



# E4/4HD

Very high fill weights  
for long travels



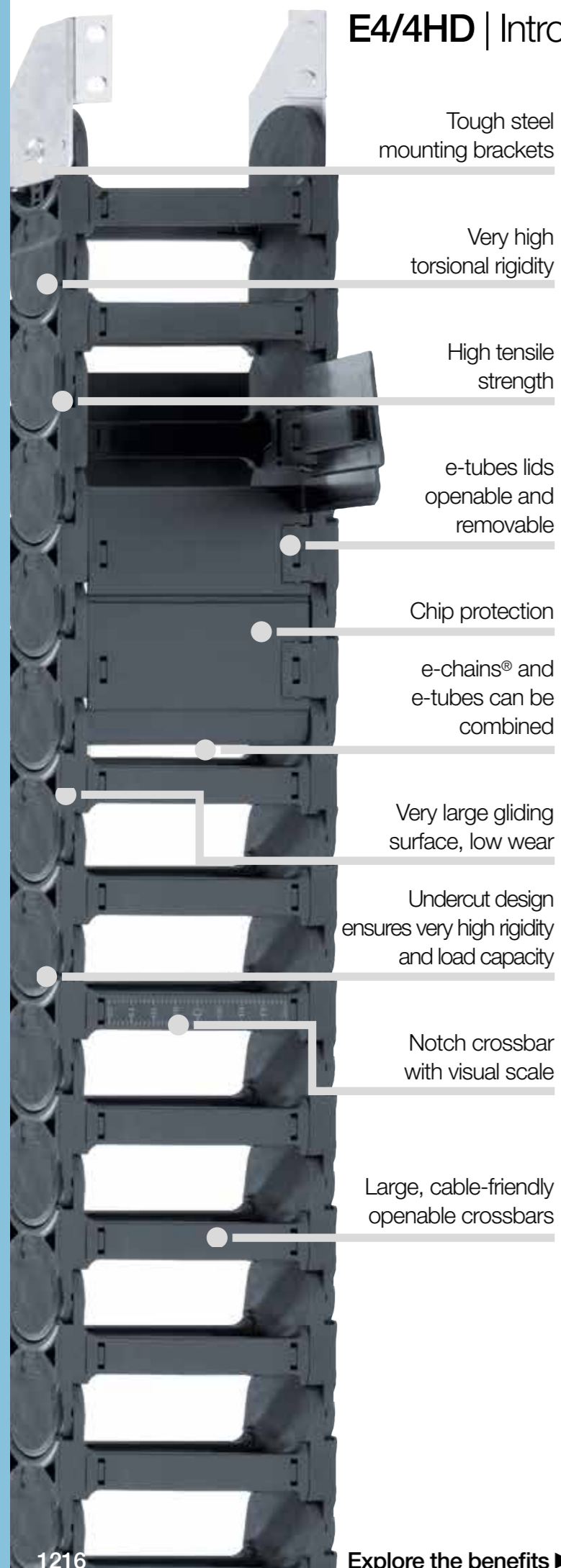
#### E4/4HD advantages:

- For heavy-duty applications
- For very heavy fill weights and long travels
- The E4/4HD offers the required strength for long travels, dirty environments or with high humidity
- The undercut design provides extremely high torsional rigidity
- Extended service life is facilitated by large gliding surfaces
- Recommended for heavy-duty applications



#### When to use another e-chain® series:

- When you want a profile-rol e-chain® with which you can reduce energy consumption by up to 57%  
▶ **P4/P4.1 systems, page 1232**
- When you want a strong E4/4 rol e-chain® requiring 75% less drive power  
▶ **E4/4 rol e-chain®, page 1242**
- When you want a self-guiding e-chain system® without any guide troughs  
▶ **autoglide, page 1264**




## Very high fill weights for long travels - E4/4HD


The E4/4HD system was designed for the most demanding tasks. The E4/4HD provides the required strength for long travels, with high fill weights, dirty environments or with high humidity.


- Strong side links for very high fill weights and long travels
- The undercut design provides extremely high torsional rigidity
- Extended service life is facilitated by large gliding surfaces
- Recommended for heavy-duty applications


### Typical industries and applications

- RTGs, quayside cranes, and many other types of crane
- Heavy machinery
- Steelworks
- Shipyards
- Composting plants
- Construction machines
- Plaster, concrete, chemical and mineral factories
- Farms
- General mechanical engineering etc.

 E4/4HD - high torsional rigidity

 Electrically conductive ESD e-chains® upon request

 E4/4HD system, tried and tested for very long travels

 e-tubes available as special design with HT material for 850°C swarf

Series	Inner height	Inner width	Outer width	Outer height	Bend radius	Travel	Page
Part No.	<i>hi</i> [mm]	<i>Bi</i> [mm]	<i>Ba</i> [mm]	<i>ha</i> [mm]	<i>R</i> [mm]	≤ [m]	



**e-chains® with crossbars every link**  
the all-rounder - also for particularly demanding applications

4040HD	56	50 - 600	104 - 654	84	135 - 400	350	1220
5050HD	80	50 - 600	110 - 660	108	150 - 500	500	1226



**e-tubes**  
fully enclosed, excellent cable protection

8840HD	56	75 - 462	129 - 516	84	150 - 400	350	1220
9850HD	80	75 - 462	135 - 522	108	150 - 500	500	1226

 Available from stock. Ready to ship in 3 - 5 days\*  
\*Average time before the ordered goods are dispatched.

### Reduce assembly time - E4 e-chain® opener

- e-chain® opener tools for easy opening and closing of e-chains®
  - Simple opening and closing of e-chain® crossbars
  - Also for use in hard to reach locations
  - Significant assembly time reduction
- More information ► [www.igus.eu/E4savetime](http://www.igus.eu/E4savetime)



### AX - special e-chains® - especially for fine dust applications

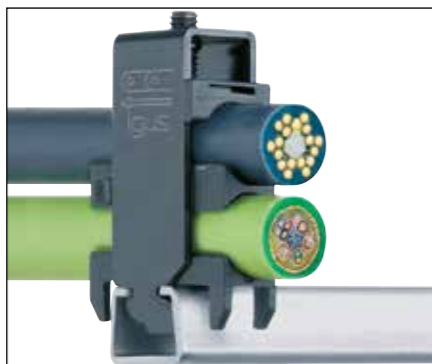
- For long travels in fine-particulate applications
  - Exterior stop-dogs prevent the build-up of dust, dirt, chips, flour, etc.
  - Mounting brackets and accessories available
- More information ► [www.igus.eu/4040AX](http://www.igus.eu/4040AX)







