

igus® Energy Chain  
Systems®

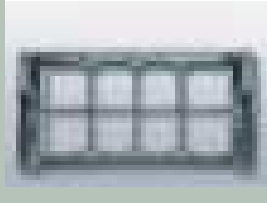
Price Index



10 Widths  
7 Bending Radii



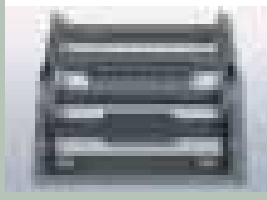
3 options for  
interior separation



5 options for  
mounting brackets



Various strain  
relief options



Extender crossbar  
for large-diameter  
hoses



Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

igus® GmbH  
51127 Cologne

Internet: <http://www.igus.de>  
email: [info@igus.de](mailto:info@igus.de)



When to use the Series 340/350:

- If snap-open accessibility along inner or outer radius is required
- If integrated strain relief is required at the connection point
- If modular interior separation is required
- If cables up to Ø 42 mm diameter are involved
- Travel up to 150 m
- Long service life



When not to use them:

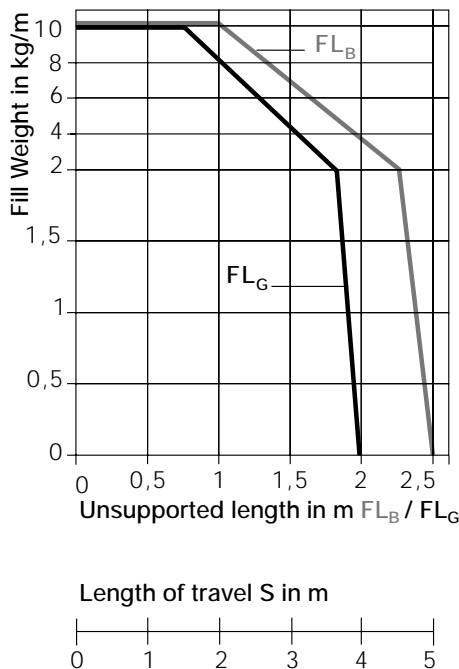
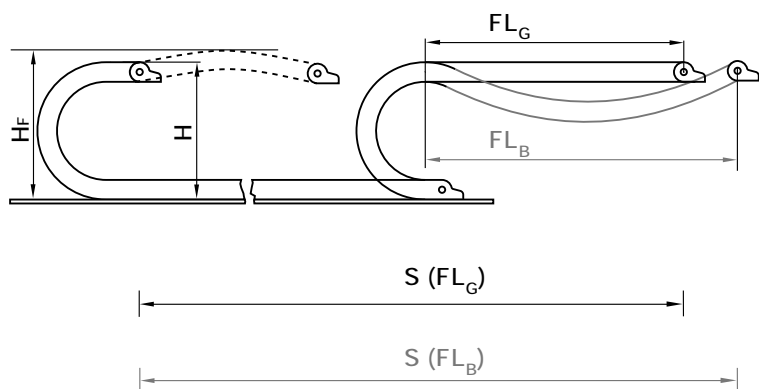
- If maximum stability is required
  - ▶ System E4, Series 380, Page 7.66
- If each link requires snap-open accessibility on both sides simultaneously
  - ▶ System E4, Series 380, Page 7.66
- If chip protection is required
  - ▶ Energy Tubes E2, Series R68, Page 6.66
  - R167/R168, Page 6.20
- If the application is very simple
  - ▶ Easy Chain®, Series E/Z 300, Page 3.62

Product Range:

Inner Widths (Bi) in mm:	50, 75, 100, 115, 125, 150, 175, 200, 225, 250
Bending Radii (R) in mm:	075, 100, 125, 150, 200, 250, 300
Pitch:	67 mm/link = 15 links/m (1005 mm)

Unsupported length

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



Unsupported Energy Chains® ► **Design, Page 1.8** feature positive camber over short travels. This must be accounted for when specifying the clearance height. Please refer to **Installation Dimensions** for details.



If the unsupported length is exceeded, the Energy Chain® must glide on itself. This requires a guide trough. ► **Design, Page 1.18.**

- Long travel  
Max. = 150 m

Or, incorporation of igus® exclusive AUTO-GLIDE System guide elements, which are available for this chain series. ► **AUTO-GLIDE System, Page 8.31.**

Other Installation Methods

Vertical, hanging	= max. 80 m
Vertical, standing	= max. 3 m
Side-mounted, unsupported	= max. 1 m
Rotary	= requires further calculation

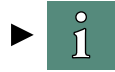
- Accessories for Guide Troughs  
► Page 8.6, 8.18, 8.22, 8.25
- Further information  
► Design, Page 1.1

E2 medium

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222



Order Example

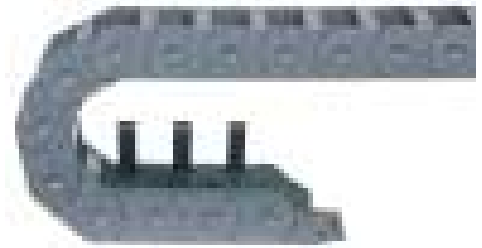
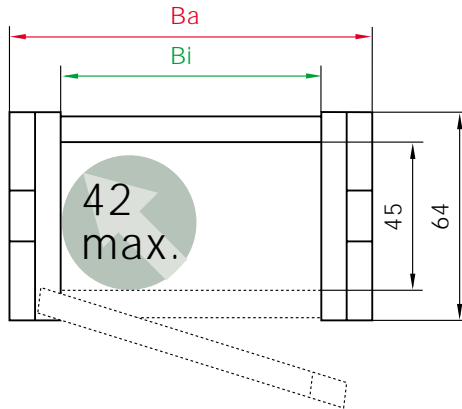


340.075.100.0

Standard color  
0 = Black

Other colors  
Design,  
Page 1.62

Series 340 Energy Chain® (snap-open along inner radius)

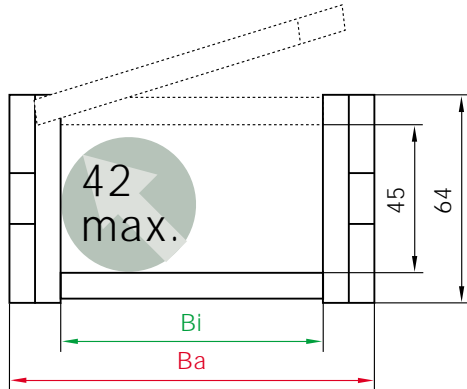


Part No.		Bi	Ba	Bending Radii
340.050	Radius	50	70	075 100 125 150 200
340.075	Radius	75	95	250 300
340.100	Radius	100	120	
340.115	Radius	115	135	
340.125	Radius	125	145	
340.150	Radius	150	170	
340.175	Radius	175	195	
340.200	Radius	200	220	These bending radii can be
340.225	Radius	225	245	combined with every chain
340.250	Radius	250	270	width!

