

Price index


 Low noise version
 available with special
 rubber pads design

 Cleanroom test
 upon request

 ESD classification:
 Electrically conductive ESD/ATEX
 version upon request

 Opening E-Chains®: Remove crossbars and
 clips - Insert screwdriver into the slot, push
 down, release by lever action


When to use the Series E4.21:

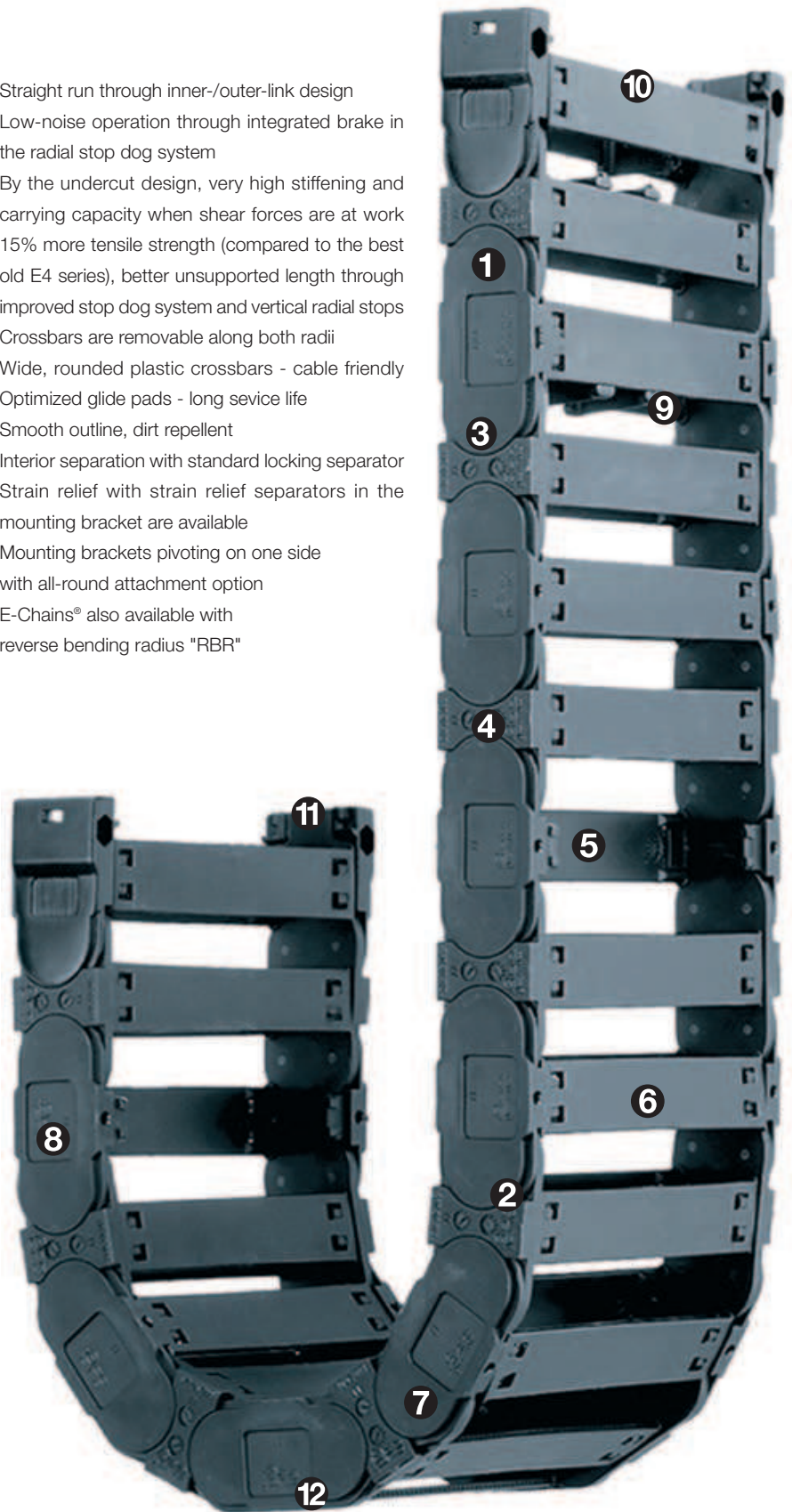
- If a low-noise version is required
- At very high speeds and/or accelerations
- For long travels
- For high additional loads