Tough steel mounting brackets for secure connection to your application



Strain relief e.g. clamps, tie-wrap plates, nuggets, etc. ▶ From page 1392



Optimised interior separation products, cables last up to 4 times longer



Notch locking separator for increased holding force



Aluminium SuperTrough - the standard igus® guide trough ▶ From page 1298



The extension link design allows virtually unlimited side-by-side extension

Technical data

	Speed gliding	≤ 10 [m/s]
	Acceleration gliding	≤ 50 [m/s <sup>2</sup> ]
	Material - permitted temperature °C, igumid G	-40°C / +120°C
	Flammability class, igumid G	VDE 0304 IIC UL94-HB

Order example | Order key

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

e-chain® (1.0m)	Please indicate e-chain® length or number of links: 1.0m or 11 links	4040HD.10.300.0
+ Mounting brackets	1 full set, steel (option: Index .E = AISI 304 stainless steel)	40400HD.12.VS.E
Interior separation	with 2 separators assembled every 2 <sup>nd</sup> link	2 x 56.1.1
Order text:	1m 4040HD.10.300.0 + 40400HD.12.VS.E + 2 x 56.1.1	

Order key and colour options

Order key

e-chain® with crossbars every link	4040HD.10.300.0
e-tube fully enclosed	8840HD.10.300.0
Series	
Type	
Width index (depends on B)	
Bend radius R	
Colour index (standard black)	

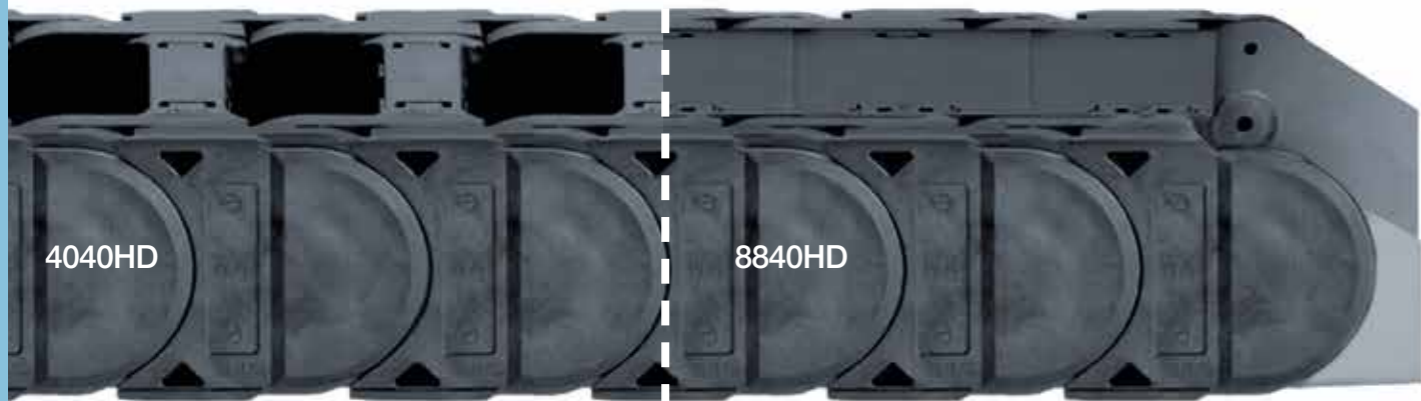
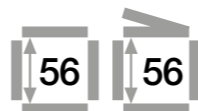
Order index for colour options

Colour	Order index	Colour	Order index
Black	Standard .0	Orange	Special colour .2
Silver-grey	Special colour .31	Yellow	Special colour .4
White	Special colour .1	Light grey	Special colour .14
Grey-white	Special colour .1S		

Black e-chains® ready to ship in 24 - 48hrs.\*  
Above special colours upon request.



The maintenance-free series 4040HD protects the igus® chainflex® motor and signal cables during the lifting and lowering movements of this tidal turbine and protects them against the aggressive ambient conditions. 20m vertical movement above and below water



**e-chains® | Series 4040HD | Crossbars every link** (crossbars removable along the inner and outer radius)  
**e-tubes | Series 8840HD | Fully closed** (lids openable along the outer radius, from one side)