Supplement part no. with required radius for example 340.050.150.0

Series 350 Energy Chain® (snap-open along outer radius)

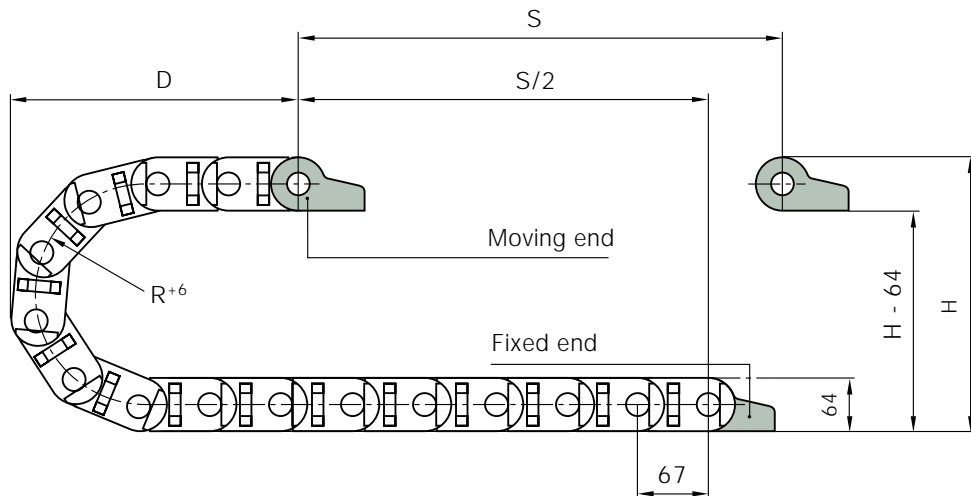
Series 350 is the standard chain for long travels (gliding applications)



Part No.		Bi	Ba	Bending Radii
350.050	Radius	50	70	075 100 125 150 200
350.075	Radius	75	95	250 300
350.100	Radius	100	120	
350.115	Radius	115	135	
350.125	Radius	125	145	
350.150	Radius	150	170	
350.175	Radius	175	195	
350.200	Radius	200	220	These bending radii can be
350.225	Radius	225	245	combined with every chain
350.250	Radius	250	270	width!

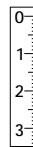
Supplement part no. with required radius for example 350.050.150.0

# Installation Dimensions: Series 340/350 "E2 medium"



- Pitch: = 67 mm per link
- Links per m: = 15
- Chain length: =  $\frac{S}{2} + K$

R	75	100	125	150	200	250	300
H) <sup>+5</sup> <sub>0</sub>	215	265	315	365	465	565	665
D	150	200	225	250	300	350	400
K	400	500	650	725	875	1050	1225

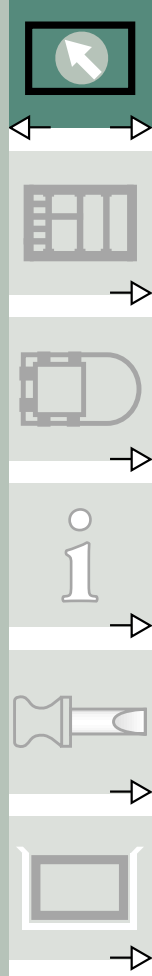


\*The required clearance height is HF = H + 40 mm (with 2,5 kg/m fill weight)

Please consult igus® if space is particularly restricted.

E2 medium

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222



### Extender Crossbar

The extender crossbars were developed specifically for applications in which a large-diameter hose must be guided carefully. It is intended for hoses with a maximum outer diameter of 115 mm. The extender crossbar can be placed along either the outer (Series 350) or inner (Series 340) radius. In most applications, the inner radius

is preferred. However, the chain cannot glide on itself in this case. If gliding operation is required, the crossbars are assembled along the outer radius and a special guide trough is required. The extender crossbar can either be attached to the side links directly or can be used in combination with two standard snap-open crossbars.

### Product Range, Extender Crossbar: Series 340



340.150...



340.175...

Series	Max. Hose Ø in mm	Bending Radii in mm
340.150	90	150, 200, 250, 300
340.175	115	200, 250, 300

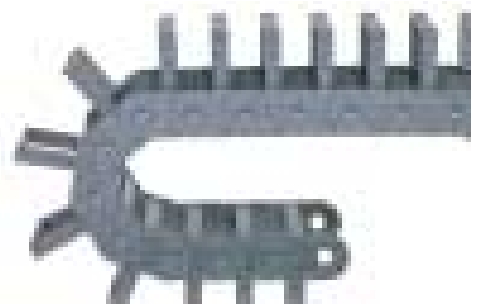
If the extender crossbars are attached along the outer radius, the side of the chain must be supported so that the crossbars do not come in contact with the running surface. We are

happy to assist with the design and assembly of this type of system. This design is also suitable for gliding applications. We are also happy to assist with guide trough requirements.

### Product Range, Extender Crossbar: Series 350



350.150...



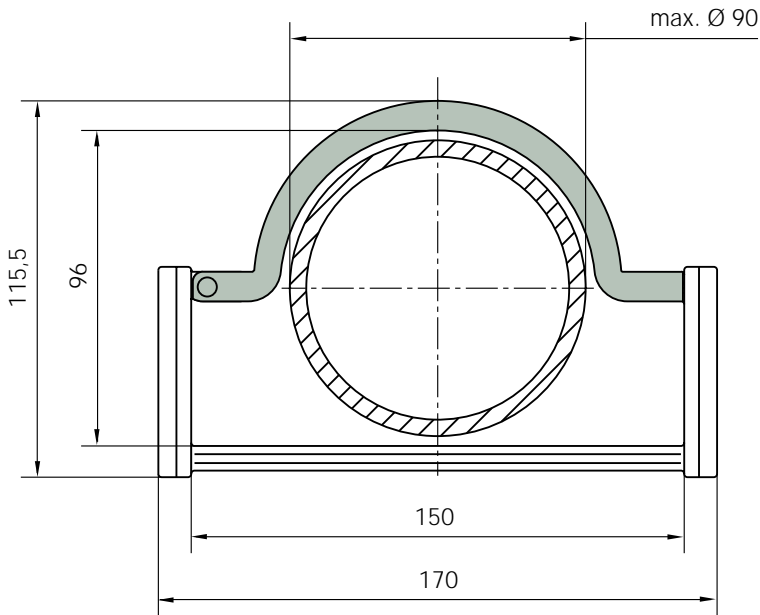
350.175...