When not to use it:

- When an extremely low vibration
E-Chain® is required
- ▶ Series E3.22, page 5.376
- When a one-sided snap open E-Chain®/
E-Tube is required for economic reasons
- ▶ Series 1400/1450/1480/1500, page 5.172
- When one-sided snap open E-Tubes
are required at a low price
- ▶ Series R117/R118, page 5.212

- ① Straight run through inner-/outer-link design
- ② Low-noise operation through integrated brake in the radial stop dog system
- ③ By the undercut design, very high stiffening and carrying capacity when shear forces are at work
- ④ 15% more tensile strength (compared to the best old E4 series), better unsupported length through improved stop dog system and vertical radial stops
- ⑤ Crossbars are removable along both radii
- ⑥ Wide, rounded plastic crossbars - cable friendly
- ⑦ Optimized glide pads - long service life
- ⑧ Smooth outline, dirt repellent
- ⑨ Interior separation with standard locking separator
- ⑩ Strain relief with strain relief separators in the mounting bracket are available
- ⑪ Mounting brackets pivoting on one side with all-round attachment option
- ⑫ E-Chains® also available with reverse bending radius "RBR"



Order example complete E-Chain®

 Please indicate chain-lengths or number of links **Example: 2 m or 66 links**

 2 m **E4.21.120.100.0**


E-Chain®

 with 2 separators **T2112** assembled every 2nd link


Interior separation

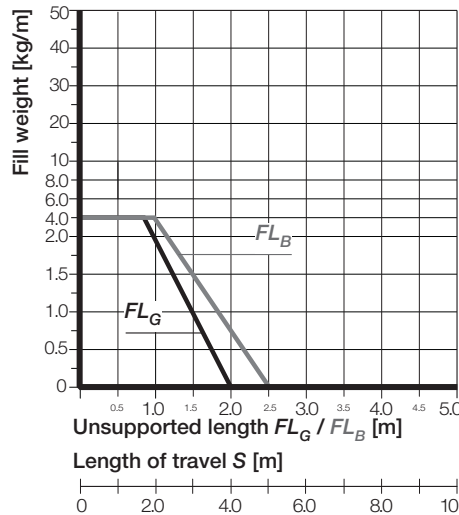
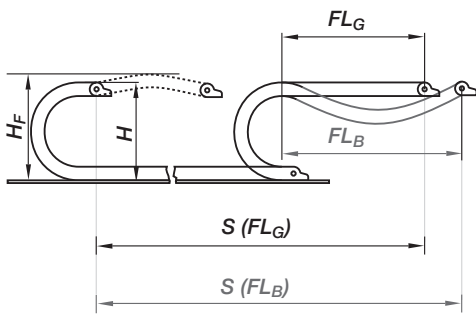
 1 set **E4.210.120.1.12**


Mounting bracket

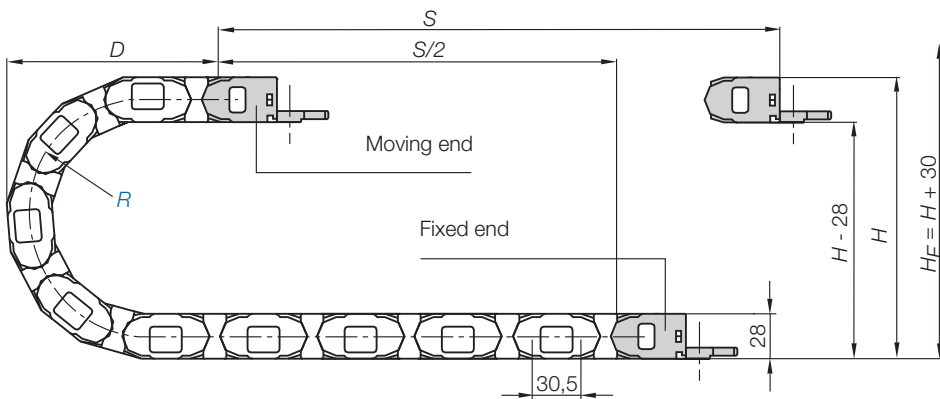


Unsupported length

FL_G = with straight upper run
 FL_B = with permitted sag
 Further information ► **Design, page 5.38**