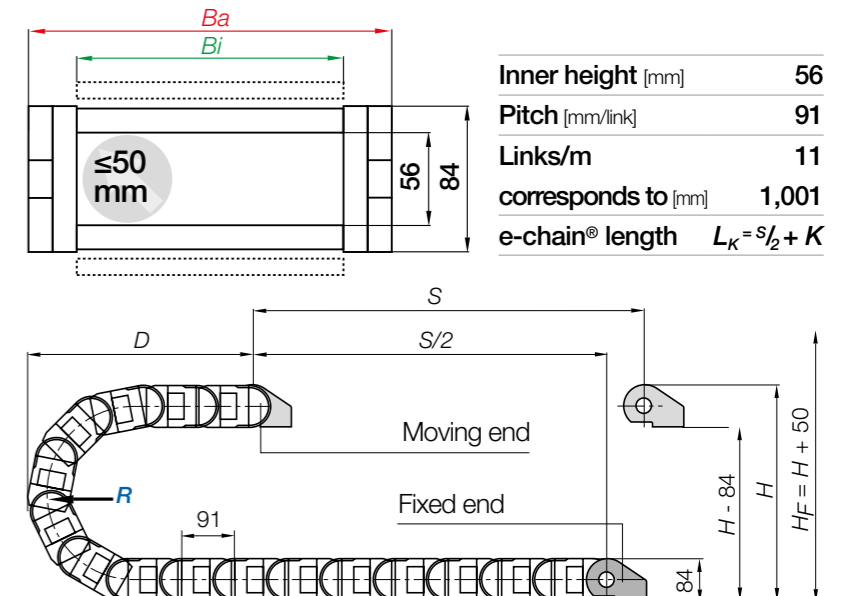
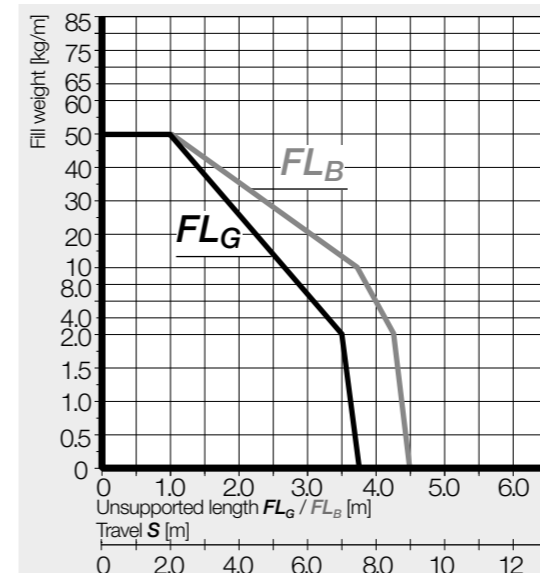
Part No.	<i>Bi</i>	<i>Ba</i>	4040HD	8840HD	Part No.	<i>Bi</i>	<i>Ba</i>	4040HD	8840HD
e-chains® / e-tubes	[mm]	[mm]	[kg/m]	[kg/m]	e-chains® / e-tubes	[mm]	[mm]	[kg/m]	[kg/m]
4040HD. – 05. R.0	50	104	≈ 5.03	–	4040HD. – 31. R.0	312	366	≈ 6.94	–
4040HD. – 06. R.0	65	119	≈ 5.12	–	4040HD. – 32. R.0	325	379	≈ 7.05	–
4040HD. 8840HD. 07. R.0 <sup>1)</sup>	75	129	≈ 5.19	≈ 5.64	4040HD. – 33. R.0	337	391	≈ 7.17	–
4040HD. – 08. R.0	87	141	≈ 5.27	–	4040HD. 8840HD. 35. R.0	350	404	≈ 7.37	≈ 9.38
4040HD. 8840HD. 10. R.0	100	154	≈ 5.36	≈ 5.93	4040HD. – 36. R.0	362	416	≈ 7.28	–
4040HD. – 11. R.0	112	166	≈ 5.48	–	4040HD. – 37. R.0	375	429	≈ 7.38	–
4040HD. 8840HD. 12. R.0	125	179	≈ 5.56	≈ 6.29	4040HD. – 38. R.0	387	441	≈ 7.49	–
4040HD. – 13. R.0	137	191	≈ 5.69	–	4040HD. 8840HD. 40. R.0	400	454	≈ 7.76	≈ 10.38
4040HD. 8840HD. 15. R.0	150	204	≈ 5.73	≈ 6.67	4040HD. – 41. R.0	412	466	≈ 7.68	–
4040HD. – 16. R.0	162	216	≈ 5.84	–	4040HD. – 42. R.0	425	479	≈ 7.98	–
4040HD. 8840HD. 17. R.0	175	229	≈ 5.97	≈ 6.98	4040HD. – 43. R.0	437	491	≈ 7.82	–
4040HD. – 18. R.0	187	241	≈ 6.09	–	4040HD. – 45. R.0	450	504	≈ 8.15	–
4040HD. 8840HD. 20. R.0	200	254	≈ 6.14	≈ 7.29	4040HD. 8840HD. 46. R.0	462	516	≈ 8.10	≈ 10.85
4040HD. – 21. R.0	212	266	≈ 6.21	–	4040HD. – 47. R.0	475	529	≈ 8.14	–
4040HD. – 22. R.0	225	279	≈ 6.28	–	4040HD. – 48. R.0	487	541	≈ 8.39	–
4040HD. – 23. R.0	237	291	≈ 6.39	–	4040HD. – 50. R.0	500	554	≈ 8.39	–
4040HD. 8840HD. 25. R.0	250	304	≈ 6.50	≈ 8.02	4040HD. – 51. R.0	512	566	≈ 8.44	–
4040HD. – 26. R.0	262	316	≈ 6.59	–	4040HD. – 52. R.0	525	579	≈ 8.57	–
4040HD. 8840HD. 27. R.0	275	329	≈ 6.70	≈ 8.38	4040HD. – 53. R.0	537	591	≈ 8.66	–
4040HD. – 28. R.0	287	341	≈ 6.75	–	4040HD. – 55. R.0	550	604	≈ 9.08	–
4040HD. 8840HD. 30. R.0	300	354	≈ 6.91	≈ 8.68	4040HD. – 60. R.0	600	654	≈ 9.31	–

<sup>1)</sup>Radius not available for e-tubes 1) Lid removable only, no hinged option

**Available bend radii**

*R* [mm] | 135\* | 150 | 200 | 250 | 300 | 350 | 400 |

Complete Part No. with required radius (*R*). Example: 4040HD.30.300.0



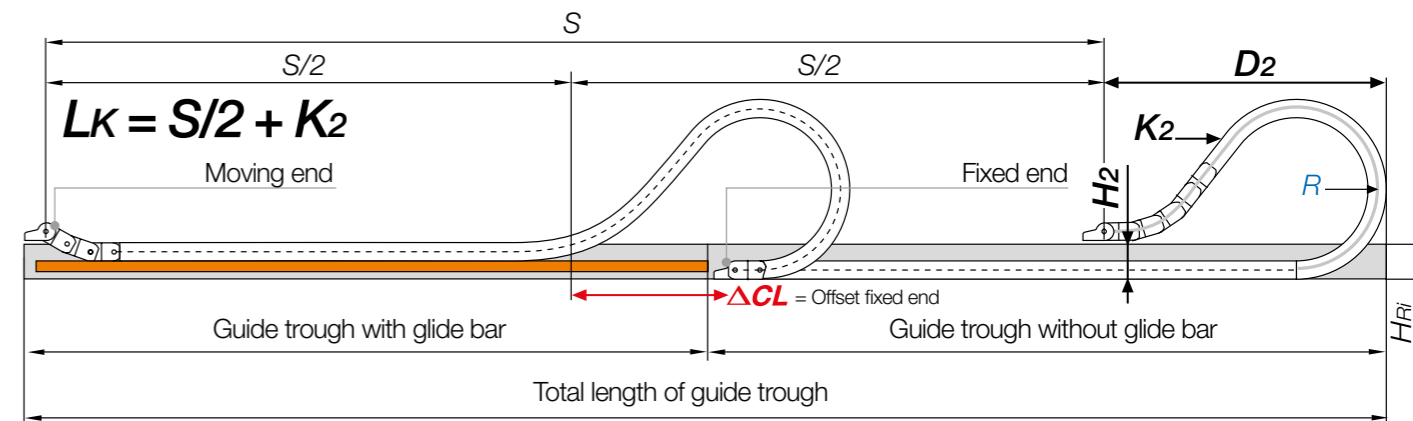
Inner height [mm]	56
Pitch [mm/link]	91
Links/m	11
corresponds to [mm]	1,001
e-chain® length $L_K = \frac{S}{2} + K$	

<i>R</i>	135*	150	200	250	300	350	400
<i>H</i>	354	384	484	584	684	784	884
<i>D</i>	314	329	379	429	479	529	579
<i>K</i>	610	655	815	970	1,125	1,285	1,440

The required clearance height:  $H_F = H + 50\text{mm}$  (with 3.0kg/m fill weight)