Series	Max. Hose Ø in mm	Bending Radii in mm
350.150	90	075, 100, 125, 150, 200, 250
350.175	115	075, 100, 125, 150, 200, 250

# Extender Crossbars



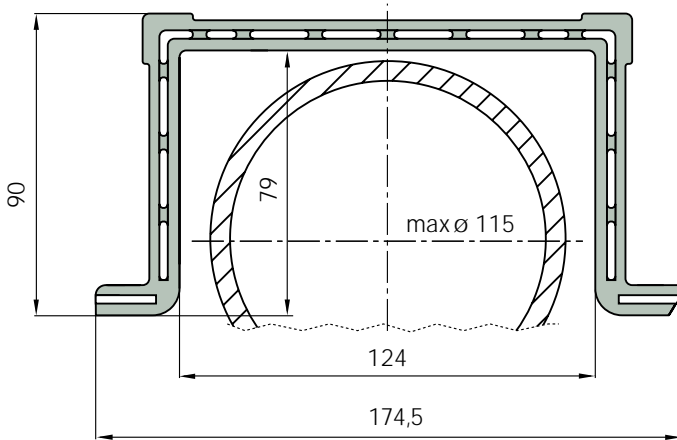
340  
350



Part No.  
(round extender crossbar)  
3500.150.D090



E2 medium



Part No.  
(square extender crossbar)  
3500.175.D115\*

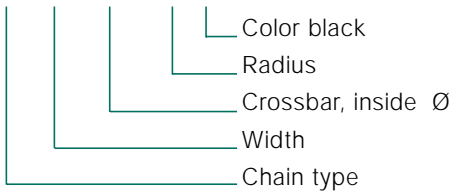


Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

## Order Example

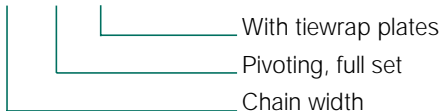
### 1. Chain selection:

350.150.D090.175.0



### 2. Mounting brackets:

3150.34.PZB



For 5 m chain, color black, with pivoting mounting brackets.

5 m 350.150.D090.175.0 and 3150.34PZ  
75 links (15 links/m)



\*This product also available in a round design - order Part No. 3500.175.RD115



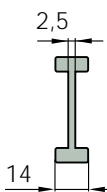
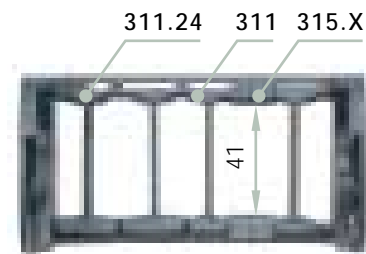
### 3. Assembly:

As with all Series 340/350 crossbars, the extender crossbars are opened using a screwdriver.

- Option 1: vertical separator
- Option 2: full-width shelves
- Option 3: shelves

### Option 1: Vertical Separator

Separators are used when vertical compartmentalization of the Energy Chain® is the only type of separation required. Spacers can be used on either side of each separator to maintain the distance between them. Spacers are necessary primarily with side-mounted chains.



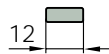
Vertical Separator

Unassembled	Part No. 301
Assembled	Part No. 311



Spacer

Unassembled	Part No. 305.08
Assembled	Part No. 315.08

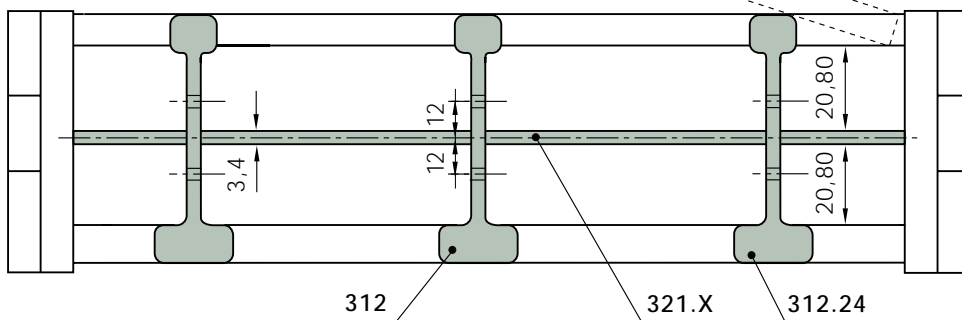
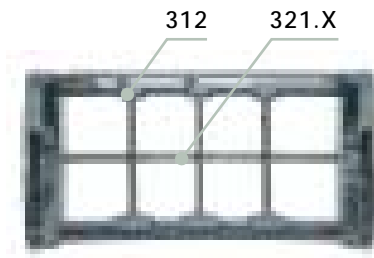


Spacer

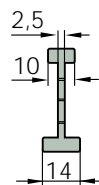
Unassembled	Part No. 305.12
Assembled	Part No. 315.12

### Option 2: Full-Width Shelves

Full-width shelves are used with applications involving numerous thin cables with similar or identical diameters. This shelf slides into place and spans the entire width of the chain.

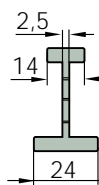


Width X in mm	Part No. Unassembled	Part No. Assembled
50	320.050	321.050
75	320.075	321.075
100	320.100	321.100
115	320.115	321.115
125	320.125	321.125
150	320.150	321.150
175	320.175	321.175
200	320.200	321.200
225	320.225	321.225
250	320.250	321.250



Vertical Separator, Slotted

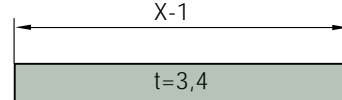
Unassembled	Part No. 302
Assembled	Part No. 312



Vertical Separator, Slotted

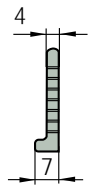
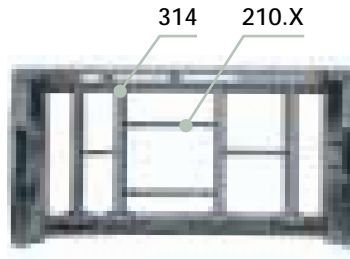
Unassembled	Part No. 302.24
Assembled	Part No. 312.24

Full-Width Shelves



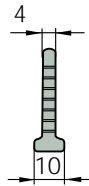
## Option 3: Shelves

This option is used most often in applications with numerous cables possessing different diameters. It allows for variable compartment heights and widths across the chain width, but can also be used for level separation across the entire inner width. Option 3 shelves can be combined with option 1 separators and side plates.



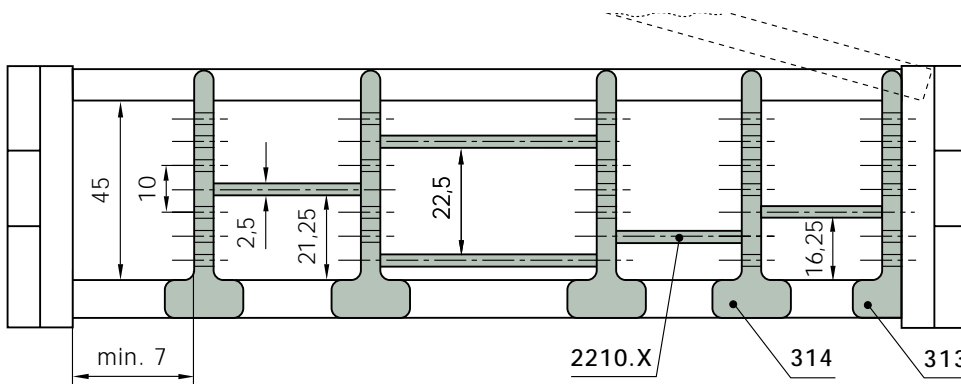
Side Plate

Unassembled	Part No. 303
Assembled	Part No. 313



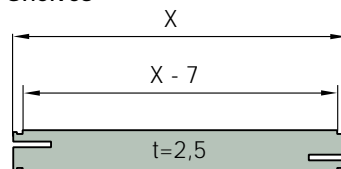
Vertical Separator

Unassembled	Part No. 304
Assembled	Part No. 314



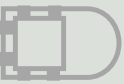
Width X in mm	Part No. Unassembled	Part No. Assembled
18	2200.18	2210.18
23	2200.23	2210.23
28	2200.28	2210.28
33	2200.33	2210.33
38	2200.38	2210.38
43	2200.43	2210.43
48	2200.48	2210.48
58	2200.58	2210.58
68	2200.68	2210.68
73	2200.73	2210.73
88	2200.88	2210.88
99	2200.99	2210.99
124	2200.124	2210.124
149	2200.149	2210.149

