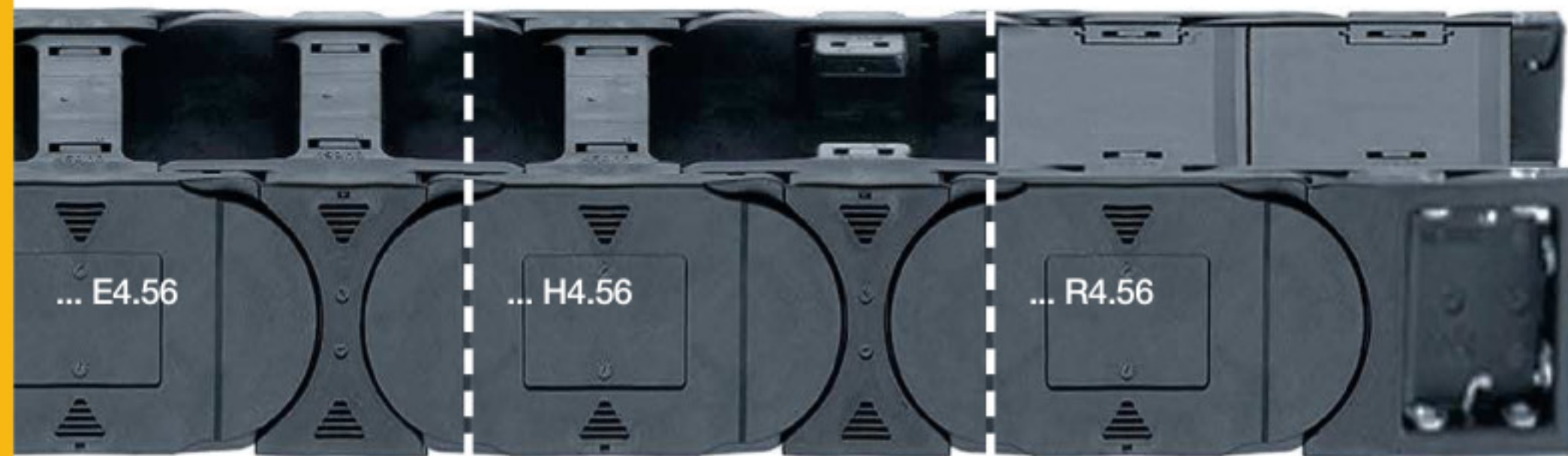




Strong due to undercut design, large inner height



e-chains® Series E4.56 Crossbars every link (crossbars removable along the inner and outer radius)
 e-chains® Series H4.56 Crossbars every 2nd link (crossbars removable along the inner and outer radius)
 e-tubes Series R4.56 Fully enclosed (lids openable along the outer radius, from one side)

Part No.	Bi	Ba	E4.56	H4.56	R4.56	Part No.	Bi	Ba	E4.56	H4.56	R4.56
e-chains® / e-tubes	[mm]	[mm]	[kg/m]	[kg/m]	[kg/m]	e-chains® / e-tubes	[mm]	[mm]	[kg/m]	[kg/m]	[kg/m]
E4. H4. - 56.05. R.0	50	84	≈ 3.60	≈ 3.59	-	E4. H4. - 56.28. R.0	287	322	≈ 5.32	≈ 4.45	-
E4. H4. - 56.055. R.0	55	89	≈ 3.65	≈ 3.62	-	E4. H4. R4. 56.30. R.0	300	334	≈ 5.48	≈ 4.53	≈ 7.31
E4. H4. - 56.06. R.0	65	99	≈ 3.69	≈ 3.63	-	E4. H4. - 56.31. R.0	312	347	≈ 5.51	≈ 4.54	-
E4. H4. R4. 56.07. R.0	75	109	≈ 3.76	≈ 3.67	≈ 4.31	E4. H4. - 56.32. R.0	325	359	≈ 5.62	≈ 4.60	-
E4. H4. - 56.08. R.0	87	121	≈ 3.85	≈ 3.71	-	E4. H4. - 56.33. R.0	337	372	≈ 5.74	≈ 4.66	-
E4. H4. R4. 56.10. R.0	100	134	≈ 3.93	≈ 3.75	≈ 4.65	E4. H4. R4. 56.35. R.0	350	384	≈ 5.88	≈ 4.73	≈ 8.00
E4. H4. - 56.11. R.0	112	147	≈ 4.05	≈ 3.81	-	E4. H4. - 56.36. R.0	362	397	≈ 5.90	≈ 4.74	-
E4. H4. R4. 56.12. R.0	125	159	≈ 4.13	≈ 3.85	≈ 5.01	E4. H4. - 56.37. R.0	375	409	≈ 6.02	≈ 4.79	-
E4. H4. - 56.13. R.0	137	172	≈ 4.26	≈ 3.92	-	E4. H4. - 56.38. R.0	387	422	≈ 6.06	≈ 4.82	-
E4. H4. R4. 56.15. R.0	150	184	≈ 4.28	≈ 3.93	≈ 5.36	E4. H4. R4. 56.40. R.0	400	434	≈ 6.01	≈ 4.79	≈ 8.68
E4. H4. - 56.16. R.0	162	197	≈ 4.41	≈ 3.99	-	E4. H4. - 56.41. R.0	412	447	≈ 6.25	≈ 4.91	-
E4. H4. - 56.169. R.0	169	204	≈ 4.49	≈ 4.03	-	E4. H4. - 56.42. R.0	425	459	≈ 6.37	≈ 4.97	-
E4. H4. R4. 56.17. R.0	175	209	≈ 4.55	≈ 4.06	≈ 5.73	E4. H4. - 56.43. R.0	437	472	≈ 6.46	≈ 5.01	-
E4. H4. - 56.182. R.0	182	217	≈ 4.59	≈ 4.08	-	E4. H4. - 56.45. R.0	450	484	≈ 6.65	≈ 5.11	-
E4. H4. - 56.18. R.0	187	222	≈ 4.66	≈ 4.12	-	E4. H4. R4. 56.46. R.0	462	497	≈ 6.70	≈ 5.14	≈ 9.52
E4. H4. R4. 56.20. R.0	200	234	≈ 4.71	≈ 4.14	≈ 5.96	E4. H4. - 56.47. R.0	475	509	≈ 6.73	≈ 5.15	-
E4. H4. - 56.207. R.0	207	242	≈ 4.77	≈ 4.17	-	E4. H4. - 56.48. R.0	487	522	≈ 6.80	≈ 5.19	-
E4. H4. - 56.21. R.0	212	247	≈ 4.78	≈ 4.18	-	E4. H4. - 56.50. R.0	500	534	≈ 6.96	≈ 5.26	-
E4. H4. - 56.22. R.0	225	259	≈ 4.85	≈ 4.21	-	E4. H4. - 56.51. R.0	512	547	≈ 7.01	≈ 5.29	-
E4. H4. - 56.23. R.0	237	272	≈ 4.96	≈ 4.27	-	E4. H4. - 56.52. R.0	525	559	≈ 7.14	≈ 5.36	-
E4. H4. R4. 56.25. R.0	250	284	≈ 5.07	≈ 4.32	≈ 6.64	E4. H4. - 56.53. R.0	537	572	≈ 7.23	≈ 5.40	-
E4. H4. - 56.26. R.0	262	297	≈ 5.16	≈ 4.37	-	E4. H4. - 56.55. R.0	550	584	≈ 7.65	≈ 5.61	-
E4. H4. R4. 56.27. R.0	275	309	≈ 5.27	≈ 4.42	≈ 6.97	E4. H4. - 56.60. R.0	600	634	≈ 7.38	≈ 5.48	-