\*Radius not available for e-tubes

**Gliding applications | Travel lengths up to max. 350m**

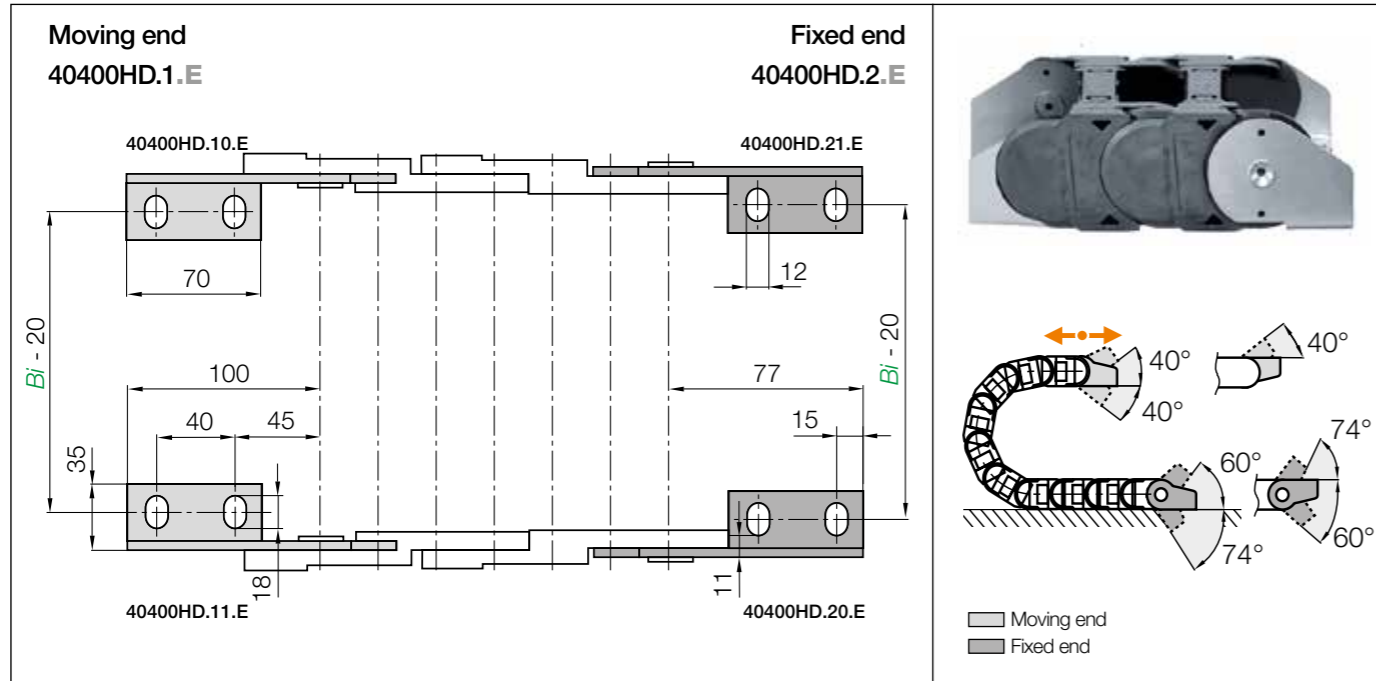


**Note:** We recommend the project planning of such a system to be carried out by igus®. In case of travels under 10m we recommend an unsupported e-chain®.

<i>R</i>	135*	150	200	250	300	350	400
<i>H</i> <sub>2</sub>	266	266	266	266	266	266	266
<i>D</i> <sub>2</sub>	390	450	710	920	1,180	1,440	1,530
<i>K</i> <sub>2</sub>	728	819	1,274	1,638	2,002	2,366	2,548
$\Delta CL$	124	159	359	509	709	909	959

\*\*Radius not available for e-tubes.

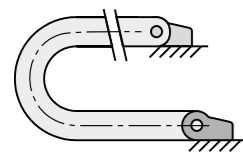




**Steel, pivoting | For gliding applications and long travels**

Part No. full set	Description
<b>steel pivoting</b>	<b>Mounting bracket</b>
40400HD.12.2.VS.E	Set of stainless steel mounting brackets, assembled
40400HD.1.2.VS.E	Mounting brackets moving end, assembled
40400HD.2.2.VS.E	Mounting brackets fixed end, assembled

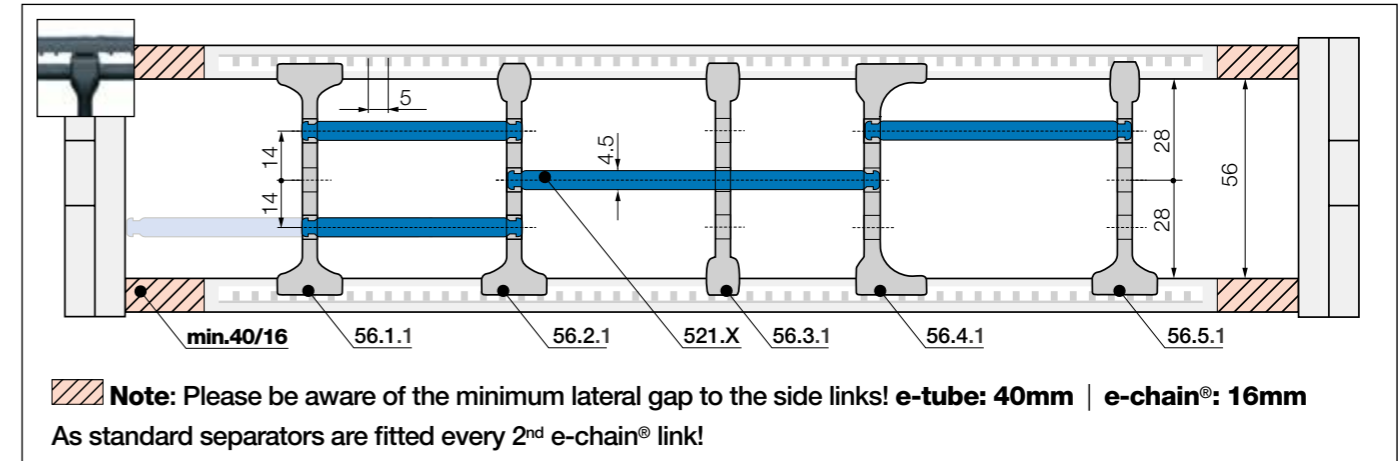
Stainless steel version available. Please add index .E! (Material: stainless steel 1.4301)



Attachment options for these steel mounting brackets. **Note:** By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled (screwed on)!

**Strain relief** e.g. clamps, tiwrap plates, nuggets and clips are available from stock. The complete chainfix range with ordering options ► From page 1392

More interior separation options ► next page



		<b>Standard separator, wide base</b>
		unassembled <b>56.1</b> assembled <b>56.1.1</b>

**Standard - for any application**  
Separator with a wide base for maximum holding force.

		<b>Separator, narrow top</b>
		unassembled <b>56.2</b> assembled <b>56.2.1</b>

**For even faster installation**  
Wide on one side for high holding force, narrow on opposite side for easy cable fitting.

