



Price index

UL94-V2 classifications
upon requestESD classification:
Electrically conductive
ESD/ATEX version upon requestiF-Design Award Winner
Series R68E-Tubes with HT-material
for hot chips up to 850°C
available upon requestTo open the E-Tube Series R lift up the lid
(with a screwdriver) and remove the lid

When to use the Series R68:

- If particularly quiet operation is required
- At very high speed
- If chip protection is subject to stringent requirements



When not to use it:

- If a particularly low-cost solution is the main factor
 - ▶ Series R117/R118, page 6.6
- If no chip protection is required
 - ▶ Series 2400/2500 E2/000, page 5.102

- 1 Protection for cables and hoses, against hot chips
- 2 Large pins for high stability
- 3 Smooth, chip-repellent exterior
- 4 Small pitch for low-noise, smooth operation
- 5 Removable lids along outer radius
- 6 Fully enclosed
- 7 KMA mounting brackets with attachment capability on all sides
- 8 Integrated strain relief available especially for E-Tubes ▶ page 6.48



Order example complete E-Tube

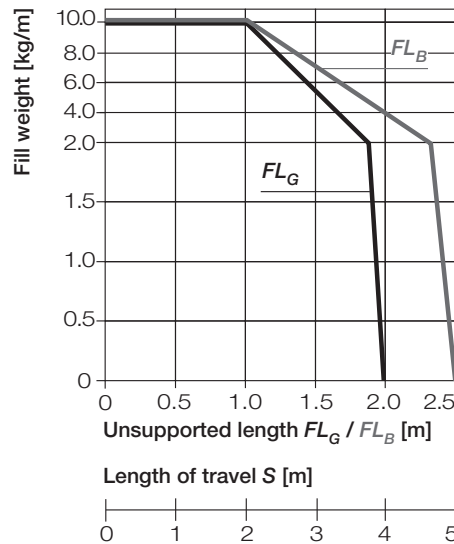
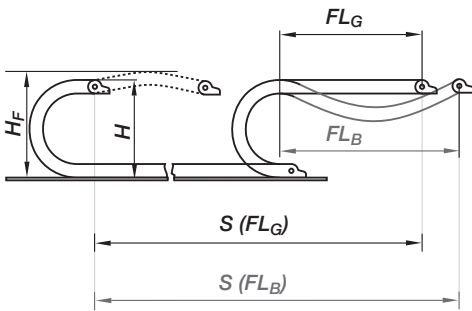
Please indicate E-Tube-lengths or number of links **Example: 1 m or 28 links**1 m **68.100.100.0**
 E-Tube
with 2 separators **311** assembled every 2nd link
 Interior separation
1 set **680.100.12**
 Mounting bracket


Unsupported length

FL_G = with straight upper run

FL_B = with permitted sag

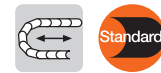
Further information ► **Design, page 1.12**



- S = Length of travel
 - R = Bending radius
 - H = Nominal clearance height
 - H_F = Required clearance height
 - H_{RI} = Trough inner height
 - D = Overlength E-Chain® radius in final position
 - $K = \pi \cdot R + \text{"safety"}$
 - D_2 = Over length - long travels, gliding
 - K_2 = *Further add-on
 - H_2 = *Mounting height
- *if the mounting bracket location is set lower

Other installation methods

- Vertical, hanging ≤ 60 m
- Vertical, standing ≤ 4 m
- Side mounted, un supp. ≤ 2 m
- Rotary requires further calculation
- Unsupported length of upper run = upon request

