-chains® | Series E332 "easy" design | Single-axis movement

<table>
<thead>
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<th>Part No.</th>
<th>Bi/Bi2</th>
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Complete Part No. with required radius (R). Example: E332.75.2.200.0

**Installation dimensions**

- **Moving end**
  - D = 95 mm
  - E = 48 mm

- **Fixed end**
  - D = 95 mm
  - E = 48 mm

**e-chain® length**

- E332.25.2: Bi3 = 40 mm
- E332.32.2: Bi3 = 60 mm
- E332.50.2: Bi3 = 80 mm
- E332.75.2: Bi3 = 100 mm

**Double-axis movement**

e-chains® | Series E332 "easy" design | Double-axis movement with RBR*

<table>
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Complete Part No. with required radius (R). Example: E332.75.2.200/200.0

**Installation dimensions**

- **Moving end**
  - D = 95 mm
  - E = 48 mm

- **Fixed end**
  - D = 95 mm
  - E = 48 mm

**e-chain® length**

- E332.25.2: Bi3 = 40 mm
- E332.32.2: Bi3 = 60 mm
- E332.50.2: Bi3 = 80 mm
- E332.75.2: Bi3 = 100 mm

**Bi1/Bi2**

- Series E332 “easy” design

**Bi3**

- Series E332 “easy” design

**R**

- Reverse Bend Radius

e-chains® | Series E333 "easy" design | Triple-axis movement with RBR*

- **Bi1/Bi2**: Bi1/Bi2 dimensions
- **Bi3**: Bi3 dimensions
- **Ba**: Ba dimensions
- **R**: Available bend radii
- **Pitch**: Pitch dimensions

### Part No.

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<th>Part No.</th>
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</table>

*RBR = Reverse Bend Radius. The bend radii are doubled in the case of the series E333!

#### Installation dimensions

- **D**: D dimension
- **S/2**: S/2 dimension
- **H**: H dimension

**KMA mounting brackets**

- **Series E332·E333 | Accessories**
- **Moving end**: 333 ... 1PZ(B)
- **Fixed end**: 333 ... 2PZ(B)

**KMA, one end pivoting**

- **Width (mm)**: 25.2 / 25.2
- **Part No. full set**: 333.25.12PZ
- **Part No. full set**: 333.32.12PZ
- **Part No. full set**: 333.50.12PZ
- **Part No. full set**: 333.75.12PZ

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<th>C</th>
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**Note series E333**: the mounting brackets are only available for e-chains® 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.**

**Strain relief**: e.g. tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ➤ From page 1000


3D CAD, configurators, service life calculation and more ➤ www.igus.eu/easytriflex
Mounting brackets, flange, steel | Pivoting

<table>
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<th>Width index</th>
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Note series E333: the mounting brackets are only available for e-chains® with even number of chain links!

Mounting brackets, angled, steel | Pivoting

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Note series E333: the mounting brackets are only available for e-chains® with even number of chain 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
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
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.

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<td>96</td>
<td>140 - 300</td>
<td>36</td>
<td>961</td>
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<tr>
<td>353.50*</td>
<td>50</td>
<td>68</td>
<td>100 - 250</td>
<td>30</td>
<td>961</td>
</tr>
</tbody>
</table>

*Series 352/353 openable

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
triflex® | Technical data | Overview

**Technical data**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed / acceleration</td>
<td>upon request</td>
</tr>
<tr>
<td>Material - permitted temperature °C</td>
<td>-40°C / +120°C</td>
</tr>
<tr>
<td>Flammability class, igumid G</td>
<td>VDE 0304 IIC UL94-HB</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 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**

- 332.75.200/200.0
- 352.75.200/200.0

**Triple-axis movement**

- 333.75.200/200.0
- 353.75.200/200.0

triflex® allows combination of links for triple-axis and single-axis movement

triflex® 332 as unsupported link from machines to control panel

Various triflex® e-chains® on a machining centre
**triflex® | Series 332-352 | Product range**