		<b>Separator, narrow</b>
		unassembled <b>56.3</b> assembled <b>56.3.1</b>

**For small cables**  
Separator with a narrow base for a large number of small cables side by side. Saves space.

		<b>Separator, asymmetrical</b>
		unassembled <b>56.4</b> assembled <b>56.4.1</b>

**For side-mounted applications**  
Asymmetrical separator, for defined gap distance. No additional spacers required.

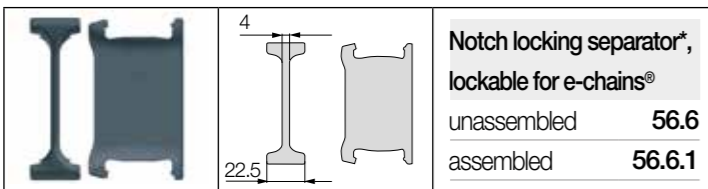
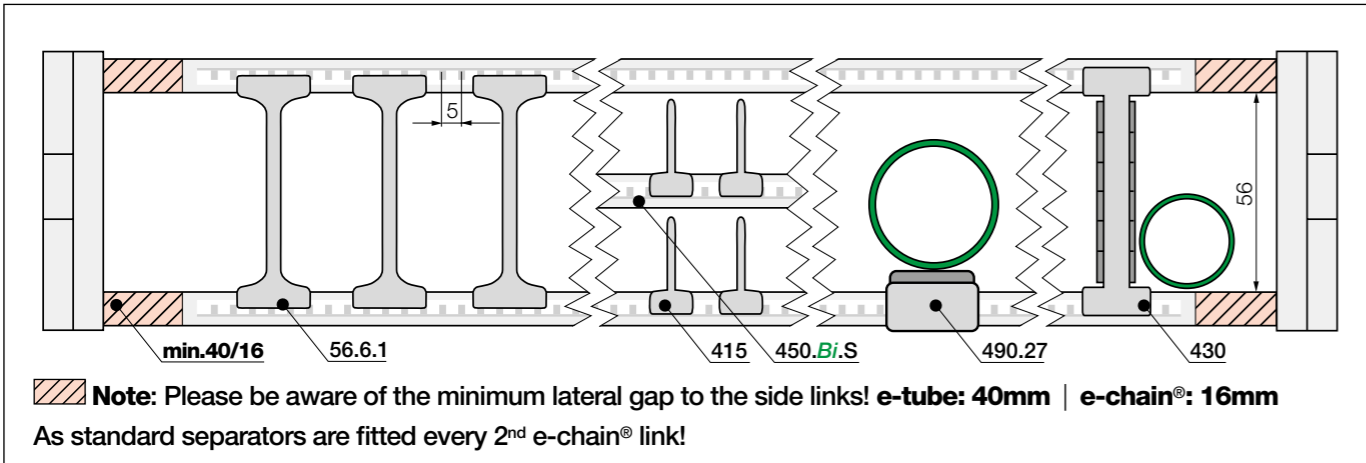
		<b>Notch separator for notched crossbar</b>
		unassembled <b>56.5</b> assembled <b>56.5.1</b>

**Locks securely in preset increments**  
Notch separator for exact positioning. Recommended for side-mounted applications.

		<b>Shelf, lockable</b>
		unassembled <b>520.X</b> assembled <b>521.X</b>

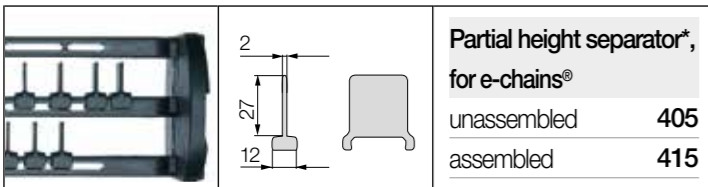
**Horizontal separation**  
Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.

Shelves Width = X [mm]	X [mm]			X [mm]			X [mm]			
	unassembled	assembled		unassembled	assembled		unassembled	assembled		
050	520.050	521.050		150	520.150	521.150		300	520.300	521.300
065	520.065	521.065		175	520.175	521.175		350	520.350	521.350
075	520.075	521.075		200	520.200	521.200		375	520.375	521.375
100	520.100	521.100		225	520.225	521.225		387	520.387	521.387
125	520.125	521.125		250	520.250	521.250		450	520.450	521.450



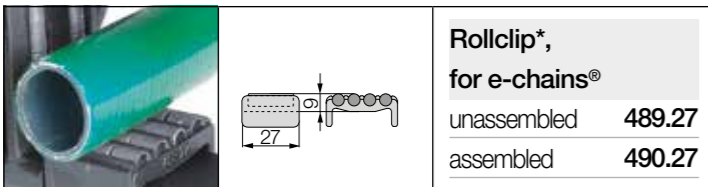
**Notch locking separator\* for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.



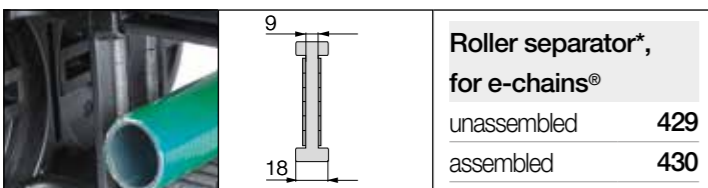
**Partial height separator\***

In conjunction with an additional opening crossbar, **part no. 450.Bi.S**, it provides the option to separate the upper and lower halves of the e-chain® independently of each other.



**Rollclip\***

Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.



**Roller separator\***

The roller separator is used in a similar way to the rollclip. It is used like a separator. For rigid cables and hoses.

\*Only suitable for e-chains®

**Roller crossbars - increase the service life of cables and hoses**

- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
- For sensitive hoses in restricted space
- Usable along the inner and/or outer radius, retrofit possible

More information ► upon request



World record application - 615m travel in operation since 2008 without failure. In addition to the motor, control and data cables, a water hose is routed in the e-chain® of the E4/4HD system (shown right in the e-chain®).





**e-chains®** | Series 5050HD | Crossbars every link (crossbars removable along the inner and outer radius)  
**e-tubes** | Series 9850HD | Fully closed (lids openable along the outer radius, from one side)

Part No.	Bi	Ba	5050HD	9850HD
e-chains® / e-tubes	[mm]	[mm]	[kg/m]	[kg/m]
5050HD. – 05. R.0	50	110	≈ 6.65	–
5050HD. – 06. R.0	65	125	≈ 6.74	–
5050HD. 9850HD. 07. R.0 <sup>1)</sup>	75	135	≈ 6.81	≈ 7.25
5050HD. – 08. R.0	87	147	≈ 6.89	–
5050HD. 9850HD. 10. R.0	100	160	≈ 6.99	≈ 7.55
5050HD. – 11. R.0	112	172	≈ 7.10	–
5050HD. 9850HD. 12. R.0	125	185	≈ 7.18	≈ 7.91
5050HD. – 13. R.0	137	197	≈ 7.32	–
5050HD. 9850HD. 15. R.0	150	210	≈ 7.35	≈ 8.29
5050HD. – 16. R.0	162	222	≈ 7.47	–
5050HD. 9850HD. 17. R.0	175	235	≈ 7.60	≈ 8.60
5050HD. – 18. R.0	187	247	≈ 7.71	–
5050HD. 9850HD. 20. R.0	200	260	≈ 7.77	≈ 8.91
5050HD. – 21. R.0	212	272	≈ 7.84	–
5050HD. – 22. R.0	225	285	≈ 7.91	–
5050HD. – 23. R.0	237	297	≈ 8.02	–
5050HD. 9850HD. 25. R.0	250	310	≈ 8.13	≈ 9.64
5050HD. – 26. R.0	262	322	≈ 8.22	–
5050HD. 9850HD. 27. R.0	275	335	≈ 8.32	≈ 10.00
5050HD. – 28. R.0	287	347	≈ 8.38	–
5050HD. 9850HD. 30. R.0	300	360	≈ 8.53	≈ 10.30