▲ ESD version (Electro Static Discharge) available from stock. More information ► From page 142

1) Lid removable, non-openable *Radius not available for e-tubes

Available bend radii

R [mm] | 135* | 150 | 175 | 200 | 240 | 250 | 300 | 350 | 400 | 450 | 500 |

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

E4.56.30.300.0 = crossbars every link / H4.56.30.300.0 = crossbars every 2nd link / R4.56.30.300.0 = fully enclosed

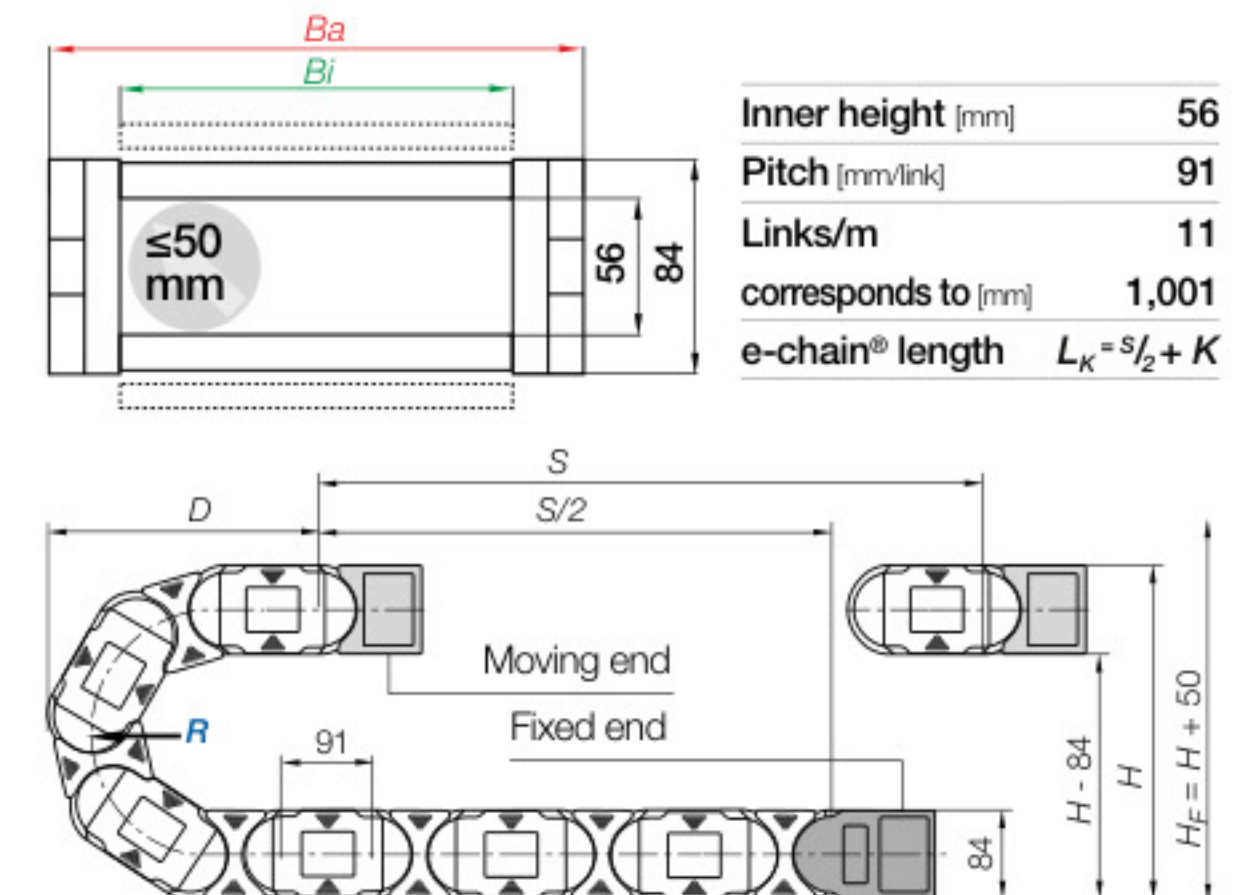
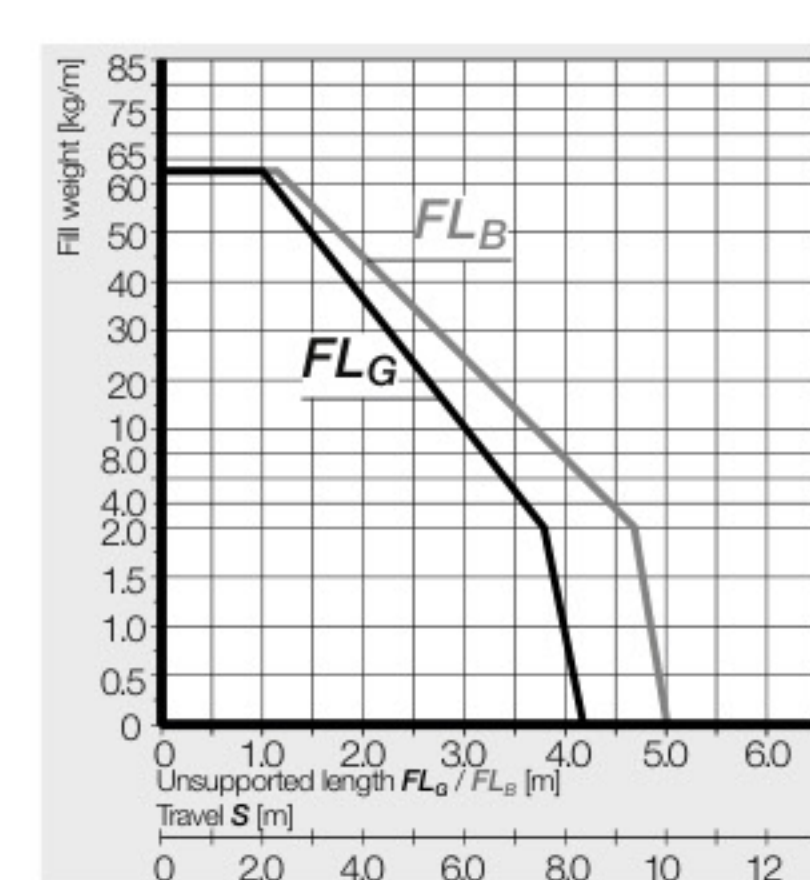
ESD - many sizes from stock