**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>Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [kg/m]</th>
</tr>
</thead>
<tbody>
<tr>
<td>enclosed version</td>
<td>openable version</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>332.16</td>
<td>332</td>
<td>16</td>
<td>26</td>
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<td>048</td>
<td>075</td>
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<tr>
<td>332</td>
<td>332.32</td>
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<td>075</td>
<td>100</td>
<td>125</td>
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<tr>
<td>332.50</td>
<td>332.50</td>
<td>50</td>
<td>68</td>
<td>100</td>
<td>125</td>
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<td>332.75</td>
<td>332.75</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: 332.75.200.0**

---

**Installation dimensions**

**Un-supported length 332.16**

- **Bi [mm]**
- **Ba [mm]**
- **Pitch T [mm/lin]**: 13.3
- **Dim. E [mm]**: 10
- **Link/m**: 76
- **Corresponds to [m]**: 1.011
- **E-chain® length**: \( L_e \times 18 \times K \)

**Un-supported length 332.32**

- **Bi [mm]**
- **Ba [mm]**
- **Pitch T [mm/lin]**: 25
- **Dim. E [mm]**: 20
- **Link/m**: 40
- **Corresponds to [m]**: 1.000
- **E-chain® length**: \( L_e \times 18 \times K \)

**Un-supported length 332.50/352.50**

- **Bi [mm]**
- **Ba [mm]**
- **Pitch T [mm/lin]**: 30
- **Dim. E [mm]**: 25
- **Link/m**: 34
- **Corresponds to [m]**: 1.008
- **E-chain® length**: \( L_e \times 18 \times K \)

**Un-supported length 332.75**

- **Bi [mm]**
- **Ba [mm]**
- **Pitch T [mm/lin]**: 36
- **Dim. E [mm]**: 28
- **Link/m**: 28
- **Corresponds to [m]**: 1.008
- **E-chain® length**: \( L_e \times 18 \times K \)

---

**3D CAD, configurators, service life calculation and more | www.igus.eu/triflex**

---

### trilax® | Series 332-352 | Product range

**Double-axis movement**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [kg/m]</th>
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<tbody>
<tr>
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<td>68</td>
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<td>150</td>
</tr>
<tr>
<td>332.75</td>
<td>R/R</td>
<td>–</td>
<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**

![Diagram](image1)

- **Bi** [mm]
- **Ha** [mm]
- **Hb** [mm]
- **K** [mm]
- **L** [mm]
- **S** [mm]
- **T** [mm]
- **Sy** [mm]

#### e-tubes
- **332 enclosed**
- **352 openable**
- **Double-axis movement with RBR**

### trilax® | Series 333-353 | Product range

**Triple-axis movement**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Part No.</th>
<th>Bi [mm]</th>
<th>Ba [mm]</th>
<th>R [mm]</th>
<th>Available bend radii</th>
<th>Pitch [mm]</th>
<th>Weight [mm]</th>
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<tbody>
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<tr>
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<td>333.75</td>
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<td>–</td>
<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**

![Diagram](image2)

- **Bi** [mm]
- **Ha** [mm]
- **Hb** [mm]
- **K** [mm]
- **L** [mm]
- **S** [mm]
- **T** [mm]
- **Sy** [mm]

#### e-tubes
- **333 enclosed**
- **353 openable**
- **Triple-axis movement with RBR**

---

triflex® | Series 332-333-352-353 | Accessories
KMA mounting brackets | Attachment from any side | One end pivoting

Moving end
333 ... 1PZ(B)

Fixed end
333 ... 2PZ(B)

KMA mounting brackets | One end pivoting

<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>C [mm]</th>
<th>D [mm]</th>
<th>E [mm]</th>
<th>F [mm]</th>
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<td>50</td>
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Note series 333: the mounting brackets are only available for e-chains® with even number of chain links!

Order example
333.75.12PZB.A to indicate option with brackets pre-fitted

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

Mounting brackets, flange, steel | Pivoting

<table>
<thead>
<tr>
<th></th>
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</table>

Note series 333: the mounting brackets are only available for e-chains® with even number of chain links!