Shelves



E2 medium

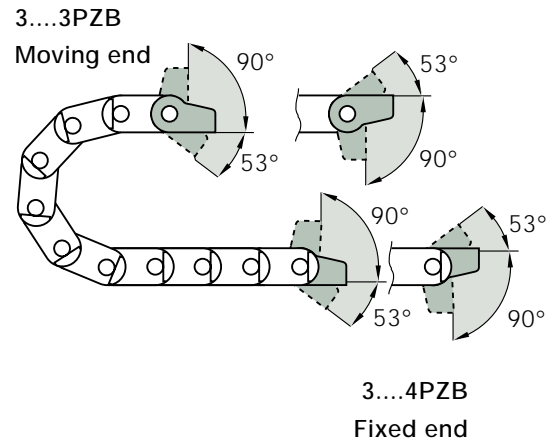
Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222



5 options for all applications

**Option 1: Pivoting**

- Standard
- Pivoting
- Short and long travels
- Confined installation conditions
- Corrosion-resistant
- Locked connections
- Vertical hanging / standing, unsupported



**Option 1: pivoting polymer**

- Standard



**Option 2: polymer locking**

- Locked connection



**Option 3: KMA pivoting**

- Universal use
- Optional C-profile



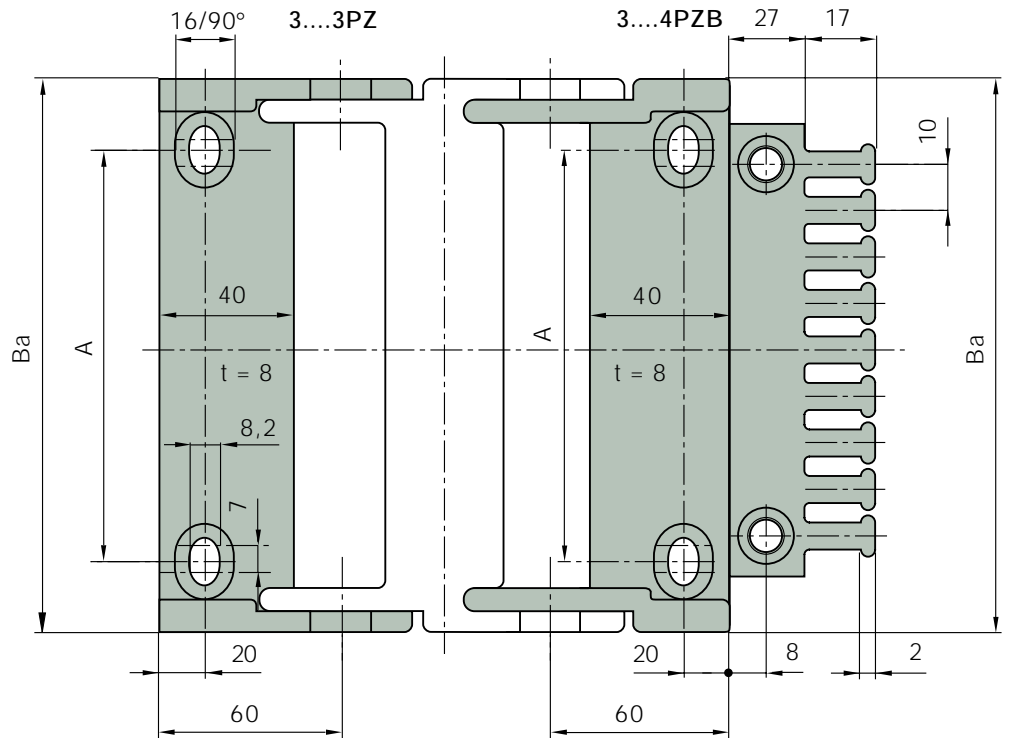
**Option 4: KMA locking**

- Universal use
- Optional C-profile



**Option 5: steel**

- Electrically conductive
- All chain widths



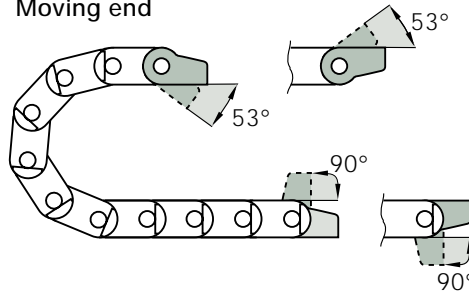
Chain Type	Part No. Full Set with Tiewrap Plates	Part No. with Tiewrap Plates and 10 Cable Tiewraps	Part No. Mounting Bracket Set	Dimension A in mm
340/350.050	3050.34PZB	3050.34PZBK1	3050.34PZ	28
340/350.075	3075.34PZB	3075.34PZBK1	3075.34PZ	53
340/350.100	3100.34PZB	3100.34PZBK1	3100.34PZ	78
340/350.115	3115.34PZB	3115.34PZBK1	3115.34PZ	93
340/350.125	3125.34PZB	3125.34PZBK1	3125.34PZ	103
340/350.150	3150.34PZB	3150.34PZBK1	3150.34PZ	128
340/350.175	3175.34PZB	3175.34PZBK1	3175.34PZ	153
340/350.200	3200.34PZB	3200.34PZBK1	3200.34PZ	178
340/350.225	3225.34PZB	3225.34PZBK1	3225.34PZ	203
340/350.250	3250.34PZB	3250.34PZBK1	3250.34PZ	228

- 3...34 PZB = Full set, each part with pin/bore, including tiewrap plates
- 3...3 PZB = Mounting bracket with bore, including tiewrap plates
- 3...4 PZB = Mounting bracket with pin, including tiewrap plates

## Option 2: Locking

- Locked connections
- Vertical hanging / standing travels
- Extreme accelerations
- Corrosion-resistant
- If the 1st chain link must pivot
- Gliding applications