- Standardised product made from igumid ESD
- ESD material tested for over 10 million cycles for the toughest requirements
- Short delivery times including mounting brackets and interior separation; 24hrs. from stock

More information and the complete product range ► From page 142



Unsupported applications | Short travels

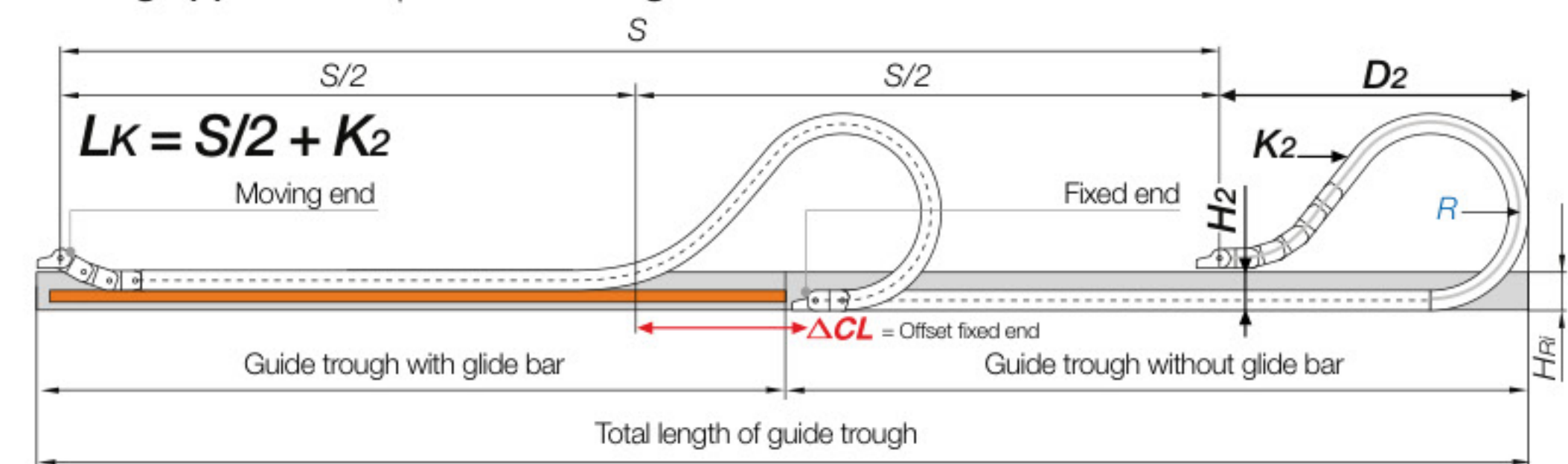


R	135*	150	175	200	240	250	300	350	400	450	500
H ₂₅	354	384	434	484	564	584	684	784	884	984	1084
D	314	329	354	379	419	429	479	529	579	629	679
K	610	655	735	815	940	970	1,125	1,285	1,440	1,600	1,755

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

*Radius not available for e-tubes

Gliding applications | For travel lengths from 12m to max. 400m



Note: We recommend the project planning of such a system to be carried out by igus®.

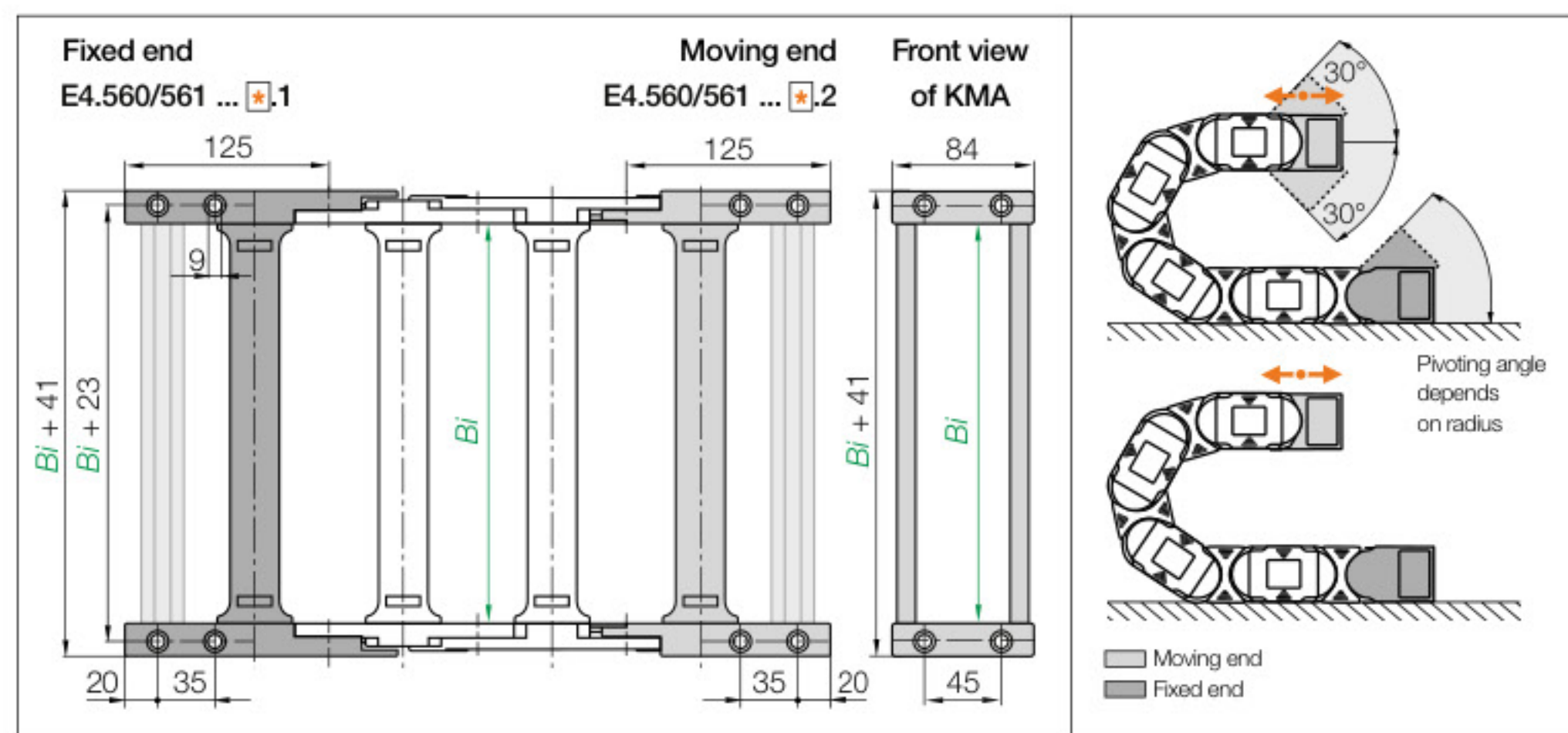
In case of travels between 10 and 12m we recommend an e-chain® with a longer unsupported length.