Order example
330.75.12 Full set

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
**Mounting brackets, angled, steel | Pivoting**

<table>
<thead>
<tr>
<th>Width index</th>
<th>Part No.</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
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<td>338.16.12</td>
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<td>23</td>
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<tr>
<td>75.</td>
<td>338.75.12</td>
<td>65</td>
<td>5.5</td>
<td>77</td>
<td>12</td>
<td>35</td>
<td>24</td>
<td>9</td>
<td>95</td>
<td>90</td>
<td>15</td>
</tr>
</tbody>
</table>

Note series 333: the mounting brackets are only available for e-chain® 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

**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
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 1m/s and more
- e-chains® for circular and spiral movements up to 360°* available 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

Typical industries and applications
- Robots, Handling machines
- Packaging machines
- Glass machines
- General machinery, etc.

UL94-V0 classification upon request

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 8 different 2D formats available

More information ► www.igus.eu/twister-configurator

Twisterchain 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>Circular radii</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
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<td>28</td>
<td>52.5 - 112.5</td>
<td>80 - 140</td>
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<td>055 - 150</td>
<td>300</td>
<td>972</td>
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<tr>
<td>TC32</td>
<td>32</td>
<td>87.5 - 150</td>
<td>108.5 - 171</td>
<td>54</td>
<td>100 - 250</td>
<td>400 - 600</td>
<td>974</td>
</tr>
<tr>
<td>TC42</td>
<td>42</td>
<td>87.5 - 200</td>
<td>110.5 - 223</td>
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<td>100 - 250</td>
<td>400 - 850</td>
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<td>TC56</td>
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<td>155 - 230</td>
<td>84</td>
<td>150 - 400</td>
<td>650 - 850</td>
<td>978</td>
</tr>
</tbody>
</table>

*twisterchain classic (1st generation), openable from both sides

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

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

**twisterchain | Technical data | Order key**

**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 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
  - B 12mm inner width, R 250mm bend radius / AR 650mm outer radius, colour black

---

**Order example**

- **Order key**
  - TC56.12.250/650.0
  - e-chain® openable along the inner radius, from both sides
  - B 12mm inner width, R 250mm bend radius / AR 650mm outer radius, colour black

---

**Technical data**

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width index (depends on B)</td>
<td>Bend radius R</td>
</tr>
<tr>
<td>Outer radius AR</td>
<td>Standard colour black</td>
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</table>

**Order example**

- **Order key**
  - TC56.12.250/650.0
  - e-chain® openable along the inner radius, from both sides
  - B 12mm inner width, R 250mm bend radius / AR 650mm outer radius, colour black

---

**Order example**

- **Order key**
  - TC56.12.250/650.0
  - e-chain® openable along the inner radius, from both sides
  - B 12mm inner width, R 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>
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<th>AR</th>
<th>IR</th>
<th>BI</th>
<th>Ba</th>
<th>R 055</th>
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<th>R 125</th>
<th>R 150</th>
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*twisterchain classic (1st generation)

Pitch [mm/link] 44
Links/m 23
corresponds to [mm] 1,012

Combined spiral and circular movement - igus® twisterchain classic (1st generation)

---

twisterchain classic* | 2208 | Installation dimensions

Dimensions

**Dimensions**

<table>
<thead>
<tr>
<th>Ba</th>
<th>28</th>
</tr>
</thead>
</table>

Fixed end

**Series 2208 | interior separation**

For this series the interior separation products for series E4.28 may be used (except side plates) ► From page 566

- **AR** = Outer radius of e-chain®
- **IR** = Inner radius e-chain®
- **BI** = Bend radius e-chain®
- **Ba** = Inner machine limit
- **R** = Outer machine limit
- **X1** = Intermediate link position
- **A1** = Nominal clearance height
- **H** = Add-on for bend radius
- **K** = Pitch

More information ► www.igus.eu/2208

3D CAD, configurators, service life calculation and more ► www.igus.eu/twisterchain
twisterchain | Series TC32 | Product range
e-chains® for circular and spiral movements up to 360°