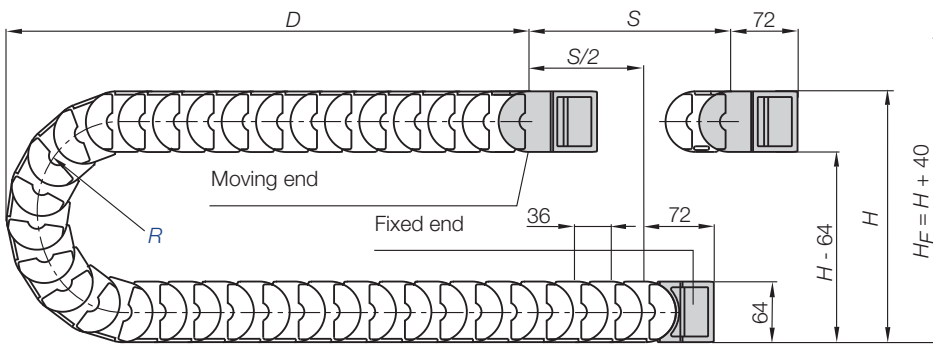


Short travels - unsupported

Unsupported E-Chains® feature positive camber over short travels. This must be accounted for when specifying the clearance height H_F . Please consult igus® if space is particularly restricted.

The required clearance height:

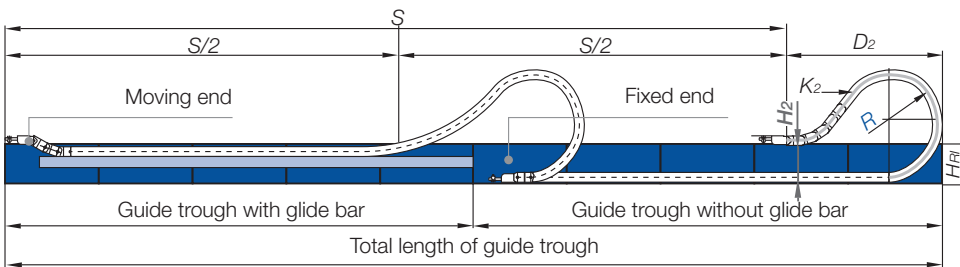
$H_F = H + 40$ mm
(with 2,5 kg/m fill weight)



Pitch = 36 mm/link Links/m = 28 (1008 mm) Chain length = $S/2 + K$

R	100	125	150	175	200	225	250	300
H	265	315	365	415	465	515	565	665
D	200	225	250	275	300	325	350	400
K	500	650	725	800	875	975	1050	1225
H ₂	265	220	220	220	220	220	220	220
D ₂	200	370	440	540	650	700	850	1050
K ₂	500	648	792	900	1116	1269	1476	1800

Long travel lengths from 10 m to max. 100 m Chain length = $S/2 + K_2$



In case of travels between 4 and 10 m we recommend a longer unsupported length.



Gliding, long travel applications (max. 100 m)

In this case the E-Chain® upper run will be introduced in a guide trough on the lower run. We recommend to realize the engineering of such a plant by our technicians.

Technical Data

Speed / acceleration FL_G	max. 10 [m/s] / max. 100 [m/s ²]
Speed / acceleration FL_B	max. 3 [m/s] / max. 6 [m/s ²]
Gliding speed / acceleration (maximum)	max. 3 [m/s] / max. 10 [m/s ²]
Material - permitted temperature °C	igumid G / -40° up to +120° C
Flammability class, igumid G	VDE 0304 IIC UL94 HB

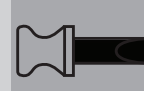


Details of material properties
► page 1.38

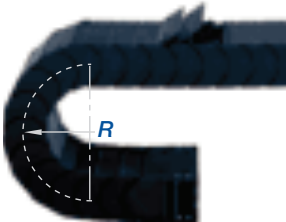
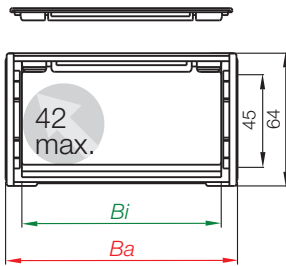
45