- 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

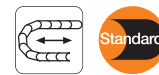


Pitch = 30,5 mm/link Links/m = 33 (1007mm) Chain length = $S/2 + K$

R	038	048	063	075	100	150	200
H	104	124	154	178	228	328	428
D	085	095	110	120	145	195	245
K	185	215	260	300	380	535	690
H ₂	104	124	154	178	135	135	135
D ₂ ⁺²⁵	085	095	110	120	490	530	665
K ₂	185	215	260	300	782	920	1104

Other installation methods

- Vertical, hanging ≤ 40 m
- Vertical, standing ≤ 3 m
- Side mounted, un supp. ≤ 1 m
- Rotary requires further calculation
- Unsupported length of upper run = upon request

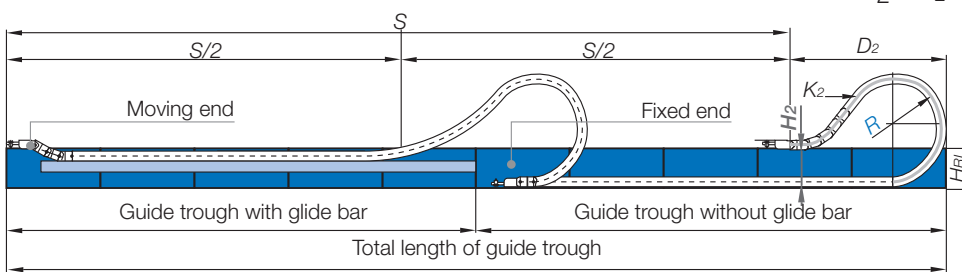


Short travels - unsupported

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:
 $H_F = H + 30$ mm
 (with 1,5 kg/m fill weight)

Long travel lengths from 10 m to max. 120 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. 120 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.

Speed / acceleration FL_G	max. 20 [m/s] / max. 200 [m/s ²]
Speed / acceleration FL_B	max. 3 [m/s] / max. 6 [m/s ²]
Gliding speed / acceleration (maximum)	max. 10 [m/s] / max. 50 [m/s ²]
Material - permitted temperature °C	igumid G / -40° up to +120° C
Flammability class, igumid G	VDE 0304 IIC UL94 HB

Technical Data



Details of material properties

► page 5.64



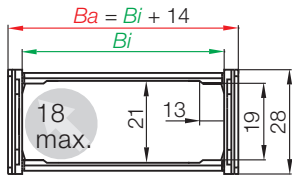
For support of the lower run - **Support Tray tool kit** available ► page 5.498

System E4.1
 Inner height: 21 mm

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► 5.241

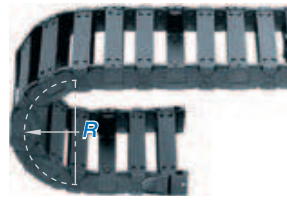


Part No. structure

E4.21.120.100.0



Series E4.21 - E-Chain® with crossbars every link



- Robust solution with crossbars every link
- Can be opened from two sides
- Removable crossbars
- Separator for locking crossbar (fixable) Standard



Part No.	<i>Bi</i> [mm]	<i>Ba</i> [mm]	Weight [kg/m]
E4.21.030.□.0	30	44	≈ 0,60
E4.21.040.□.0	40	54	≈ 0,64
E4.21.050.□.0	50	64	≈ 0,67
E4.21.060.□.0	60	74	≈ 0,71
E4.21.070.□.0	70	84	≈ 0,74
E4.21.080.□.0	80	94	≈ 0,78
E4.21.090.□.0	90	104	≈ 0,82
E4.21.100.□.0	100	114	≈ 0,85
E4.21.110.□.0	110	124	≈ 0,89
E4.21.120.□.0	120	134	≈ 0,92

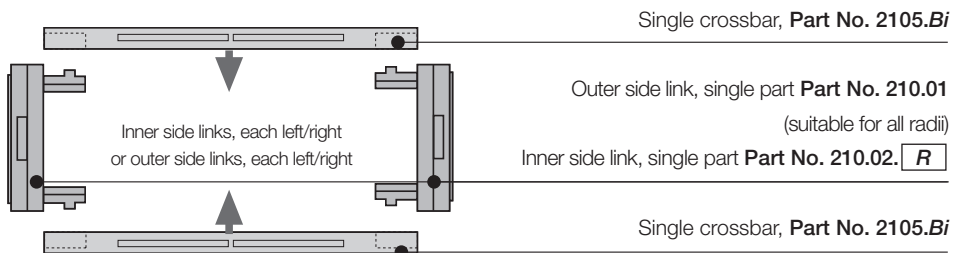
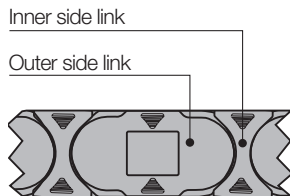
Available bending radii