R	135*	150	175	200	240	250	300	350	400	450	500
H ₂	270	266	266	266	266	266	266	266	266	266	266
D ₂₅	268	450	580	710	900	980	1,180	1,440	1,530	1,700	1,850
K ₂	610	819	1,092	1,274	1,547	1,638	2,002	2,275	2,548	2,912	3,276
ΔCL	-	159	259	359	509	559	709	909	959	1,059	1,159

*Radius not available for e-tubes

E4.1 | e-chains® E4.56·H4.56 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting | Locking



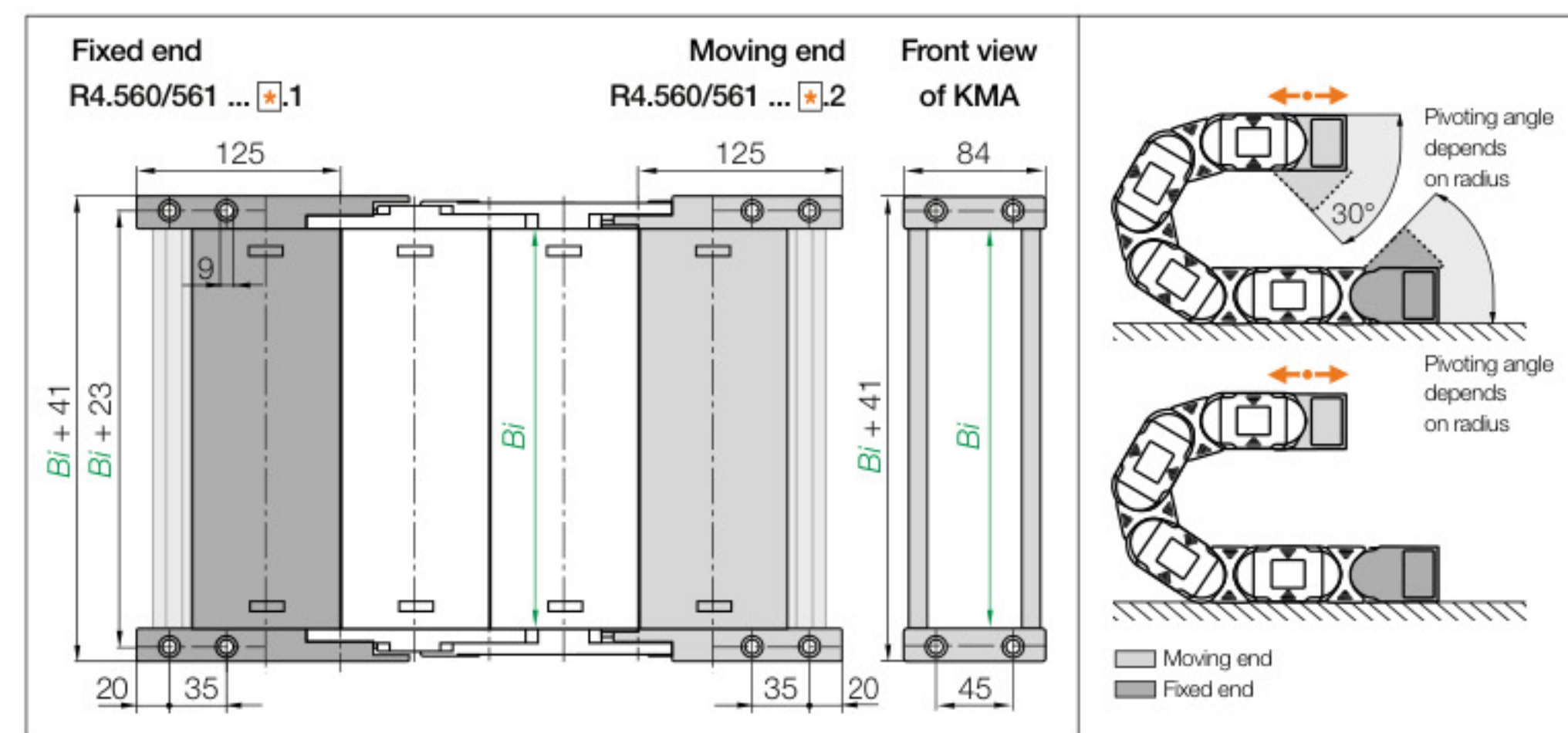
KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]	Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]
05. ▶	E4.560.05 .12.C	E4.561.05 .12.C	50	28. ▶	E4.560.28 .12.C	E4.561.28 .12.C	287
055. ▶	E4.560.055 .12.C	E4.561.055 .12.C	55	30. ▶	E4.560.30 .12.C	E4.561.30 .12.C	300
06. ▶	E4.560.06 .12.C	E4.561.06 .12.C	65	31. ▶	E4.560.31 .12.C	E4.561.31 .12.C	312
07. ▶	E4.560.07 .12.C	E4.561.07 .12.C	75	32. ▶	E4.560.32 .12.C	E4.561.32 .12.C	325
08. ▶	E4.560.08 .12.C	E4.561.08 .12.C	87	33. ▶	E4.560.33 .12.C	E4.561.33 .12.C	337
10. ▶	E4.560.10 .12.C	E4.561.10 .12.C	100	35. ▶	E4.560.35 .12.C	E4.561.35 .12.C	350
11. ▶	E4.560.11 .12.C	E4.561.11 .12.C	112	36. ▶	E4.560.36 .12.C	E4.561.36 .12.C	362
12. ▶	E4.560.12 .12.C	E4.561.12 .12.C	125	37. ▶	E4.560.37 .12.C	E4.561.37 .12.C	375
13. ▶	E4.560.13 .12.C	E4.561.13 .12.C	137	38. ▶	E4.560.38 .12.C	E4.561.38 .12.C	387
15. ▶	E4.560.15 .12.C	E4.561.15 .12.C	150	40. ▶	E4.560.40 .12.C	E4.561.40 .12.C	400
16. ▶	E4.560.16 .12.C	E4.561.16 .12.C	162	41. ▶	E4.560.41 .12.C	E4.561.41 .12.C	412
169. ▶	E4.560.169 .12.C	E4.561.169 .12.C	169	42. ▶	E4.560.42 .12.C	E4.561.42 .12.C	425
17. ▶	E4.560.17 .12.C	E4.561.17 .12.C	175	43. ▶	E4.560.43 .12.C	E4.561.43 .12.C	437
182. ▶	E4.560.182 .12.C	E4.561.182 .12.C	182	45. ▶	E4.560.45 .12.C	E4.561.45 .12.C	450
18. ▶	E4.560.18 .12.C	E4.561.18 .12.C	187	46. ▶	E4.560.46 .12.C	E4.561.46 .12.C	462
20. ▶	E4.560.20 .12.C	E4.561.20 .12.C	200	47. ▶	E4.560.47 .12.C	E4.561.47 .12.C	475
207. ▶	E4.560.207 .12.C	E4.561.207 .12.C	207	48. ▶	E4.560.48 .12.C	E4.561.48 .12.C	487
21. ▶	E4.560.21 .12.C	E4.561.21 .12.C	212	50. ▶	E4.560.50 .12.C	E4.561.50 .12.C	500
22. ▶	E4.560.22 .12.C	E4.561.22 .12.C	225	51. ▶	E4.560.51 .12.C	E4.561.51 .12.C	512
23. ▶	E4.560.23 .12.C	E4.561.23 .12.C	237	52. ▶	E4.560.52 .12.C	E4.561.52 .12.C	525
25. ▶	E4.560.25 .12.C	E4.561.25 .12.C	250	53. ▶	E4.560.53 .12.C	E4.561.53 .12.C	537
26. ▶	E4.560.26 .12.C	E4.561.26 .12.C	262	55. ▶	E4.560.55 .12.C	E4.561.55 .12.C	550
27. ▶	E4.560.27 .12.C	E4.561.27 .12.C	275	60. ▶	E4.560.60 .12.C	E4.561.60 .12.C	600