E2 E-Tubes Type R
Inner height: 45 mm

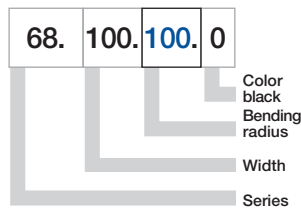
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Fax +49- (0) 22 03-96 49-222



► page 6.5



Part No. structure



Series R68 - snap-open along outer radius

Part No.	B_i [mm]	B_a [mm]	R [mm]	Bending radii								Weight [kg/m]
68.050.	50	68	100	125	150	175	200	225	250	300	≈ 1,90	
68.075.	75	93	100	125	150	175	200	225	250	300	≈ 2,18	
68.100.	100	118	100	125	150	175	200	225	250	300	≈ 2,46	
68.115.	115	133	100	125	150	175	200	225	250	300	≈ 2,63	
68.125.	125	143	100	125	150	175	200	225	250	300	≈ 2,77	
68.150.	150	168	100	125	150	175	200	225	250	300	≈ 3,05	
68.175.	175	193	100	125	150	175	200	225	250	300	≈ 3,36	
68.200.	200	218	100	125	150	175	200	225	250	300	≈ 3,64	
68.225.	225	243	100	125	150	175	200	225	250	300	≈ 3,92	
68.250.	250	268	100	125	150	175	200	225	250	300	≈ 4,23	

 Supplement Part No. with required radius. Example: 68.100. 100.0

0 = standard color, other colors ► page 1.39 · Pitch = 36 mm/link - Links/m = 28



Hot Chips up to 850°C

E-Tubes that repel hot chips, up to 850 °C. Some applications, depending on amount and size of the chips, can burn or melt the surface. That is no longer the case with the igus® "igumid HT" material.

Order example - Full E-Tube made of HT*: **68.100.100.0.HT**

Order example - Lids made of HT: **68.100HT.100.0**

*for long travels upon request

Delivery time up to 4 weeks! Further Information: www.igus.de/en/HT



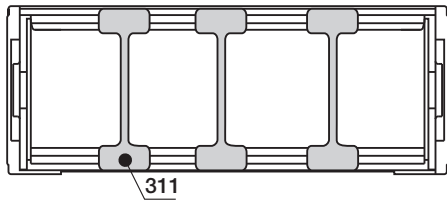
Option 1: Vertical Separators

Vertical Separators are used if a vertical subdivision of the E-Chain® interior is required -

By standard Vertical Separators are assembled every other E-Chain® link

- **Standard** subdivision with Vertical Separator 311

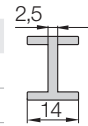
(if you select bending radius R = 100 please use Vertical Separator 34511)



Vertical Separator*

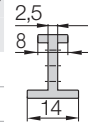
unassembled	301
assembled	311

*not suitable for bending radius = 100



Vertical Separator, for bending radius R = 100

unassembled	34501
assembled	34511

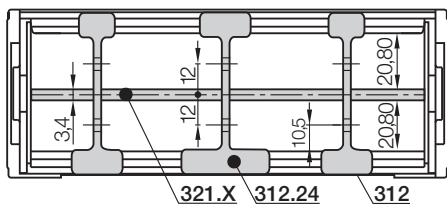


Option 2: Full-Width Shelves

For applications involving many thin cables with similar or identical diameters

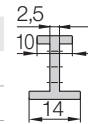
- Vertical Separator, slotted 312 or Vertical Separator, slotted 312.24 with wide base

can be combined with Full-Width Shelf 221.X



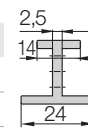
Vert. Separator, slotted

unassembled	302
assembled	312



Vert. Separator, slotted

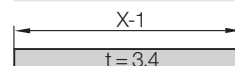
unassembled	302.24
assembled	312.24



Width X [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

Width X [mm]	Part No. unassembled	Part No. assembled
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