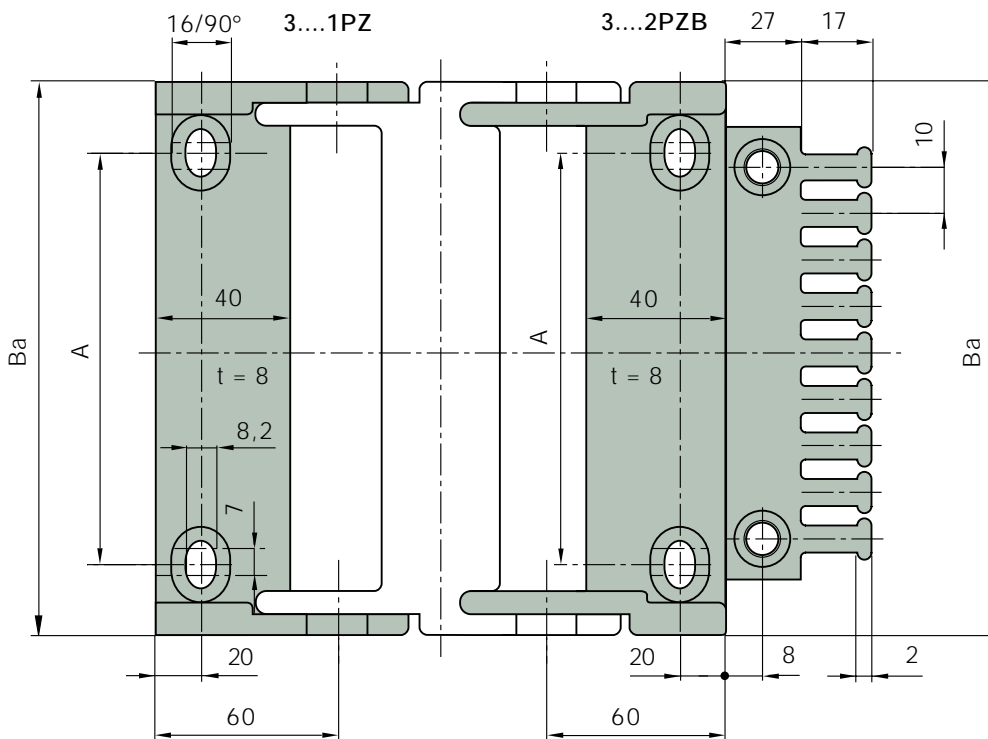
3....1PZB  
Moving end



3....2PZB  
Fixed end

### Option 2: polymer locking

- Locked connection



Chain Type	Part No. Full Set with Tiewrap Plates	Part No. with Tiewrap Plates and 10 Cable Tiewraps	Part No. Mounting Bracket Set	Dimension A in mm
340/350.050	3050.12PZB	3050.12PZBK1	3050.12PZ	28
340/350.075	3075.12PZB	3075.12PZBK1	3075.12PZ	53
340/350.100	3100.12PZB	3100.12PZBK1	3100.12PZ	78
340/350.115	3115.12PZB	3115.12PZBK1	3115.12PZ	93
340/350.125	3125.12PZB	3125.12PZBK1	3125.12PZ	103
340/350.150	3150.12PZB	3150.12PZBK1	3150.12PZ	128
340/350.175	3175.12PZB	3175.12PZBK1	3175.12PZ	153
340/350.200	3200.12PZB	3200.12PZBK1	3200.12PZ	178
340/350.225	3225.12PZB	3225.12PZBK1	3225.12PZ	203
340/350.250	3250.12PZB	3250.12PZBK1	3250.12PZ	228

- 3...12 PZB = Full set, each part with pin/bore, including tiewrap plates
- 3...1 PZB = Mounting bracket with bore, including tiewrap plates
- 3...2 PZB = Mounting bracket with pin, including tiewrap plates

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

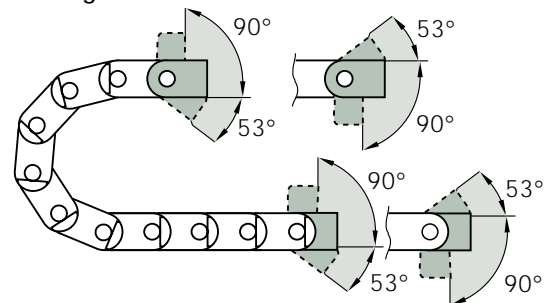


Option 3: KMA Pivoting

- Pivoting
- Short and long travels
- Confined installation conditions
- Corrosion-resistant
- Universal use
- Optional integrated C-profile for strain relief
- Bolted connection outside of chain cross-section
- Locked connections
- Vertical hanging / standing, unsupported

30000...1

Moving end



30000...2  
Fixed end

Option 3: KMA pivoting

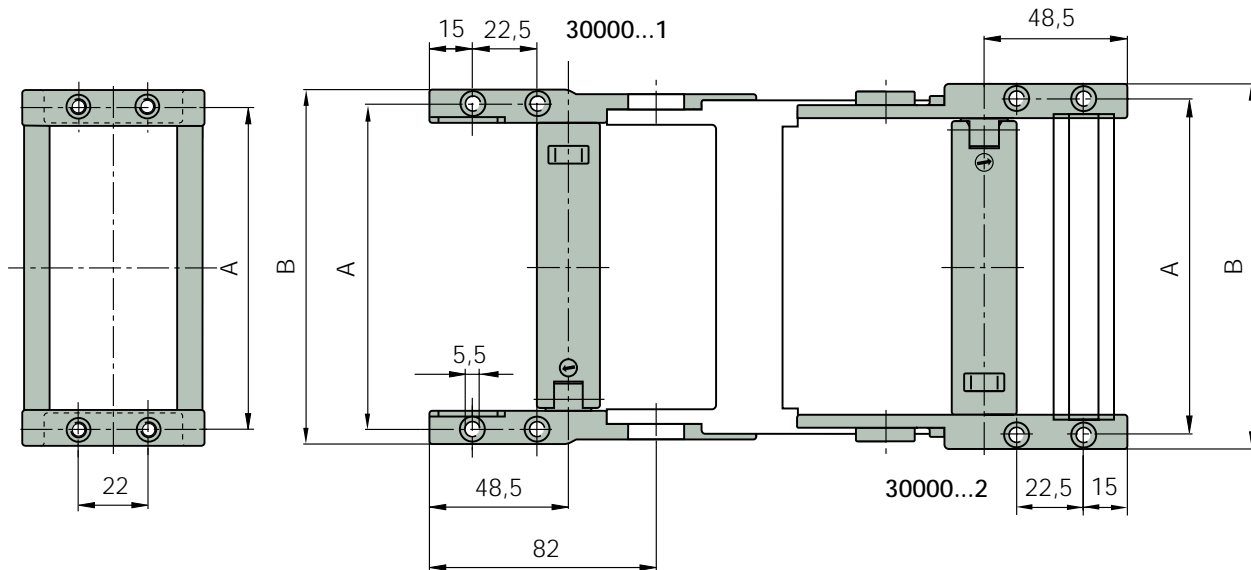
- Universal use
- Optional C-profile



Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

igus® GmbH  
51127 Cologne

Internet: <http://www.igus.de>  
email: [info@igus.de](mailto:info@igus.de)



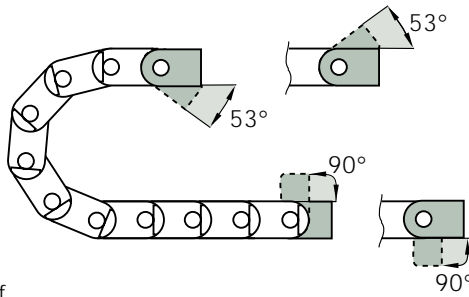
Chain Type	Part No. Full Set	Part No. with Assembled C-Profile	Dimension A in mm	Dimension B in mm
340/350.050	30000.050.12	30000.050.12C	63	74
340/350.075	30000.075.12	30000.075.12C	88	99
340/350.100	30000.100.12	30000.100.12C	113	124
340/350.115	30000.115.12	30000.115.12C	128	139
340/350.125	30000.125.12	30000.125.12C	138	149
340/350.150	30000.150.12	30000.150.12C	163	174
340/350.175	30000.175.12	30000.175.12C	188	199
340/350.200	30000.200.12	30000.200.12C	213	224
340/350.225	30000.225.12	30000.225.12C	238	249
340/350.250	30000.250.12	30000.250.12C	263	274