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</th>
<th>R 125</th>
<th>R 150</th>
<th>R 175</th>
<th>R 200</th>
<th>R 250</th>
<th>TC32</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td></td>
<td></td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[kg]</td>
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<tr>
<td>400</td>
<td>87.5</td>
<td>108.5</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>108</td>
<td>129</td>
<td>480</td>
<td>250</td>
<td>–</td>
<td>–</td>
<td>10.150/400</td>
<td>10.175/400</td>
<td>10.200/400</td>
<td>10.250/400</td>
<td>1.90</td>
</tr>
<tr>
<td>600</td>
<td>125</td>
<td>146</td>
<td>480</td>
<td>220</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>11.175/400</td>
<td>11.200/400</td>
<td>11.250/400</td>
<td>1.96</td>
</tr>
<tr>
<td>137.5</td>
<td>158.5</td>
<td>480</td>
<td>210</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>12.175/400</td>
<td>12.200/400</td>
<td>12.250/400</td>
<td>2.05</td>
</tr>
<tr>
<td>400</td>
<td>150</td>
<td>171</td>
<td>480</td>
<td>200</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>15.200/400</td>
<td>15.250/400</td>
<td>2.13</td>
</tr>
<tr>
<td>500</td>
<td>171</td>
<td>192</td>
<td>580</td>
<td>350</td>
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<td>15.125/500</td>
<td>15.150/500</td>
<td>15.175/500</td>
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<td>15.250/500</td>
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<tr>
<td>137.5</td>
<td>158.5</td>
<td>580</td>
<td>310</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>17.150/500</td>
<td>17.175/500</td>
<td>17.200/500</td>
<td>17.250/500</td>
<td>2.13</td>
</tr>
<tr>
<td>500</td>
<td>150</td>
<td>171</td>
<td>580</td>
<td>300</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>18.150/500</td>
<td>18.175/500</td>
<td>18.200/500</td>
<td>1.96</td>
</tr>
<tr>
<td>600</td>
<td>171</td>
<td>192</td>
<td>680</td>
<td>450</td>
<td>11.100/600</td>
<td>11.125/600</td>
<td>11.150/600</td>
<td>–</td>
<td>–</td>
<td>2.13</td>
<td></td>
</tr>
<tr>
<td>137.5</td>
<td>158.5</td>
<td>680</td>
<td>410</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>12.125/600</td>
<td>12.150/600</td>
<td>12.175/600</td>
<td>12.200/600</td>
<td>12.250/600</td>
</tr>
</tbody>
</table>

Dimension A1 always with tolerance of ± 2.5mm

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.

Dimension A1 dependent on outer radius AR

<table>
<thead>
<tr>
<th>AR</th>
<th>R 100</th>
<th>R 125</th>
<th>R 150</th>
<th>R 175</th>
<th>R 200</th>
<th>R 250</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
<td>[mm]</td>
</tr>
<tr>
<td>400</td>
<td>51</td>
<td>51</td>
<td>52</td>
<td>53</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td>500</td>
<td>65</td>
<td>66</td>
<td>66</td>
<td>67</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td>600</td>
<td>79</td>
<td>80</td>
<td>81</td>
<td>81</td>
<td>82</td>
<td>85</td>
</tr>
</tbody>
</table>

Dimensions

Series TC2 | Installation dimensions

 Pitch [mm/link] 56

Link/m 18

 corresponds to [mm] 1,008

Intermediate link position

For this series the interior separation products for series E4.32 may be used (except side plates) ◄ From page 594

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

Twisterchain 2nd generation from igus® - successfully tested for over 1 million cycles in the igus® laboratory

Series TC32 | Interior separation
## Series TC42

**Dimensions**

<table>
<thead>
<tr>
<th>Inside Radii (mm)</th>
<th>Outside Radii (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.100/400</td>
<td>18.150/650</td>
</tr>
<tr>
<td>10.125/400</td>
<td>18.175/650</td>
</tr>
<tr>
<td>10.150/400</td>
<td>18.200/650</td>
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<tr>
<td>10.175/400</td>
<td>18.250/650</td>
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<tr>
<td>10.250/400</td>
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<td>11.100/400</td>
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<td>12.125/400</td>
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</tr>
<tr>
<td>12.200/400</td>
<td></td>
</tr>
<tr>
<td>12.250/400</td>
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<tr>
<td>13.100/400</td>
<td>210.5</td>
</tr>
<tr>
<td>13.125/400</td>
<td>210.5</td>
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<td>13.175/400</td>
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<td>13.250/400</td>
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<td></td>
</tr>
<tr>
<td>14.175/400</td>
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</tr>
<tr>
<td>14.200/400</td>
<td></td>
</tr>
<tr>
<td>14.250/400</td>
<td></td>
</tr>
</tbody>
</table>