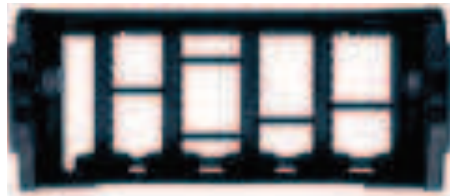
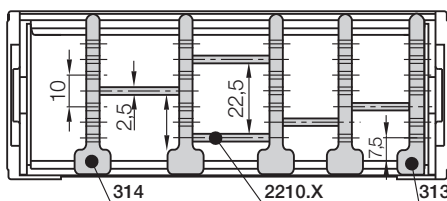
Full-Width Shelf



Option 3: Shelves

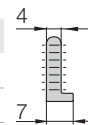
For applications involving many cables with similar or identical diameters. Partial separation into individual chambers can be achieved and the entire width Bi-10 mm can be used

- Shelf 2210.X can be combined with Side Plate 313 and Middle Plate 314
- Option 3 "Shelves" can also be combined with option 1 "Vertical Separators"



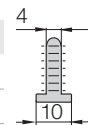
Side Plate

unassembled	303
assembled	313



Middle Plate

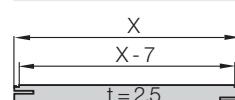
unassembled	304
assembled	314



Width X [mm]	Part No. unassembled	Part No. assembled
018	2200.18	2210.18
023	2200.23	2210.23
028	2200.28	2210.28
033	2200.33	2210.33
038	2200.38	2210.38
043	2200.43	2210.43
048	2200.48	2210.48

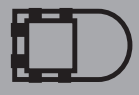
Width X [mm]	Part No. unassembled	Part No. assembled
058	2200.58	2210.58
068	2200.68	2210.68
073	2200.73	2210.73
088	2200.88	2210.88
099	2200.99	2210.99
124	2200.124	2210.124
149	2200.149	2210.149

Shelf

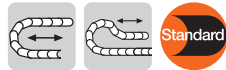


E2 E-Tubes Type R
Inner height: 45 mm

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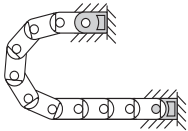
▶ page 6.5



Option KMA* - pivoting

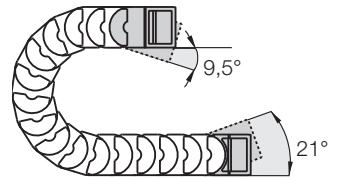
- Recommended for unsupported and gliding applications
- Option - KMA with Quickflange
- Short and long travels
- Universal mountable with attachment capability on all sides

*KMA = Polymer Metal Mounting Bracket



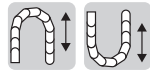
The attachment variants arising automatically by the choice of the KMA mounting bracket

Moving end (outer link)
680...1



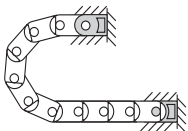
680...2

Fixed end (inner link)



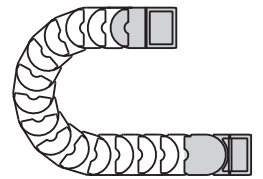
Option KMA - locking

- Recommended for vertical hanging / standing applications
- Option - KMA with Quickflange
- At very high speed and acceleration
- Universal mountable with attachment capability on all sides
- Flush mounting at both ends of the E-Tube



The attachment variants arising automatically by the choice of the KMA mounting bracket

Moving end (outer link)
680...3



680...4

Fixed end (inner link)

Dimensions and order configurations



Quickflange upon request

Part No. structure (pivoting)

680.	100.	12	A
------	------	----	---



A... must be indicated on preassembled configurations
Full set pivoting = 12

Width
KMA for selected chain type

Full set, for both ends:

680.100.12

Single-part order:

680.100.1

Mounting bracket with bore

680.100.2

Mounting bracket with pin

Part No. structure (locking)