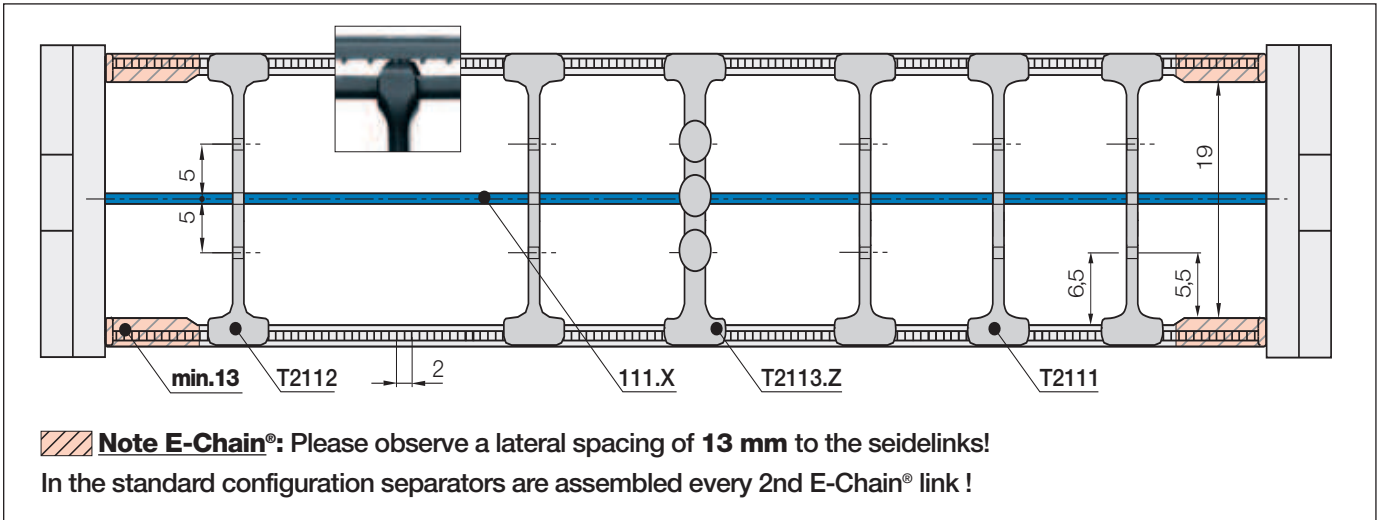
R [mm] 038 048 063 075 100 150 200

Supplement Part No. with required radius. Example: E4.21.120.□100□.0

0 = standard color, other colors ▶ page 5.65 · Pitch: 30,5 mm/link - Links/m = 33

Part No. E-Chain® links, single parts





		Separator for E-Chains® unassembled T2102 assembled T2112
		Notch separator for E-Chains® unassembled T2101 assembled T2111
		Strain relief separator for E-Chains® unassembled T2103.Z assembled T2113.Z
		Full-width shelf (30-120 mm) unassembled 110.X assembled 111.X

Standard separator T2102

is used when vertical and horizontal separation is required. Due to its slot, it allows basic vertical/horizontal shelving arrangements.

Notch separator T2101

can be locked in 2 mm increments due to gaps on the crossbars of E-Chains®. The separator cannot slide sideways during the operation.

Strain relief separator T2103.Z

can be integrated into the mounting bracket and can be placed there at any point of the E-Chain®. It combines strain relief and interior separation.

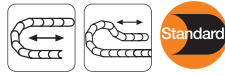
Full-width shelf 110.X

this option makes sense in applications with many thin cables with similar diameters. Full-width shelves can be arranged at 3 different heights (in 5 mm increments).