(KMA = polymer metal mounting bracket) For the C-profile option please add index .C

E4.1 | e-tubes R4.56 | Accessories

KMA mounting brackets | Attachment from any side | Pivoting | Locking

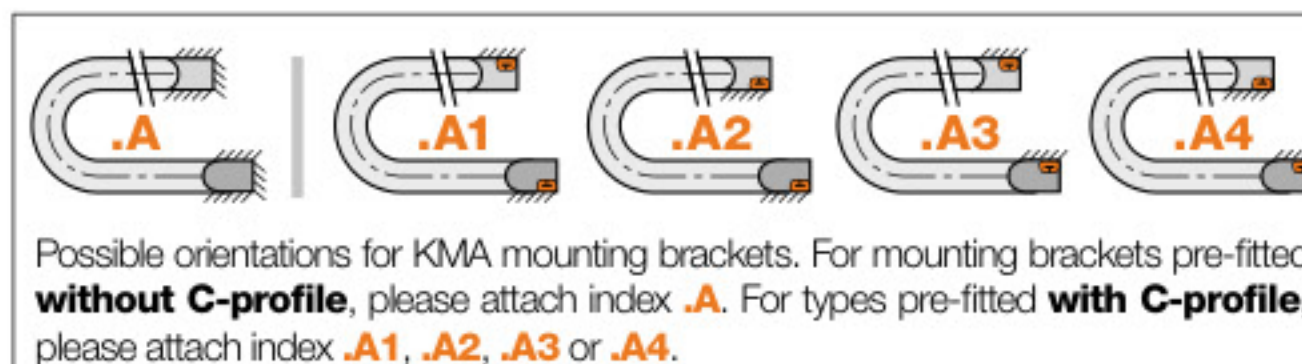


KMA pivoting | Recommended for unsupported and gliding applications
KMA locking | Recommended for vertical hanging and standing applications

Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]	Width index	Part No. full set KMA pivoting	Part No. full set KMA locking	Bi [mm]
07. ▶	R4.560.07 .12.C	R4.561.07 .12.C	75	25. ▶	R4.560.25 .12.C	R4.561.25 .12.C	250
10. ▶	R4.560.10 .12.C	R4.561.10 .12.C	100	27. ▶	R4.560.27 .12.C	R4.561.27 .12.C	275
12. ▶	R4.560.12 .12.C	R4.561.12 .12.C	112	30. ▶	R4.560.30 .12.C	R4.561.30 .12.C	300
15. ▶	R4.560.15 .12.C	R4.561.15 .12.C	150	35. ▶	R4.560.35 .12.C	R4.561.35 .12.C	350
17. ▶	R4.560.17 .12.C	R4.561.17 .12.C	175	40. ▶	R4.560.40 .12.C	R4.561.40 .12.C	400
20. ▶	R4.560.20 .12.C	R4.561.20 .12.C	200	46. ▶	R4.560.46 .12.C	R4.561.46 .12.C	462

(KMA = polymer metal mounting bracket) For the C-profile option please add index .C

Note: The e-chains® may end with either an inner or an outer side link. An outer side link should always be the first e-chain® link at the moving end. Please specify the index 1 (for odd) or 2 (for even) depending on an even or odd number of links required.