680.	100.	34	A
------	------	----	---

A... must be indicated on preassembled configurations
Full set locking = 34

Width
KMA for selected chain type

Full set, for both ends:

680.100.34

Single-part order:

680.100.3

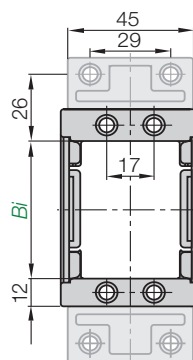
Mounting bracket with bore

680.100.4

Mounting bracket with pin

Quickflange

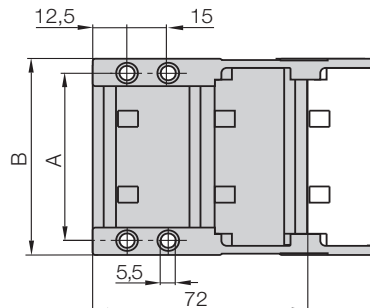
Part No. 16800.QF, unassembled



680...1 Standard! (pivoting)

680...3 (locking)

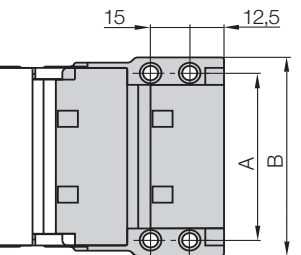
Moving end



Standard! (pivoting) 680...2

(locking) 680...4

Fixed end



For Series	Part No. Full set	Part No. Full set with Quickflange	Dim. A [mm]	Dim. B [mm]
68.050. ▶	680.050. <input type="checkbox"/>	680.050. <input type="checkbox"/> QF	62	74
68.075. ▶	680.075. <input type="checkbox"/>	680.075. <input type="checkbox"/> QF	87	99
68.100. ▶	680.100. <input type="checkbox"/>	680.100. <input type="checkbox"/> QF	112	124
68.115. ▶	680.115. <input type="checkbox"/>	680.115. <input type="checkbox"/> QF	127	139
68.125. ▶	680.125. <input type="checkbox"/>	680.125. <input type="checkbox"/> QF	137	149
68.150. ▶	680.150. <input type="checkbox"/>	680.150. <input type="checkbox"/> QF	162	174
68.175. ▶	680.175. <input type="checkbox"/>	680.175. <input type="checkbox"/> QF	187	199
68.200. ▶	680.200. <input type="checkbox"/>	680.200. <input type="checkbox"/> QF	212	224
68.225. ▶	680.225. <input type="checkbox"/>	680.225. <input type="checkbox"/> QF	237	249
68.250. ▶	680.250. <input type="checkbox"/>	680.250. <input type="checkbox"/> QF	262	274

Please add the Part No. with the requested index - 12 for the pivoting configuration

e.g. 680.100.12 or 34 for the locking configuration e.g. 680.100.34

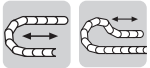
For the preassembled mode please add the index A e.g. 680.100.34 A

Quickflange unassembled: Part No. 16800.QF

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

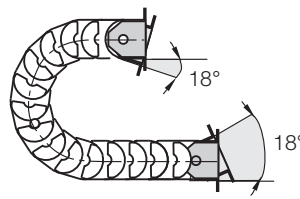




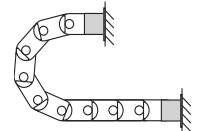
Flange mounting brackets made of steel

- Metallic flange brackets with popular hole patterns, easily be replaced by their modern successors, without having to alter the hole pattern
- Bolted connection outside of chain cross-section possible
- Universal mountable with attachment capability on all sides
- Steel, galvanized
- One-piece mounting bracket
- High stability