Full-width shelf

Width X [mm]	unassembled	assembled	Width X [mm]	unassembled	assembled	Width X [mm]	unassembled	assembled
030	110.30	111.30	070	110.70	111.70	110	110.110	111.110
040	110.40	111.40	080	110.80	111.80	120	110.120	111.120
050	110.50	111.50	090	110.90	111.90			
060	110.60	111.60	100	110.100	111.100			

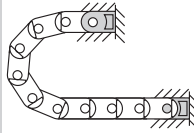
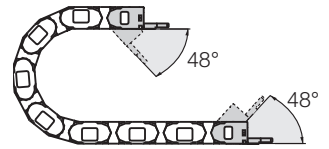




Moving end
E4.210...1.2

The Standard - option polymer, pivoting

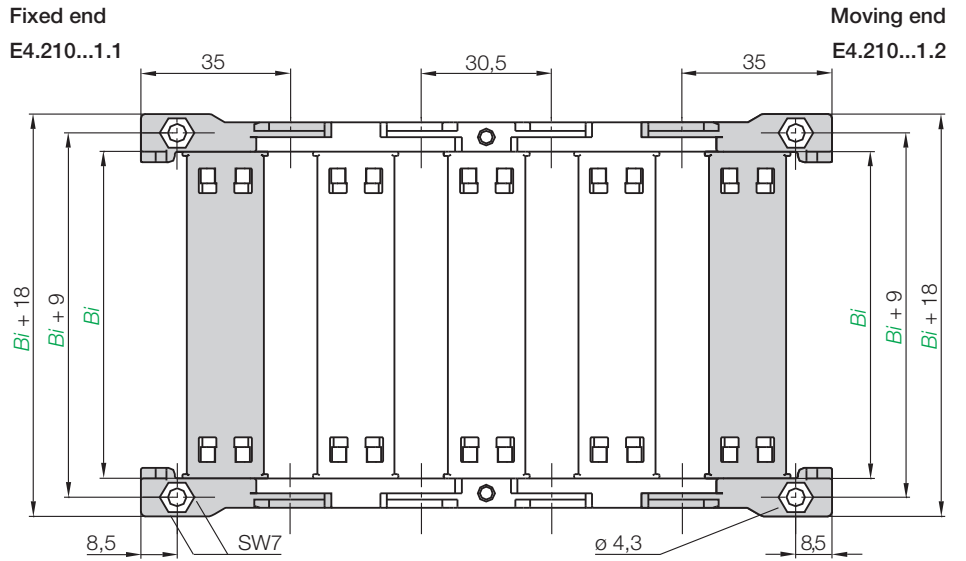
- Recommended for unsupported and gliding applications
- KMA mounting bracket with attachment capability on all sides
- Well suited for tight installation conditions
- Integrated strain relief possible
- Variable traverse angle for flexible assembly



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

Fixed end
E4.210...1.1

Dimensions and order configurations



Part No. structure

E4.210.	030.	1.	12
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Full set, for both ends:

E4.210.030.1.12

Single-part order:

E4.210.030.1.2

Mounting bracket moving end

E4.210.030.1.1

Mounting bracket fixed end

For E-Chain®	Part No. full set	Bi [mm]	For E-Chain®	Part No. full set	Bi [mm]
.030.	E4.210.030.1.12	30	.080.	E4.210.080.1.12	80
.040.	E4.210.040.1.12	40	.090.	E4.210.090.1.12	90
.050.	E4.210.050.1.12	50	.100.	E4.210.100.1.12	100
.060.	E4.210.060.1.12	60	.110.	E4.210.110.1.12	110
.070.	E4.210.070.1.12	70	.120.	E4.210.120.1.12	120

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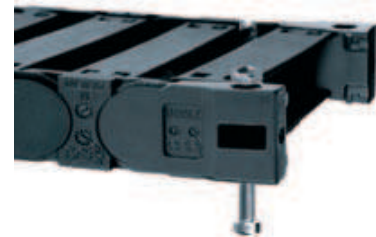
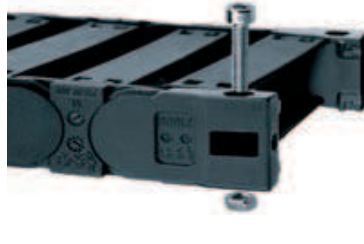
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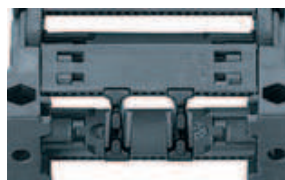
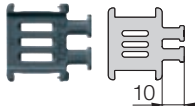