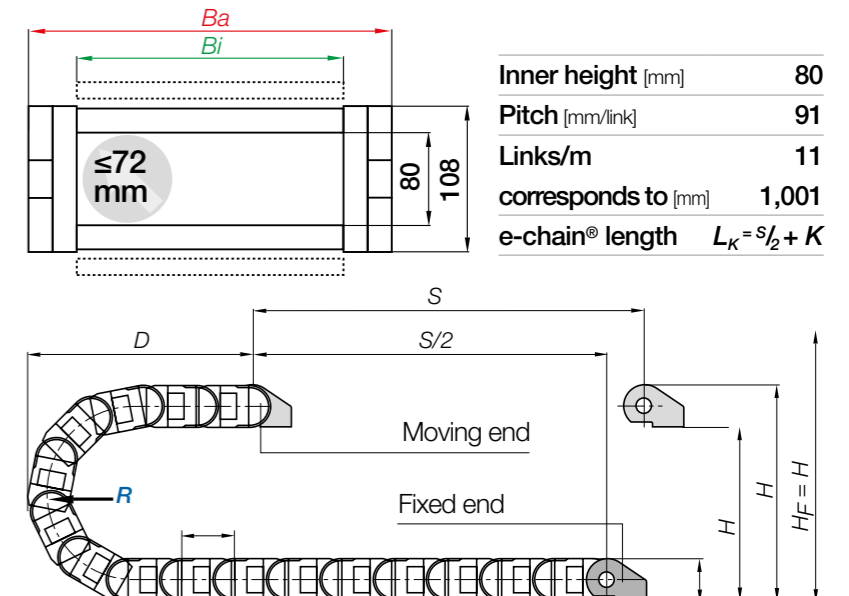
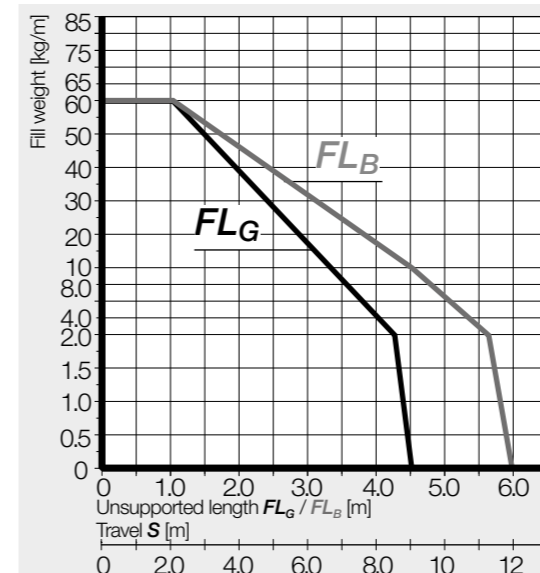
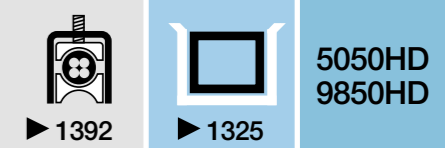
1) Lid removable only, no hinged option

Available bend radii

R [mm] | 150 | 200 | 250 | 300 | 350 | 400 | 500 |

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

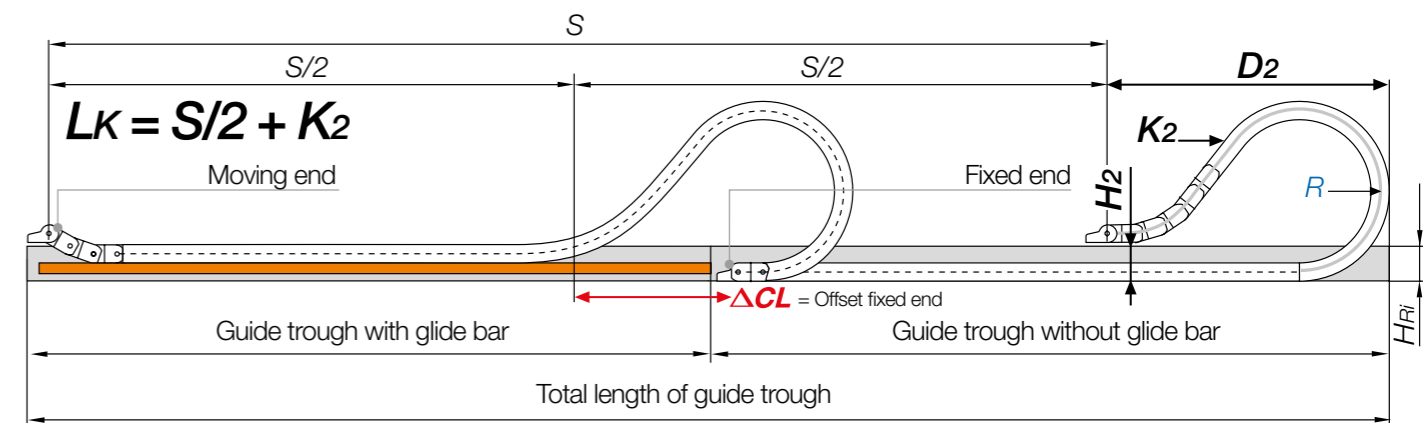
5050HD.30.300.0 = crossbars every link / 9850HD.30.300.0 = fully enclosed



R	150	200	250	300	350	400	500
H	408	508	608	708	808	908	1,108
D	341	391	441	491	541	591	691
K	655	815	970	1,125	1,285	1,440	1,755