Moving end (outer link)
906.462.X.1

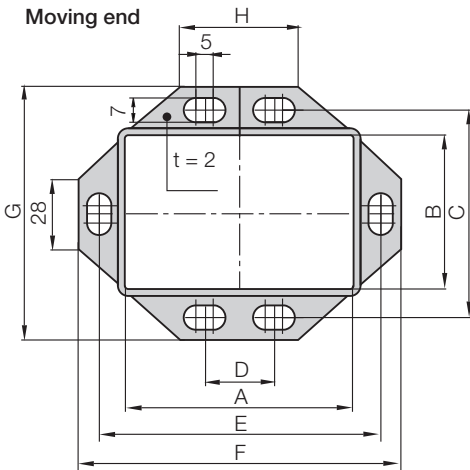


906.462.X.2
Fixed end (inner link)



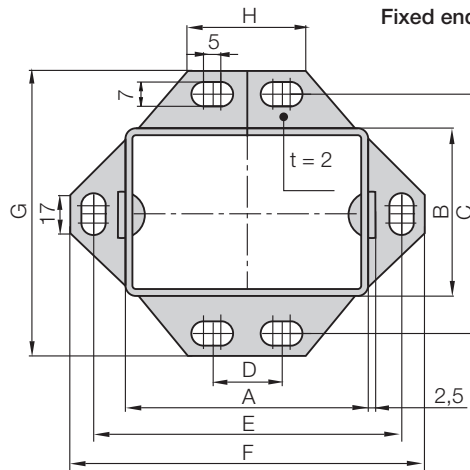
Flush mounting possibilities at both ends of the E-Tube

906.462.X.1
Moving end



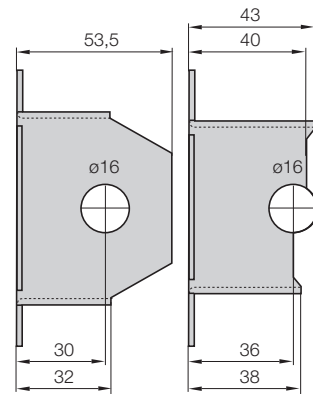
Hole pattern metallic flange
Moving end 906.462.X.1

906.462.X.2
Fixed end



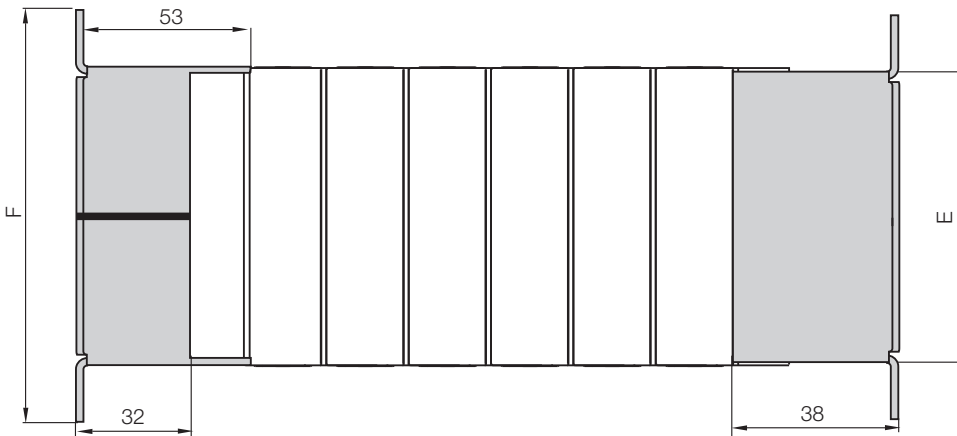
Hole pattern metallic flange
Fixed end 906.462.X.2

Dimensions and order configurations



Moving end
906.462.X.1

Fixed end
906.462.X.2



Full set, for both ends:

906. 462. X. 12.

Single-part order:

906. 462. X. 1

Mounting bracket with bore

906. 462. X. 2.