Special feature mounting brackets KMA: Series E4.21

- Mounting brackets with attachment points on all sides
- Special design of the counterbore as hexagon - the inlay of the nut (M4) and the counterboring of the hexagon socket head srew (M4), is consequently possible
- **Attention:** Mounting brackets always ends with an inner plate (uneven number of links)



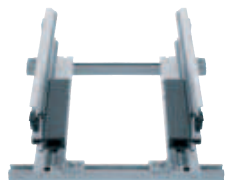
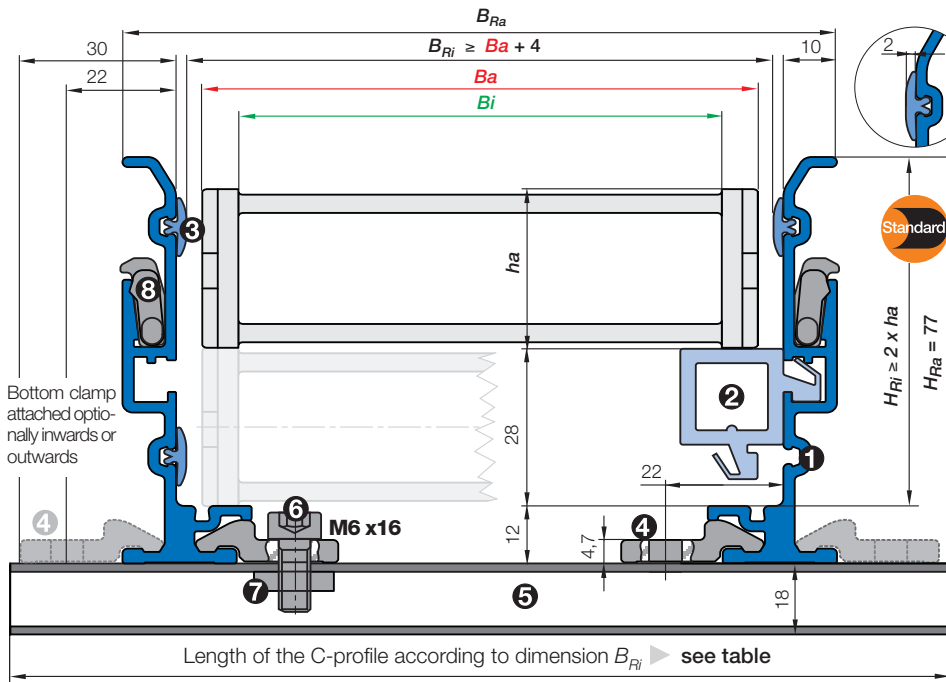
Accessories | Strain Relief



Strain relief separator T2103.Z

- Can be integrated into the connector component and can be positioned as required
- Double-layered strain relief
- It combines strain relief and interior separation.





- **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 x 16 ⑦ Sliding nut M6 ⑧ Interface connector, plastic

- 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 trough 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

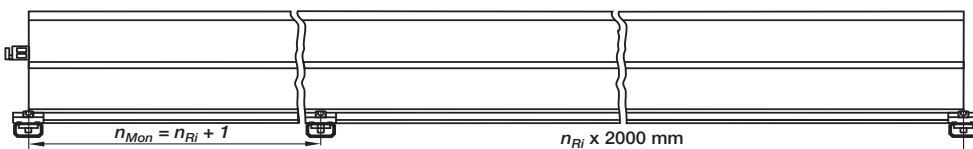
Bottom Clamp attached optionally inwards or outwards

E4.21.050.100.0 ▶ Order example

B_{Ri} [mm]	Part No.	
	attached inwards	attached outwards
.030	48	-
.040	58	960.30.125
.050	68	960.30.125
.060	78	960.30.125
.070	88	960.30.150
.080	98	960.30.150
.090	108	960.30.175
.100	118	960.30.175
.110	128	960.30.175
.120	138	960.30.200

Order example: Length of travel 30 m - Center mounted for Series E4.21.050.100.0 with $B_{Ri} = 68$

- 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. 970.30.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. 970.32.SL
- Installation set "Basic" complete (Guide trough-sets + 1)
Order text: 17 Installation sets "Basic" Part No. 960.30.125
- Module for the fixed end
Order text: 1 set Part No. 970.30.SLA



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

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