30...12 = Full set, each part with pin/bore  
 30...1 = Mounting bracket with bore  
 30...2 = Mounting bracket with pin

## Option 4: KMA Locking

- + Locked connections
- + Vertical hanging / standing travels
- + Extreme accelerations
- + Corrosion-resistant
- + Universal use
- + Optional integrated C-profile for strain relief
- + Bolted connection outside of chain cross-section
- If the 1st chain link must pivot
- Gliding applications

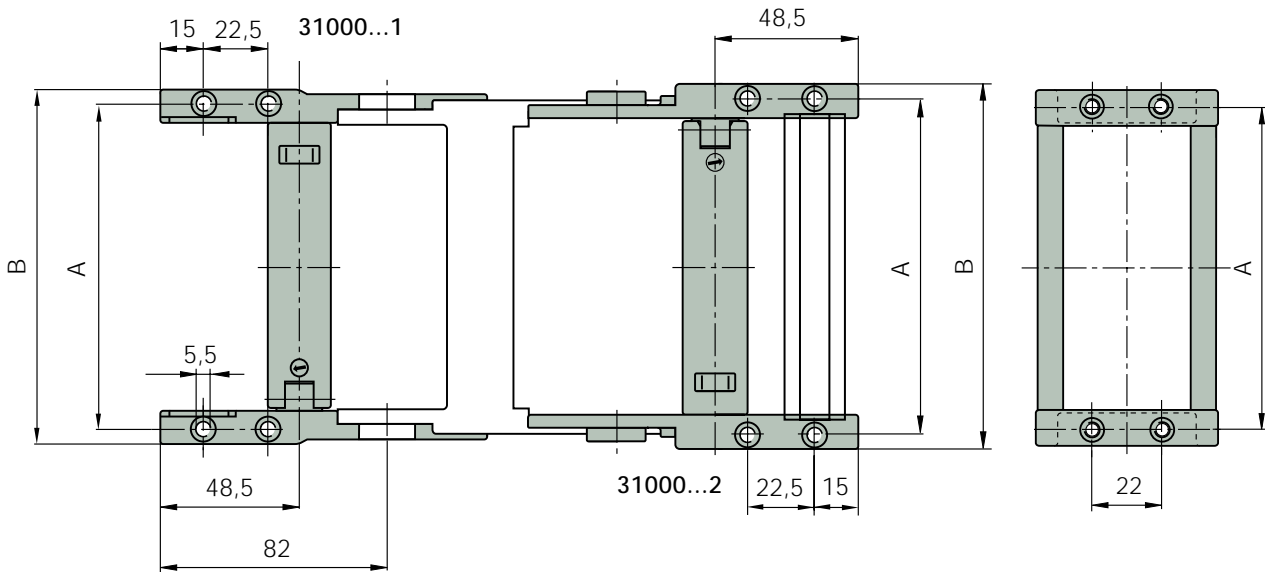
31000...1  
Moving end



31000...2  
Fixed end

### Option 4: KMA locking

- Universal use
- Optional C-profile



Chain Type	Part No. Full Set	Part No. with Assembled C-Profile	Dimension A in mm	Dimension B in mm
340/350.050	31000.050.12	31000.050.12C	63	74
340/350.075	31000.075.12	31000.075.12C	88	99
340/350.100	31000.100.12	31000.100.12C	113	124
340/350.115	31000.115.12	31000.115.12C	128	139
340/350.125	31000.125.12	31000.125.12C	138	149
340/350.150	31000.150.12	31000.150.12C	163	174
340/350.175	31000.175.12	31000.175.12C	188	199
340/350.200	31000.200.12	31000.200.12C	213	224
340/350.225	31000.225.12	31000.225.12C	238	249
340/350.250	31000.250.12	31000.250.12C	263	274

31...12 = Full set, each part with pin/bore  
 31...1 = KMA with bore  
 31...2 = KMA with pin

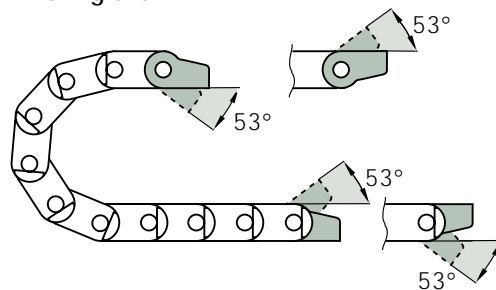
Phone +49- (0) 22 03 96 49-0  
 Fax +49- (0) 22 03 96 49-222



Option 5: Steel

- + One part for all chain widths
- + Electrically conductive
- Double the number of pins/bore required
- Multiple mounting options
- Pre-assembly (consult igus®)

3000.1  
Moving end



3000.2  
Fixed end

Option 5: steel

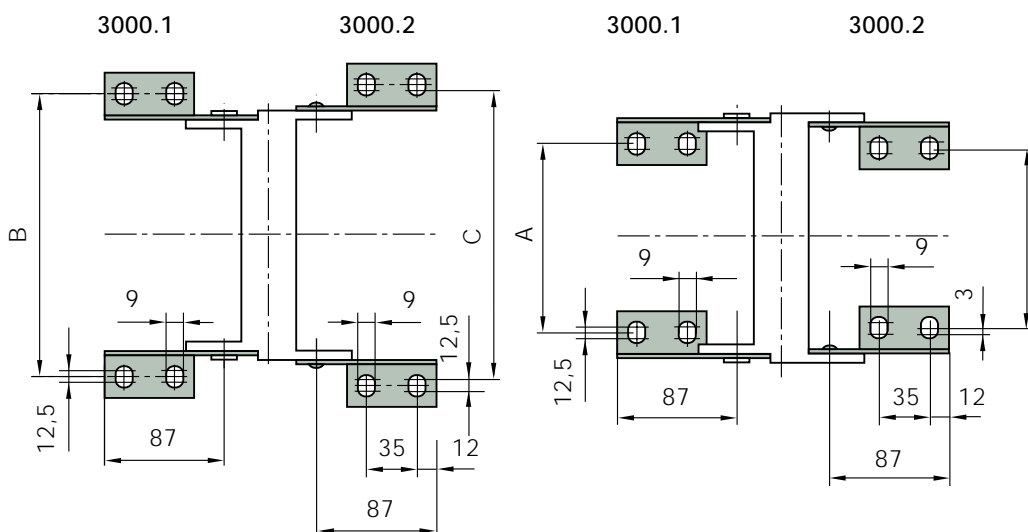
- Electrically conductive
- All chain widths



Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

igus® GmbH  
51127 Cologne

Internet: <http://www.igus.de>  
email: [info@igus.de](mailto:info@igus.de)