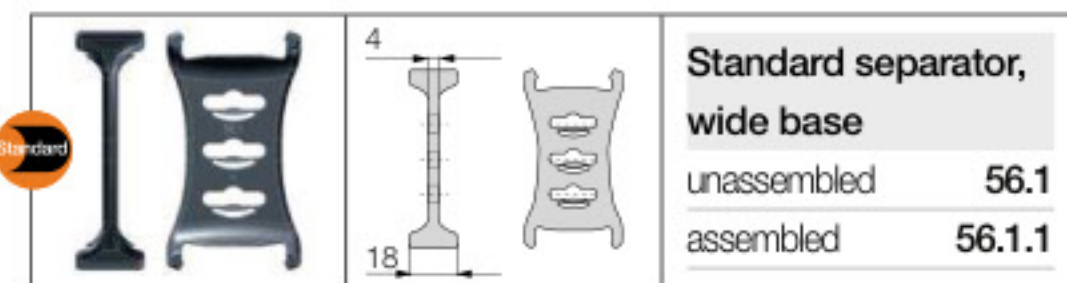
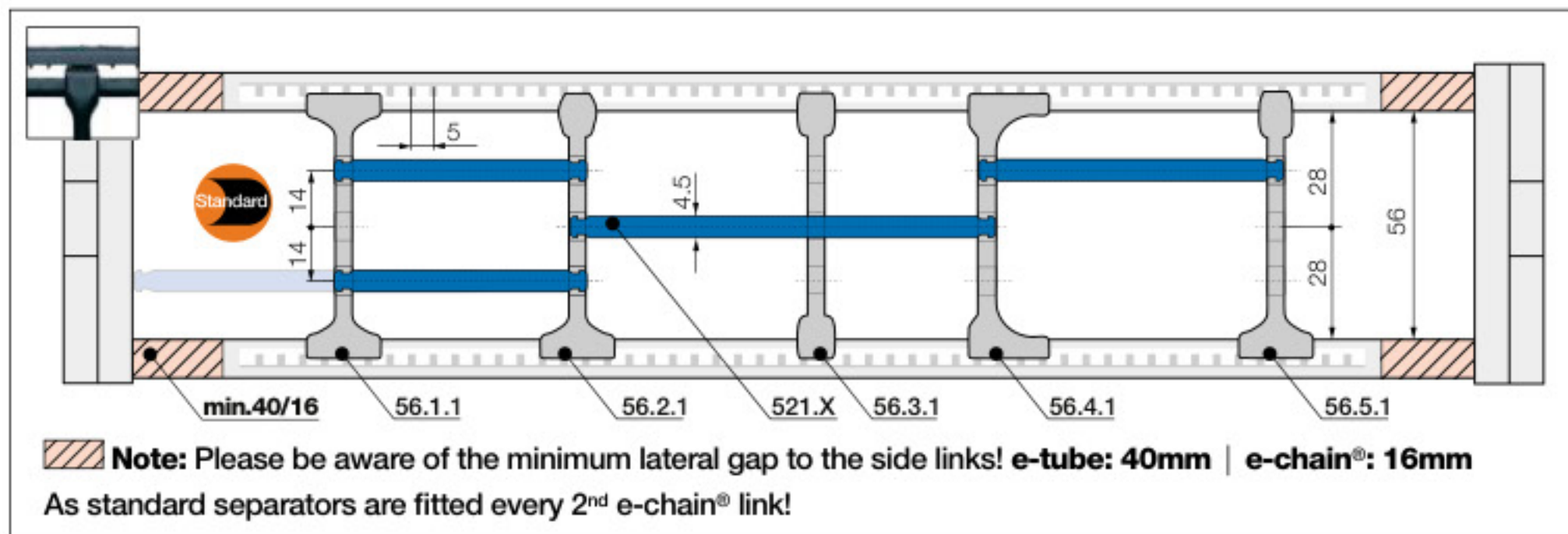


E4.560.30.2.12.C.A2 Order example
 .A... to indicate option with brackets pre-fitted
 C-profile option
 Full set
 Even numbers of links
 Width index
 Series

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

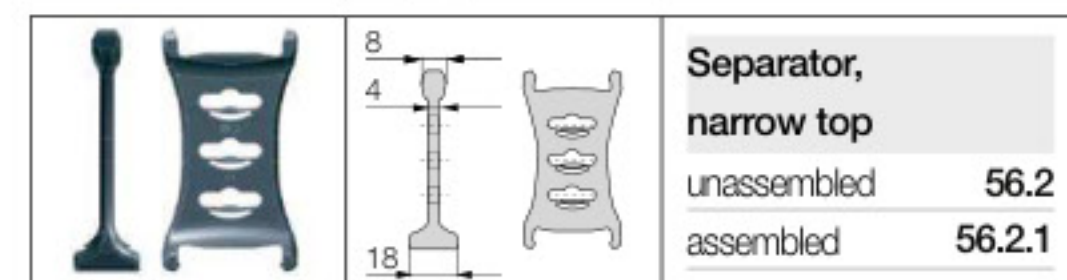
E4.1 | Series E4.56·H4.56·R4.56 | Accessories

Interior separation | Increase cable service life

Previous generation of interior separation with other options ► www.igus.co.uk/E4.56

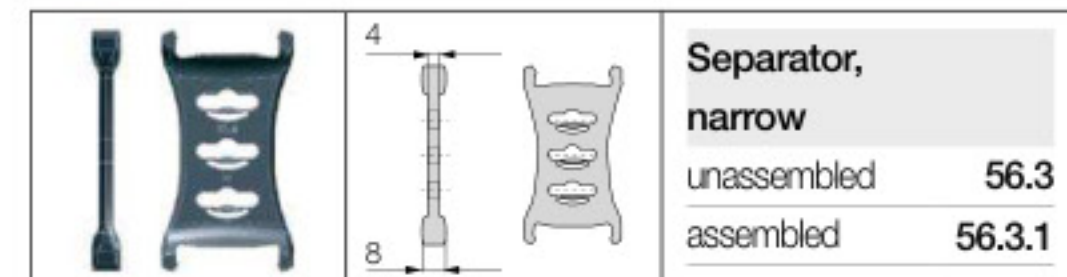
Standard - for any application

Separator with a wide base for maximum holding force.