Mounting bracket with pin

For Series	Hole pattern	Part No. Moving end	Part No. Fixed end	Bi [mm]	Ba [mm]	Dim. A [mm]	Dim. B [mm]	Dim. C [mm]	Dim. D [mm]	Dim. E [mm]	Dim. F [mm]	Dim. G [mm]	Dim. H [mm]
68.075	68.1	906.462.1.1	906.462.1.2	75	93	83,4	59	80	30	104	116	95	38
68.115	68.2	906.462.2.1	906.462.2.2	115	133	123,4	59	80	50	144	156	95	78
68.175	68.3	906.462.3.1	906.462.3.2	175	193	183,4	59	80	100	204	216	95	138

Phone +49- (0) 22 03-96 49-800
Fax +49- (0) 22 03-96 49-222





Integrated strain relief for E2 E-Tubes - Series R

Characteristic features: ● Strain relief disappears completely in the E-Tube ● Easy to assemble without any screws ● **Use:** Individual part for the manufacturing of switchgear cabinets or for the assembly of machines ● Accessory for igus® E-ChainSystems®

Part. No.	Width [mm]	Number of teeth	For Series
3050.Z	50	5	R68
3075.Z	75	7	R68

Number of tiewrap plates 3050.Z for selected inner width B_i

B_i [mm]	Width tiewrap plate [mm]	Number of tiewrap plate n	Total number of teeth
50	–	–	–
75	–	–	–
100	50	1	5
115	50	1	5
125	50	1	5
150	50	2	10
175	50	2	10
200	50	3	15
225	50	3	15
250	50	4	20

Number of tiewrap plates 3075.Z for selected inner width B_i

B_i [mm]	Width tiewrap plate [mm]	Number of tiewrap plate n	Total number of teeth
50	–	–	–
75	–	–	–
100	–	–	–
115	75	1	7
125	75	1	7
150	75	1	7
175	75	2	14
200	75	2	14
225	75	3	21
250	75	3	21

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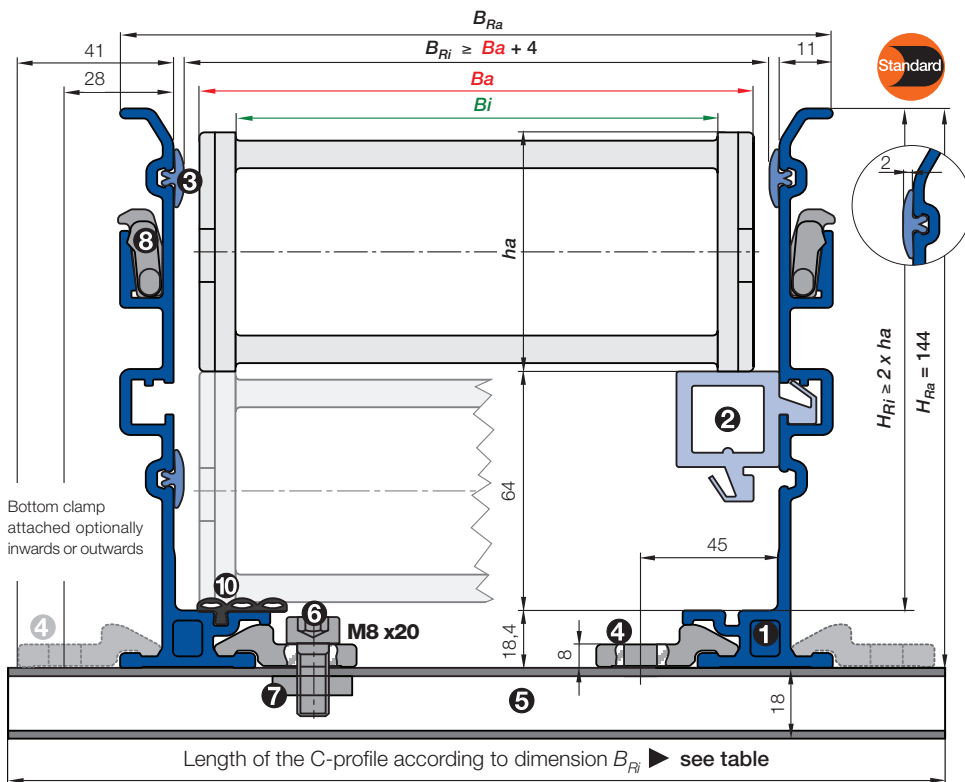
igus® GmbH
51147 Cologne