Chain Type	Part No. Full Set	Dimension A in mm	Dimension B in mm	Dimension C in mm
340/350.050	3000.12	-	86	97
340/350.075	3000.12	53	111	122
340/350.100	3000.12	78	136	147
340/350.115	3000.12	93	151	162
340/350.125	3000.12	103	161	172
340/350.150	3000.12	128	186	197
340/350.175	3000.12	153	212	224
340/350.200	3000.12	178	236	247
340/350.225	3000.12	203	261	272
340/350.250	3000.12	228	286	297

3000.12 = Full set, 4 parts, 2 with pin, 2 with bore

3000.1 = Mounting bracket with bore, 1 part left / right

3000.2 = Mounting bracket with pin, 1 part left / right

### Strain Relief for Polymer Mounting Brackets

(pivoting or locking)

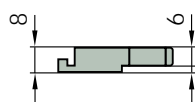
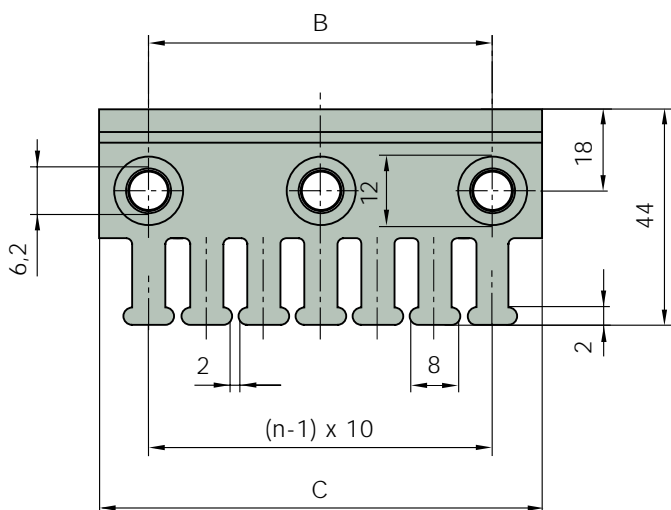
The strain relief tiewrap plates can be snapped directly onto the mounting bracket without additional hardware. When the mounting brackets are bolted into place, the tiewrap plates are also connected firmly to the machine surface. No separate installation is necessary. Cable tiewraps secure cables using the "teeth" of the tiewrap plate for time-saving, effective strain relief.



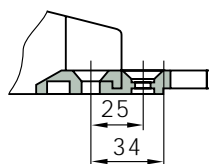
- Additional strain relief elements
- ▶ Strain Relief, Page 9.97

E2 medium

### Tiewrap Plates as Individual Parts



Tiewrap plates as individual parts



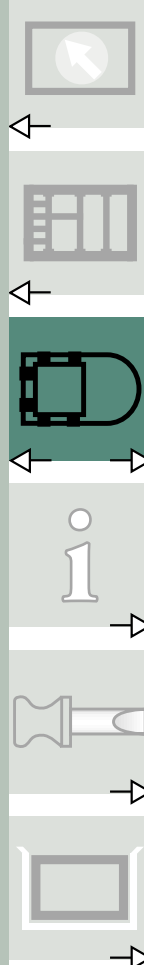
Drawn assembled

Tiewrap Plates	n Number of Teeth	C Overall Width	B = Distance Between Bore Holes	Center Bore Hole
3050.ZB	5	50 mm	30 mm	no
3075.ZB	7	75 mm	55 mm	no
3100.ZB	10	100 mm	80 mm	no
3115.ZB	11	115 mm	95 mm	no
3125.ZB	12	125 mm	105 mm	no
3150.ZB	15	150 mm	130 mm	no
3175.ZB	17	175 mm	155 mm	no
3200.ZB	20	200 mm	180 mm	yes
3225.ZB	22	225 mm	205 mm	yes
3250.ZB	25	250 mm	230 mm	yes

### Cable Tiewraps as Individual Parts

Cable Tiewraps (100-Piece Bag)	Width x Length	Max. Ø	Tensile Strength
CFB.001	4,8 x 150 mm	36 mm	222 N

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222



### "Double" Strain Relief:

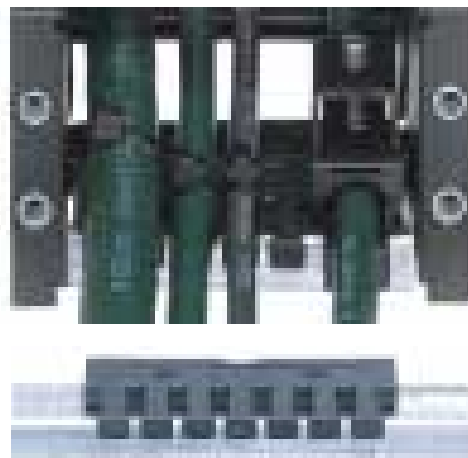
If an Energy Chain® is harnessed with a very large number of cables, strain relief may be necessary at two levels. Our **30XX.Z** and **30XX.ZS** strain relief systems were developed for this purpose. They can be placed in any position along the Energy Chain®. As required, the **30XX.ZS** strain relief system is simply clamped onto the crossbar of the chain link. The **30XX.Z** strain relief system is simply clamped onto the opening crossbar or onto the fixed crossbar of the chain link, as needed. If the strain relief system is to be fastened to the crossbars of the KMA, the **30XX.ZS** strain relief system is used for both crossbars.



Part No. for Fixed Part	Part No. for Crossbars or KMA	Width, Strain Relief in mm
3050.Z	3050.ZS	50
3075.Z	3075.ZS	75

### Strain Relief for KMA

When a C-profile is used, the strain relief element can be attached directly to the KMA brackets without using any bolts. This is accomplished by simply clamping the tiwrap plate onto the C-profile. The C-profile can be placed at the top, bottom or both top and bottom of the KMA bracket to accommodate both tiwrap plates and strain relief clamps simultaneously.



### Clip-on Tiwrap Plates for the C-Profile

For easy assembly without bolts, the 3050.ZC and 3075.ZC plates can be clipped directly into the C-profile without a bolt assembly.

Part No.	Width, Strain Relief in mm
3050.ZC	50
3075.ZC	75

### Strain Relief for KMA and Steel Mounting Brackets

Clip-on connection is not possible with steel mounting brackets. In this case, the tiwrap plates must be bolted directly into the separate bore holes in front of the mounting bracket. Or, the **30XX.Z** and **ZS** double strain relief system can be substituted if preferred.

► Page 9.97.

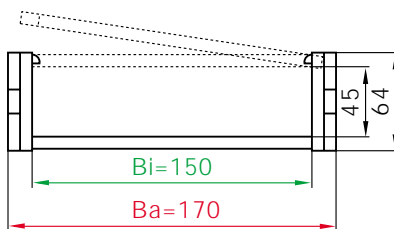


Order Example

350.150...

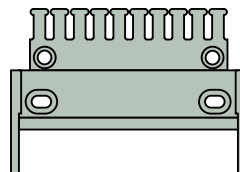
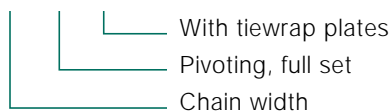
1. Chain selection:

350.150.100.0



2. Mounting brackets:

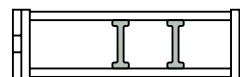
3150.34.PZB



3. Interior separation:

2 separators, unassembled, (Part No. 301) or assembled every other chain link (Part No. 311)

Alternative interior separation configuration according to design layout possible.