**Product Range**

- e-chains® for circular and spiral movements up to 360°
- Crossbars removable along the inner and outer radius
- Installation dimensions may be used (except side plates)

**Notes:**

- Add-on for bend radius
- Dimension A1 dependent on outer radius AR
- Pitch AR determines dimension A1.
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>R150 [mm]</th>
<th>R200 [mm]</th>
<th>R250 [mm]</th>
<th>R300 [mm]</th>
<th>R400 [mm]</th>
<th>TC56</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>125</td>
<td>155</td>
<td>730</td>
<td>470</td>
<td>12,50/650</td>
<td>12,20/650</td>
<td>12,25/650</td>
<td>12,30/650</td>
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<td>+3.46</td>
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<tr>
<td>650</td>
<td>137.5</td>
<td>168</td>
<td>730</td>
<td>460</td>
<td>13,20/650</td>
<td>13,25/650</td>
<td>13,30/650</td>
<td>13,40/650</td>
<td>–</td>
<td>+3.54</td>
</tr>
<tr>
<td>650</td>
<td>150</td>
<td>180</td>
<td>730</td>
<td>450</td>
<td>–</td>
<td>15,25/650</td>
<td>15,30/650</td>
<td>15,40/650</td>
<td>–</td>
<td>+3.62</td>
</tr>
<tr>
<td>650</td>
<td>162.5</td>
<td>193</td>
<td>730</td>
<td>440</td>
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<td>16,25/650</td>
<td>16,30/650</td>
<td>16,40/650</td>
<td>–</td>
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<tr>
<td>650</td>
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<td>205</td>
<td>730</td>
<td>430</td>
<td>–</td>
<td>–</td>
<td>17,30/650</td>
<td>17,40/650</td>
<td>–</td>
<td>+3.78</td>
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<tr>
<td>650</td>
<td>187.5</td>
<td>218</td>
<td>730</td>
<td>420</td>
<td>–</td>
<td>–</td>
<td>18,30/650</td>
<td>18,40/650</td>
<td>–</td>
<td>+3.87</td>
</tr>
<tr>
<td>650</td>
<td>200</td>
<td>230</td>
<td>730</td>
<td>400</td>
<td>–</td>
<td>–</td>
<td>20,40/650</td>
<td>–</td>
<td>–</td>
<td>+3.96</td>
</tr>
<tr>
<td>750</td>
<td>137.5</td>
<td>168</td>
<td>830</td>
<td>560</td>
<td>13,150/750</td>
<td>13,200/750</td>
<td>13,250/750</td>
<td>13,300/750</td>
<td>–</td>
<td>+3.54</td>
</tr>
<tr>
<td>750</td>
<td>162.5</td>
<td>193</td>
<td>830</td>
<td>540</td>
<td>–</td>
<td>16,200/750</td>
<td>16,250/750</td>
<td>16,300/750</td>
<td>16,400/750</td>
<td>+3.70</td>
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<td>175</td>
<td>205</td>
<td>830</td>
<td>530</td>
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<td>–</td>
<td>17,250/750</td>
<td>17,300/750</td>
<td>17,400/750</td>
<td>+3.78</td>
</tr>
<tr>
<td>750</td>
<td>187.5</td>
<td>218</td>
<td>830</td>
<td>520</td>
<td>–</td>
<td>–</td>
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<td>+3.87</td>
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<td>–</td>
<td>+3.96</td>
</tr>
<tr>
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<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>+3.62</td>
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<tr>
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<td>162.5</td>
<td>193</td>
<td>930</td>
<td>640</td>
<td>16,150/850</td>
<td>16,200/850</td>
<td>16,250/850</td>
<td>16,300/850</td>
<td>16,400/850</td>
<td>+3.70</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>
<td>+3.78</td>
</tr>
<tr>
<td>850</td>
<td>187.5</td>
<td>218</td>
<td>930</td>
<td>620</td>
<td>–</td>
<td>18,200/850</td>
<td>18,250/850</td>
<td>18,300/850</td>
<td>18,400/850</td>
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<td>230</td>
<td>930</td>
<td>600</td>
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<td>–</td>
<td>20,250/850</td>
<td>20,300/850</td>
<td>20,400/850</td>
<td>+3.95</td>
</tr>
</tbody>
</table>

Dimension A1 always with tolerance of ± 2.5mm

TC56

### 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.

#### Dimensions

**A1**

**AR**

**Bi**

**Ba**

**X1**

**X2**

**R150 [mm]**

**R200 [mm]**

**R250 [mm]**

**R300 [mm]**

**R400 [mm]**

**Notes:**

- **Outer radius AR** (see drawing)
- Determines dimension A1.