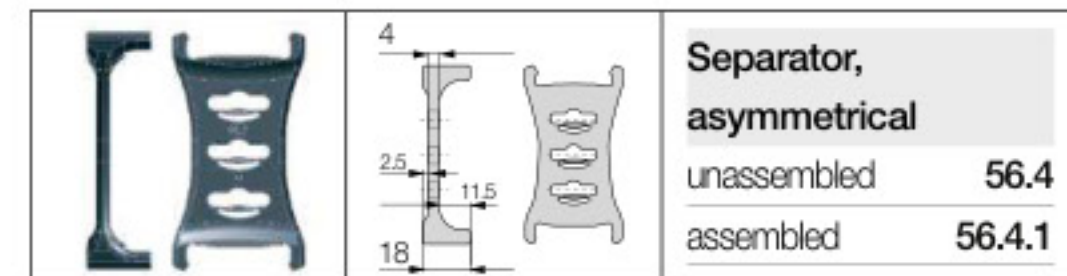
For even faster installation

Wide on one side for high holding force, narrow on opposite side for easy cable fitting.



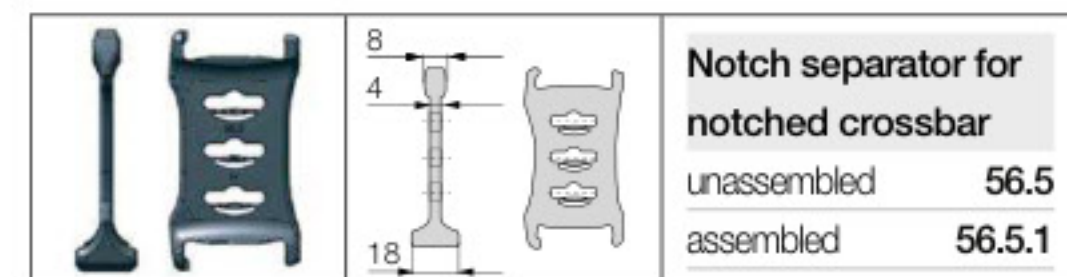
For small cables

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



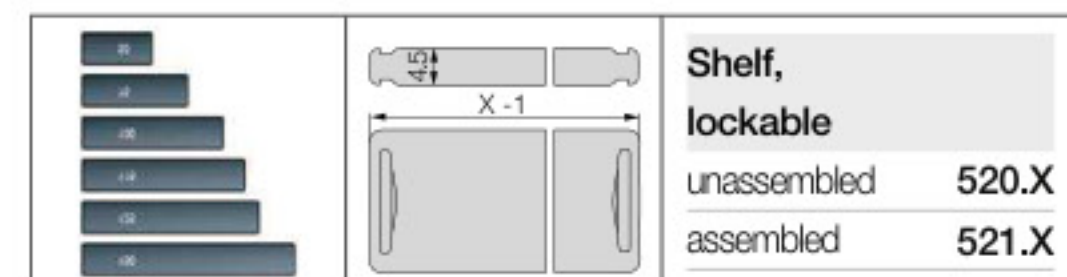
For side-mounted applications

Asymmetrical separator, for defined gap distance. No additional spacers required.



Locks securely in preset increments

Notch separator for exact positioning. Recommended for side-mounted applications.



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]

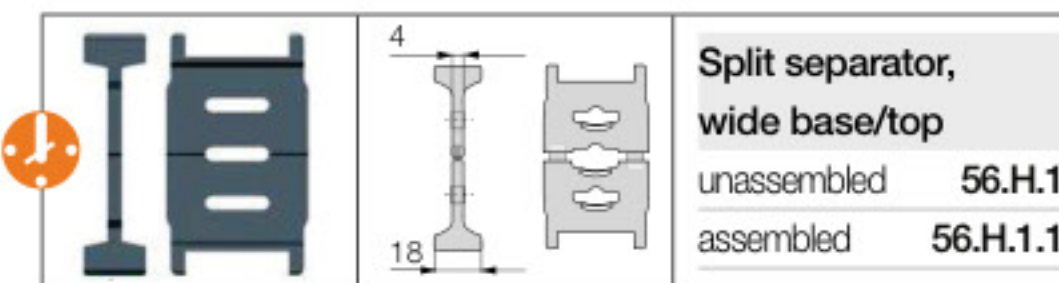
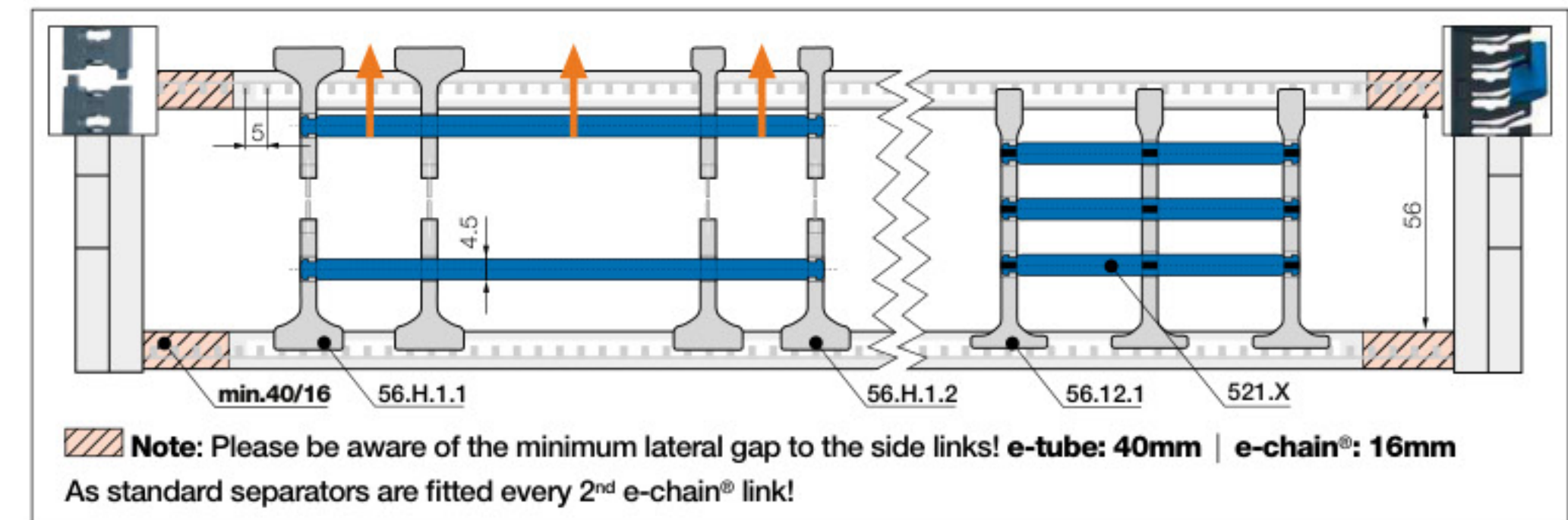