For 2 m chain, color black, with pivoting mounting brackets.

2 m 350.150.100.0 and 3150.34PZ



4. Other technical data on Guide Troughs ► Page 5.133

Technical Data

Chain Type	Weight Per Link (kg)	Weight Per Meter (kg)
340/350.050	0,107	1,603
340/350.075	0,119	1,778
340/350.100	0,128	1,925
340/350.115	0,132	1,985
340/350.125	0,135	2,025
340/350.150	0,144	2,165
340/350.175	0,152	2,278
340/350.200	0,163	2,448
340/350.225	0,172	2,587
340/350.250	0,182	2,725

The following applies to all series listed here:

Material		igumid G
Permitted temperature	°C	-40/+130
Gliding speed (maximum)	m/s	5
Unsupported v (maximum)	m/s	10
Flammability class		VDE 0304 IIC UL94 HB

● Details of material properties

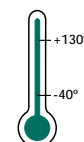
► Design, Page 1.61



Guide Troughs

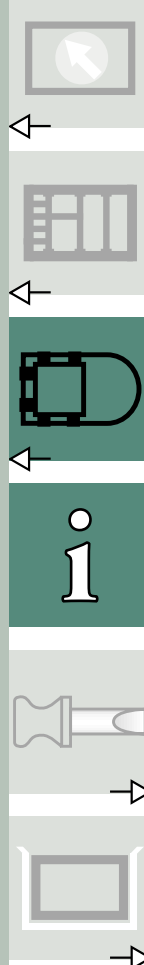


● Further information on Guide Troughs, ► Page 8.6



E2 medium

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222





1. To open crossbars: press screwdriver into tab on top of link, lever screwdriver until crossbar opens



2. Repeat Step 1 on other side



3. To close crossbars: push down on crossbar with thumb or screwdriver until it snaps into place



4. Joining chain sections: push sections together; angle one side until pin snaps into bore; repeat on other side



5. Separating chain sections: insert screwdriver between two links



6. Twist until pin disengages from bore; pull sections apart



7. Attaching mounting brackets: snap bracket into link (see Step 4)



8. Snap tie-wrap plate into bottom groove of the mounting bracket

# Guide Troughs: Series 340/350 "E2 medium"



340  
350

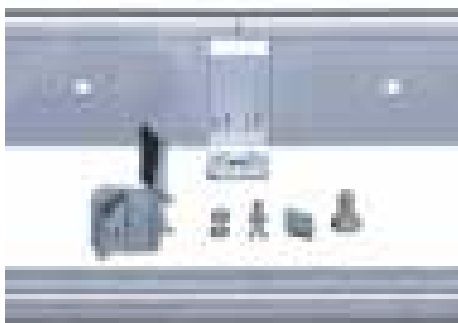
Guide troughs are used with applications where the upper run of the Energy Chain® glides on the lower run. If using igus® steel guide troughs, the following components are required:

- Guide troughs without glide bars  
**Part No. 93.30**
- Guide troughs with glide bars  
**Part No. 93.31**
- Installation sets as end connector  
**Part No. 93.50.XX**

.XX indicates the length of the C-profile on which the guide trough is mounted. The values and part numbers are specified in the adjacent table.

Standard lengths of the trough components and glide bars = 2 m

The required overall length of the guide trough directly correlates to the length of travel.



Width of selected Energy Chain®  
350.075.200.0

Dimension D

Installation Part No.

.05	75	93.50.150
.075	100	93.50.200
.100	125	93.50.250
.115	140	93.50.250
.125	150	93.50.300
.150	175	93.50.300
.175	200	93.50.300
.200	225	93.50.350
.225	250	93.50.350
.250	275	93.50.350

### Example:

Length of travel 50 m  
Center mounted

### Required guide troughs:

- 25 m guide trough without glide bar
- 25 m guide trough with glide bar
- = 13 profiles of 2 m guide trough without glide bar **Part No. 93.30**
- = 13 profiles of 2 m guide trough with glide bar **Part No. 93.31**

### Required number of installation sets:

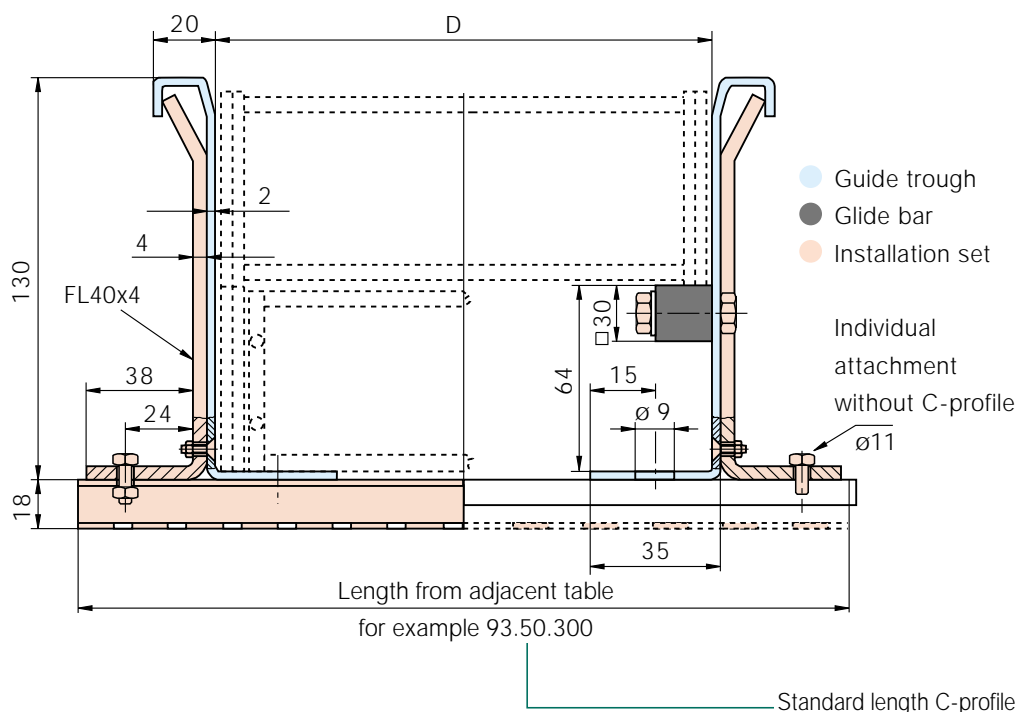
= Number of guide trough components + 1  
= 13 + 13 + 1 = 27

Part No. of the installation sets **93.50.XXX**

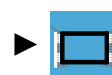
Example:

93.50.300 for 300 mm long C-profile.

Specialized dimensions are also available if space is restricted.



- For this series there is also the tubular trough, which was presented with the "IF-Award 2000"
- ▶ Page 8.22



- For rapid installation: Snap-in trough system SP/AP
- ▶ ab Page 8.25

E2 medium

Phone +49- (0) 22 03 96 49-0  
Fax +49- (0) 22 03 96 49-222