For this series the interior separation products for series E4.56 may be used (except side plates) ➤ From page 616

---

**Series TC56 | Installation dimensions**

**Dimension A1 dependent on outer radius AR**

<table>
<thead>
<tr>
<th>AR</th>
<th>R 150</th>
<th>R 200</th>
<th>R 250</th>
<th>R 300</th>
<th>R 400</th>
</tr>
</thead>
<tbody>
<tr>
<td>650</td>
<td>83</td>
<td>85</td>
<td>88</td>
<td>90</td>
<td>97</td>
</tr>
<tr>
<td>750</td>
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<td>102</td>
<td>103</td>
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<tr>
<td>850</td>
<td>113</td>
<td>116</td>
<td>117</td>
<td>118</td>
<td>124</td>
</tr>
</tbody>
</table>

**Notes:**

- **Outer radius AR** (see drawing)
- 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 616

---

More information ➤ [www.igus.eu/TC56](http://www.igus.eu/TC56)

---

3D CAD, configurators, service life calculation and more ➤ [www.igus.eu/twisterchain](http://www.igus.eu/twisterchain)
**twisterchain | Series TC32-TC42-TC56 | Accessories**

Steel mounting bracket for twisterchain (2nd generation)

- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

**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>
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<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!

---

**twisterchain classic | Series 2208 | Accessories**

Steel mounting bracket for twisterchain classic (1st generation)

- One part for all e-chain® widths
- Electrically conductive
- Universal installation
- Material: stainless steel 1.4301

**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>

**Order example**

```
Stainless steel (standard)
Standard: bolted
Full set
Series
```

**22080.34.VS.E**

<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>

**Order example**

```
Stainless steel (standard)
Standard: bolted
Full set
Series
```

---

More information ➤ www.igus.eu/twisterchain

3D CAD, configurators, service life calculation and more ➤ www.igus.eu/twisterchain
Save installation time and cost - better guidance for circular movement - increase service life!

With the twisterchain trough 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 trough 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
### Installation dimensions | $X_1$ inner machine limit and $X_2$ outer machine limit

<table>
<thead>
<tr>
<th>$AR$ [mm]</th>
<th>$X_2$ [mm]</th>
<th>$X_1$ depending on $Bi$ [mm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC32</td>
<td>480</td>
<td>87.5 100 108 125 137.5 150</td>
</tr>
<tr>
<td>400</td>
<td>270</td>
<td>250 220 210 200</td>
</tr>
<tr>
<td>500</td>
<td>350</td>
<td>320 300 290 280 260 250</td>
</tr>
<tr>
<td>600</td>
<td>420</td>
<td>400 390 380 370 350 300</td>
</tr>
<tr>
<td>TC42</td>
<td>87.5</td>
<td>100 108 125 137.5 150 162.5</td>
</tr>
<tr>
<td>400</td>
<td>270</td>
<td>250 220 210 200 190 180</td>
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<tr>
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<td>320 300 290 280 260 250</td>
</tr>
<tr>
<td>600</td>
<td>420</td>
<td>400 390 380 370 350 300</td>
</tr>
<tr>
<td>TC56</td>
<td>87.5</td>
<td>100 108 125 137.5 150 162.5</td>
</tr>
<tr>
<td>600</td>
<td>420</td>
<td>400 390 380 370 350 300</td>
</tr>
<tr>
<td>750</td>
<td>500</td>
<td>570 – – – – – – – – – – – –</td>
</tr>
<tr>
<td>850</td>
<td>590</td>
<td>640 – – – – – – – – – – – –</td>
</tr>
</tbody>
</table>