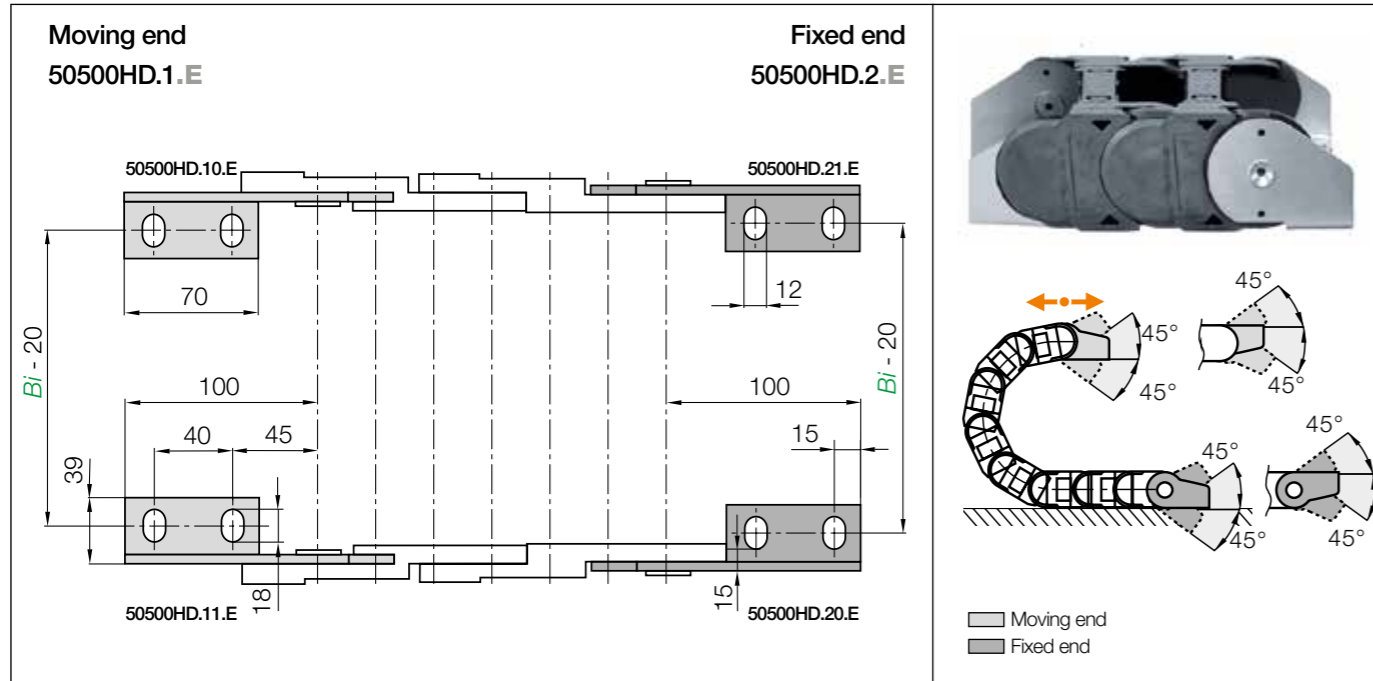
The required clearance height:  $H_F = H + 60\text{mm}$  (with 3.0kg/m fill weight)

Gliding applications | Travel lengths up to max. 500m



**Note:** We recommend the project planning of such a system to be carried out by igus®. In case of travels under 10m we recommend an unsupported e-chain®.

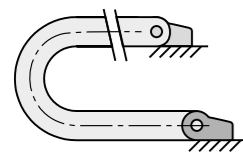
R	150	200	250	300	350	400	500
$H_2$	242	242	242	242	242	242	242
$D_2$	550	800	950	1200	1,550	1,700	2,175
$K_2$	910	127	1,638	2002	2,457	2,730	3,458
$\Delta CL$	209	409	509	709	1,009	1,109	1,484



**Steel, pivoting | For gliding applications and long travels**

Part No. full set	Description
<b>steel pivoting</b>	<b>Mounting bracket</b>
50500HD.12.2.VS.E	Set of stainless steel mounting brackets, assembled
50500HD.1.2.VS.E	Mounting brackets moving end, assembled
50500HD.2.2.VS.E	Mounting brackets fixed end, assembled

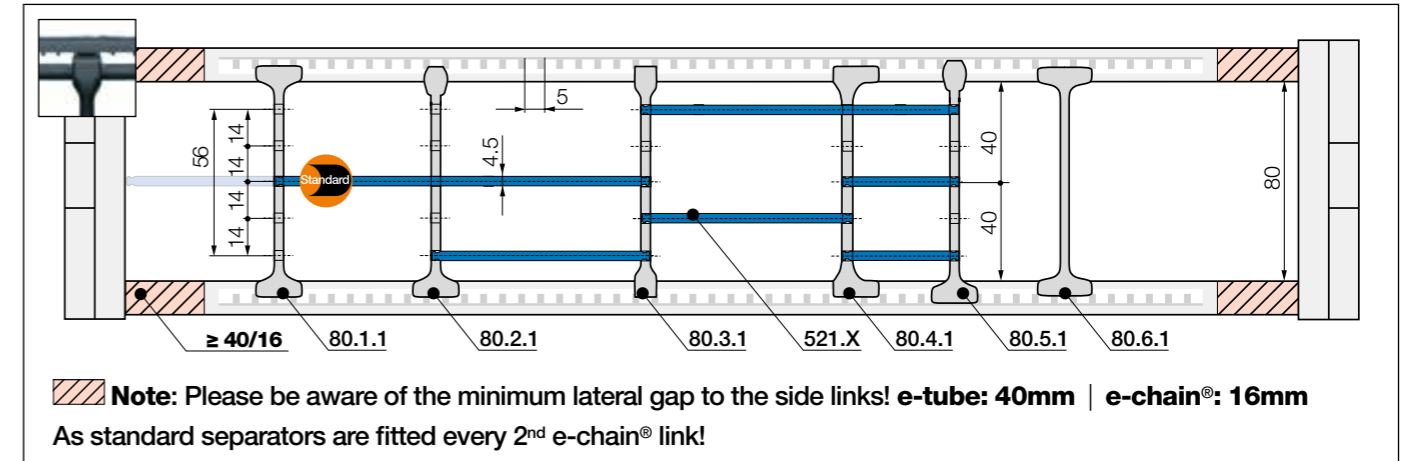
Stainless steel version available. Please add index .E! (Material: stainless steel 1.4301)



Attachment options for these steel mounting brackets. **Note:** By ordering steel mounting brackets in combination with an e-chain® / e-tube, they will be delivered assembled (screwed on)!