Other strain relief elements

► chapter 10

Internet: www.igus.eu
E-mail: info@igus.de



- B_a = Outer width E-Chains® / E-Tube
- B_i = Inner width E-Chains® / E-Tube
- h_a = Outer height E-Chains® / E-Tube
- H_{Ri} = Inner trough height
- H_{Ra} = Outer trough height
- B_{Ri} = Inner trough width ▶ depends on dim. B_a
- B_{Ra} = Outer trough width
- n_{Mon} = Number of installation sets (left/right)
- n_{Ri} = Number of troughs sets (left/right)
- ! $H_{Ri} \geq 2 \cdot h_a$
- $B_{Ri} \geq B_a + 4$
- = Guide trough set ● = Glide bar
- = Installation set "Basic" ● = C-profile

Installation set "Basic" with C-profile

Bottom Clamp attached optionally inwards or outwards

68.100.200.0 ▶ Order example

B_{Ri} [mm]	Part No.	
	attached inwards	attached outwards
.050 72	-	960.40.200
.075 97	-	960.40.225
.100 122	960.40.175	960.40.250
.115 137	960.40.200	960.40.275
.125 147	960.40.200	960.40.275
.150 172	960.40.225	960.40.300
.175 197	960.40.250	960.40.325
.200 222	960.40.275	960.40.350
.225 247	960.40.300	960.40.375
.250 272	960.40.325	960.40.400



- **Components, trough "Basic":** ① Trough side parts, aluminum, 2 m ② Glide bar, plastic, 2 m ③ Glide strips, plastic, 2 m (without glide strips on request) ⑩ Optional: Silencer profile, rubber
- **Components, installation set "Basic":** ④ Bottom clamp, aluminum ⑤ C-profile, steel galvanized ⑥ Screw M6 x16 ⑦ Sliding nut M6 ⑧ Interface connector, plastic

Order example: Length of travel 30 m - Center mounted for Series 68.100.200.0 with $B_{Ri} = 122$

Guide trough set (set of 2 trough side parts, incl. glide strips) **without** glide bar

Order text: 16 m guide trough without glide bar (8 x 2 m sections) **Part No. 973.30.SL**

Guide trough set (set of 2 trough side parts, incl. glide strips) **with** glide bar

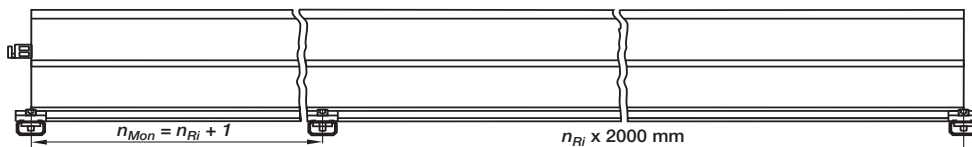
Order text: 16 m guide trough with glide bar (8 x 2 m sections) **Part No. 973.31.SL**

Installation set "Basic" complete (guide trough-sets + 1)

Order text: 17 installation sets "Basic" **Part No. 960.40.175**

Option: For an additional noise dampening with silencer profile, please add Index A - Example:

Part No. 973.30.SLA



Principle sketch: Number of installation sets to be installed = **Number of trough sections + 1**

Other guide trough systems



"Heavy Duty" for the fastidiously construction with glide bar and silencer profiles

▶ chapter 9



"Steel trough" very stable and robust guide trough out of steel, 2 pieces, adjustable on chain width

▶ chapter 9

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