For series 2208 please use guide trough type 02 ► Page 986

### 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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</thead>
<tbody>
<tr>
<td>TC32</td>
<td>370</td>
<td>420</td>
<td>470</td>
<td>520</td>
<td>570</td>
<td>670</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>TC42</td>
<td>380</td>
<td>430</td>
<td>480</td>
<td>530</td>
<td>580</td>
<td>680</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>TC56</td>
<td>–</td>
<td>–</td>
<td>500</td>
<td>–</td>
<td>600</td>
<td>700</td>
<td>800</td>
<td>1,000</td>
<td>–</td>
</tr>
</tbody>
</table>

**Note:**
- $AR$ = Outer radius of e-chain
- $Bi$ = Inner radius of e-chain
- $R$ = Bend radius of e-chain
- $H_f$ = Total trough height
- $H_s$ = e-chain height incl. 50mm clearance
- $W_1$ = Angle of upper run
- $W_2$ = Angle of lower run
- $W_{total}$ = Angle of rotation of system

More information ► [www.igus.eu/TCtroughnew](http://www.igus.eu/TCtroughnew)

3D CAD, configurators, service life calculation and more ► [www.igus.eu/twisterchain](http://www.igus.eu/twisterchain)
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. series</th>
<th>Outer radius AR [mm]</th>
<th>Angle of rotation min-max. α</th>
<th>Part No. guide trough type 02</th>
<th>Part No. guide trough with bottom support</th>
<th>Number of supports</th>
</tr>
</thead>
<tbody>
<tr>
<td>2208</td>
<td>300</td>
<td>45° - 100°</td>
<td>92208.4.45,300/Bi.R</td>
<td>not necessary</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;100° - 180°</td>
<td>92208.4.100,300/Bi.R</td>
<td>not necessary</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;180° - 270°</td>
<td>92208.4.135,300/Bi.R</td>
<td>92208.5.135,300/Bi.R</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>&gt;270° - 360°</td>
<td>92208.4.180,300/Bi.R</td>
<td>92208.5.180,300/Bi.R</td>
<td>2</td>
</tr>
</tbody>
</table>

* These troughs feature one support for the upper run
** These troughs feature two supports for the upper run

** The specified part number shown below includes the complete trough system

** 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

The guide trough must be mounted at the fixed end of the twisterchain using the drilling template shown. The following screw connections are allowed:
- Bore hole: 4 x Ø 6.6 - 7mm
- Mounting only with bolts: 4 x bolt M6

Installation dimensions | Guide trough type 02 (1st generation)

<table>
<thead>
<tr>
<th>Part No. series</th>
<th>R[mm]</th>
<th>H[mm]</th>
<th>Part No. guide trough</th>
<th>R[mm]</th>
<th>055</th>
<th>063</th>
<th>075</th>
<th>100</th>
<th>125</th>
<th>150</th>
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</thead>
<tbody>
<tr>
<td>2208</td>
<td>265</td>
<td>130</td>
<td>92208...</td>
<td>145</td>
<td>195</td>
<td>211</td>
<td>235</td>
<td>285</td>
<td>335</td>
<td>385</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.eu/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, axis1/6, 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

### Availability

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

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Inner height</th>
<th>Inner width</th>
<th>(X_1)</th>
<th>(X_2)</th>
<th>(R)</th>
<th>(\leq R)</th>
<th>(d_1)</th>
<th>Interior separation</th>
<th>Opening principle</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>TB12.23.9</td>
<td>9</td>
<td>23</td>
<td>40</td>
<td>140</td>
<td>024</td>
<td>035</td>
<td>7</td>
<td>6-9</td>
<td>&quot;easy&quot; design</td>
<td>994</td>
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<tr>
<td>TB20.44.12</td>
<td>12</td>
<td>44</td>
<td>50</td>
<td>220</td>
<td>034</td>
<td>057</td>
<td>9</td>
<td>6-9</td>
<td>&quot;easy&quot; design</td>
<td>994</td>
</tr>
<tr>
<td>TB20.44.18</td>
<td>18</td>
<td>44</td>
<td>50</td>
<td>220</td>
<td>034</td>
<td>057</td>
<td>14</td>
<td>yes</td>
<td>lock</td>
<td>994</td>
</tr>
<tr>
<td>TB29.27.22</td>
<td>22</td>
<td>27</td>
<td>200</td>
<td>320</td>
<td>069</td>
<td>082</td>
<td>17</td>
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<td>lock</td>
<td>994</td>
</tr>
<tr>
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<td>75</td>
<td>90</td>
<td>330</td>
<td>044</td>
<td>077</td>
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<td>056</td>
<td>119</td>
<td>20</td>
<td>yes</td>
<td>lock</td>
<td>998</td>
</tr>
</tbody>
</table>

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.