**Strain relief** e.g. clamps, tiwrap plates, nuggets and clips are available from stock. The complete chainfix range with ordering options ▶ From page 1392

More interior separation options ▶ next page



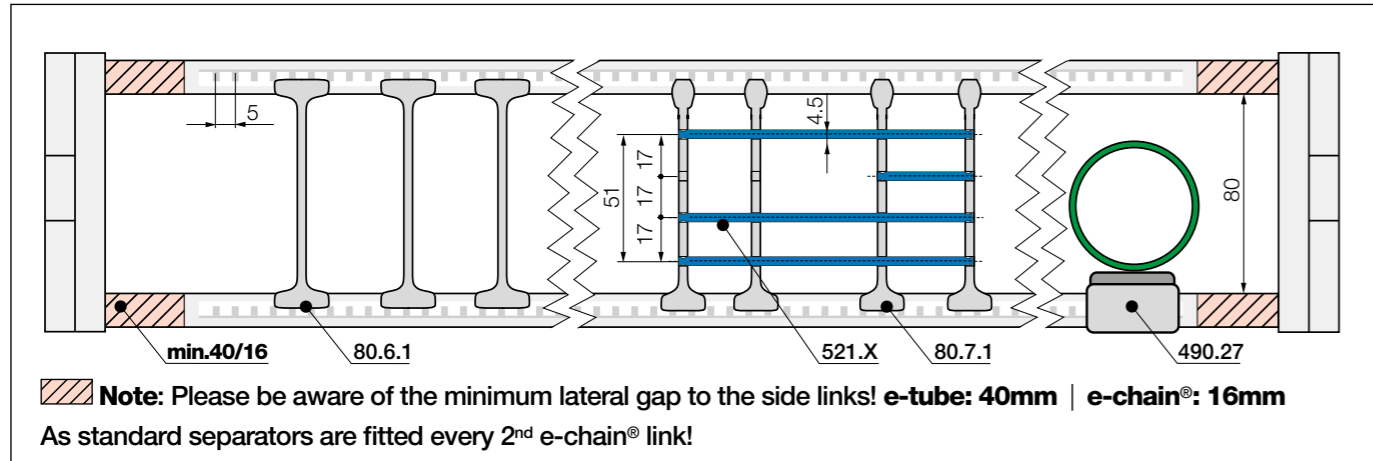
**Note:** Please be aware of the minimum lateral gap to the side links! e-tube: 40mm | e-chain®: 16mm  
As standard separators are fitted every 2<sup>nd</sup> e-chain® link!

		4		<b>Standard separator, wide base</b>	<b>Standard - for any application</b>
		18		unassembled 80.1	Separator with a wide base for maximum holding force.
				assembled 80.1.1	
		8		<b>Separator, narrow top</b>	<b>For even faster installation</b>
		4		unassembled 80.2	Wide on one side for high holding force, narrow on opposite side for easy cable fitting.
		18		assembled 80.2.1	
		4		<b>Separator, narrow</b>	<b>For small cables</b>
		8		unassembled 80.3	Separator with a narrow base for a large number of small cables side by side. Saves space.
				assembled 80.3.1	
		4		<b>Separator, asymmetrical</b>	<b>For side-mounted applications</b>
		3.5		unassembled 80.4	Asymmetrical separator, for defined gap distance. No additional spacers required.
		10.5		assembled 80.4.1	
		8		<b>Notch separator for notched crossbar</b>	<b>Locks securely in preset increments</b>
		4		unassembled 80.5	Notch separator for exact positioning. Recommended for side-mounted applications.
		18		assembled 80.5.1	
		4		<b>Shelf, lockable</b>	<b>Horizontal separation</b>
		X-1		unassembled 520.X	Full-width shelf locks securely into separators at both ends, giving a fixed width. Can be used as full-width or partial shelf.
				assembled 521.X	

Shelves Width = X [mm]	X [mm]			X [mm]			X [mm]		
	unassembled	assembled		unassembled	assembled		unassembled	assembled	
050	520.050	521.050	150	520.150	521.150	300	520.300	521.300	
065	520.065	521.065	175	520.175	521.175	350	520.350	521.350	
075	520.075	521.075	200	520.200	521.200	375	520.375	521.375	
100	520.100	521.100	225	520.225	521.225	387	520.387	521.387	
125	520.125	521.125	250	520.250	521.250	450	520.450	521.450	



More interior separation options



	<p><b>Notch locking separator*, lockable for e-chains®</b></p> <p>unassembled <b>80.6</b></p> <p>assembled <b>80.6.1</b></p>
	<p><b>Separator, one end locking</b></p> <p>unassembled <b>80.7</b></p> <p>assembled <b>80.7.1</b></p>
	<p><b>Rollclip*, for e-chains®</b></p> <p>unassembled <b>489.27</b></p> <p>assembled <b>490.27</b></p>

**Notch locking separator\* for increased holding force**

Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

**Separator, one end locking**

Offset slots for more variability in horizontal subdivisions.

**Rollclip\***

Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

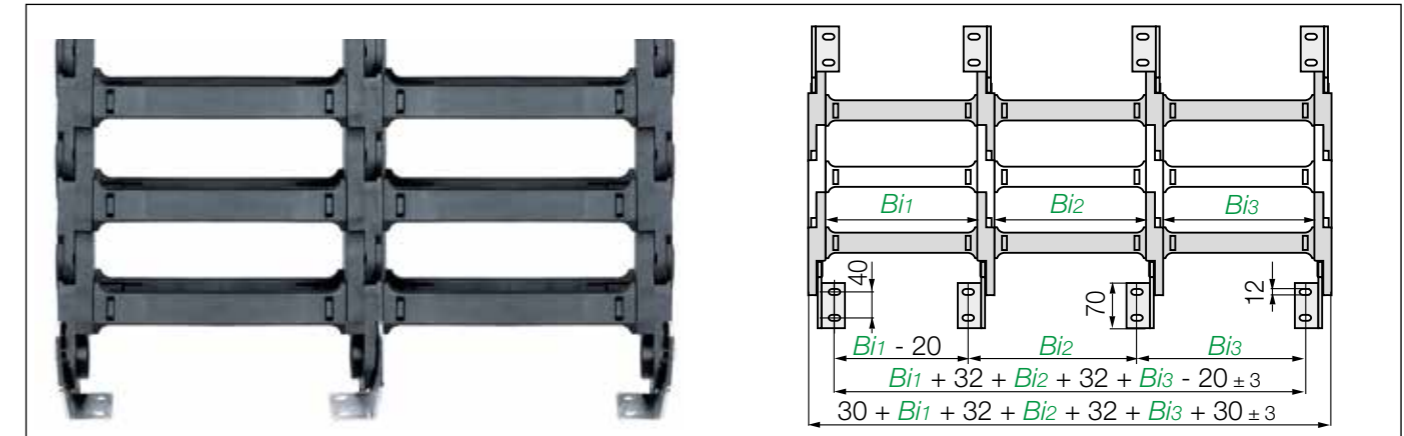
\*Only suitable for e-chains®

**Roller crossbars - increase the service life of cables and hoses**

- Significantly reduce jacket abrasion of very stiff cables and hoses with rolling contact surfaces equipped with tribo-optimised bearings
  - For sensitive hoses in restricted space
  - Usable along the inner and/or outer radius, retrofit possible
- More information ► upon request



Extension links



**Extension links | For extremely wide e-chains® up to 3.0m**

- Virtually unlimited side-by-side extension when high fill weights necessitate extremely wide e-chains® (up to 3000mm)
- The unsupported length  $FL_G$  max. can be increased when high fill weights are required



igus® E4/4HD e-chain system® on a container-crane. High loads and high speeds in difficult weather conditions