\( Bi = \) Inner width e-chain
\( h = \) Inner height e-chain
\( X_1 = \) Inner machine limit
\( X_2 = \) Outer machine limit
\( R = \) Minimum bend radius e-chain
\(n = \) Max. band radius e-chain
\( df = \) Max. cable diameter
\( XX = \) Number of strips
### twisterband | Features | Accessories

- **360°**
  - A central shaft must be installed for horizontal orientation angles of rotation above 1,500°

- **3000°**
  - 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

- **Filam 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>Feature</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Speed / acceleration</strong></td>
<td>180°/s</td>
</tr>
<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>
<tr>
<td><strong>Flammability class, igumid G</strong></td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
<tr>
<td><strong>Flammability class, igumid TE</strong></td>
<td>VDE 0304 IIC UL94-HB</td>
</tr>
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</table>

*Speed / acceleration for TB29.27. upon request

#### Size overview

<table>
<thead>
<tr>
<th>Size</th>
<th>Description</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>TB12.238</td>
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<td></td>
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<tr>
<td>TB30.75.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBHD30.75.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TBHD42.135.30</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- BI = Inner width e-chain®
- XI = Inner machine limit
- X2 = Outer machine limit
- aR = Minimum band radius e-chain®
- aR = Max. band radius e-chain®
- df = Max. cable diameter
- XX = Number of strips

More information: [www.igus.eu/twisterband](http://www.igus.eu/twisterband)

---

IF product design award 2011 igus® twisterband

Reddot design award winner 2011

3D CAD, configurators, service life calculation and more: [www.igus.eu/twisterband](http://www.igus.eu/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°*
- Rotary speeds up to 180°/s possible
- 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
- Ideal in combination with igus® chainflex® cables for rotary movements in very limited installation spaces

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

Base plate with strain relief**

Bands can be lengthened and shortened as required

4 sizes available

Some parts available with interior separation

Openable with film hinge or openable "easy" design

Base plate with strain relief**

**Base plates are delivered as standard as part of the twisterband module!

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.eu/twisterband
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.
**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

**Base plate with strain relief**

**Modular separation available**

**Temperature range**

0°C up to +80°C

**Strong pin and hook connection of the e-chain® links**

**Openable with film-hinge**

**Base plate with strain relief**

---

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

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

---

**twisterband HD | Product range | Installation dimensions**

**e-chain® links with strong pin and hook connection**

---

**twisterband | Openable with film hinge**

---

**Part No. | Bi | hi | X1 | X2 | ≥ R | ≤ R | ≤ d1 | Opening principle**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Bi</th>
<th>hi</th>
<th>X1</th>
<th>X2</th>
<th>≥ R</th>
<th>≤ R</th>
<th>≤ d1</th>
<th>Opening principle</th>
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</thead>
<tbody>
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<td>330</td>
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<td>077</td>
<td>17</td>
<td>lock</td>
</tr>
<tr>
<td>TBHD42,135.30.90.500 .056</td>
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<td>90</td>
<td>500</td>
<td>056</td>
<td>119</td>
<td>20</td>
<td>lock</td>
</tr>
</tbody>
</table>

Base plates are delivered as standard as part of the twisterband module!

X1 = ø inner machine installation space

X2 = ø outer machine installation space

Complete Part No. with required number of strips XXX. Example: TBHD30,75.22.180.01.0

---

**Installation dimensions**

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

More information ► www.igus.eu/twisterbandHD

3D CAD, configurators, service life calculation and more ► www.igus.eu/twisterband

---

998

999
**twisterband (7,000° rotation) | Accessories**

**Interior separation for twisterband HD**

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 HD**

Base plates are delivered as standard as part of the twisterband module!

[Image of separators and base plates]

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**3D CAD, configurators, service life calculation and more ➤ www.igus.eu/twisterband**

1000 More information ➤ www.igus.eu/twisterbandHD