X [mm]	unassembled	assembled	X [mm]	unassembled	assembled	X [mm]	unassembled	assembled
050	520.050	521.050	150	520.150	521.150	300	520.300	521.300
065	520.065	521.065	175	520.175	521.175	350	520.350	521.350
075	520.075	521.075	200	520.200	521.200	375	520.375	521.375
100	520.100	521.100	225	520.225	521.225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

666 More information ► www.igus.co.uk/E4.56 ► www.igus.co.uk/H4.56 ► www.igus.co.uk/R4.56

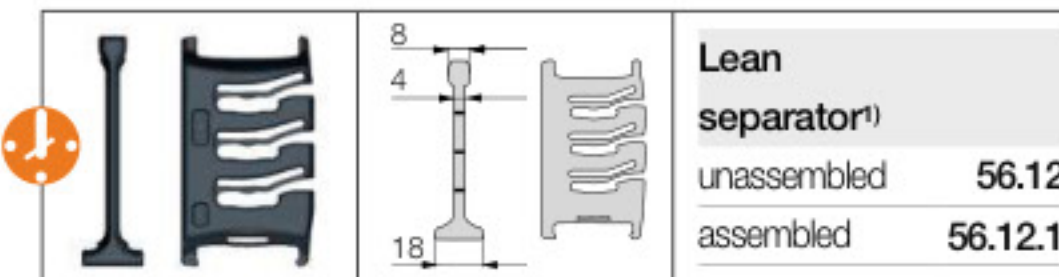
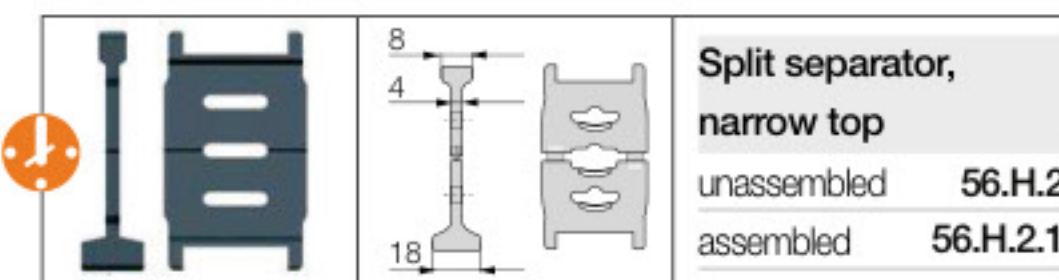
E4.1 | Series E4.56·H4.56·R4.56 | Accessories

Interior separation | To allow faster filling



Split separators

In order to fill e-chains® more easily and effectively, these separators can be split in the middle. This allows easier access to middle shelf partitions. Fast assembly and easy retrofit. 2 types available: with wide or narrow top.

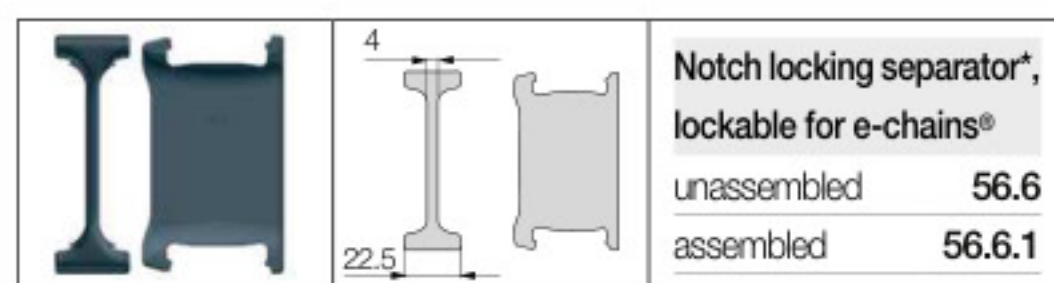
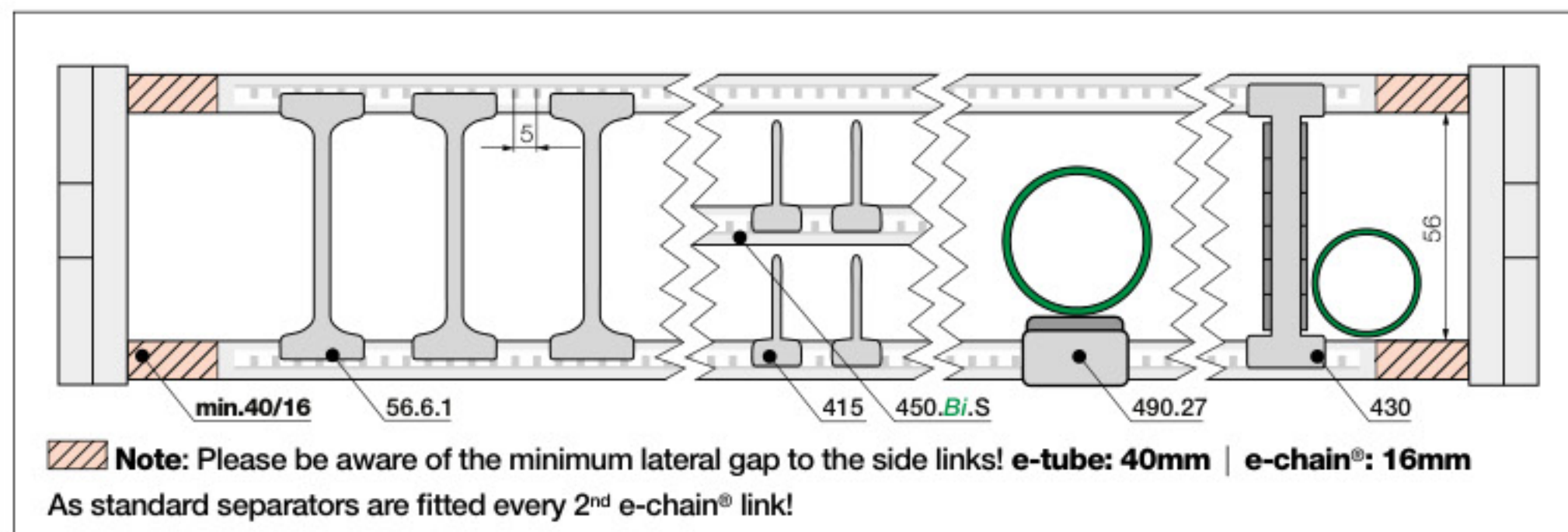
Lean separators¹⁾

For quick fitting of shelves in several layers.

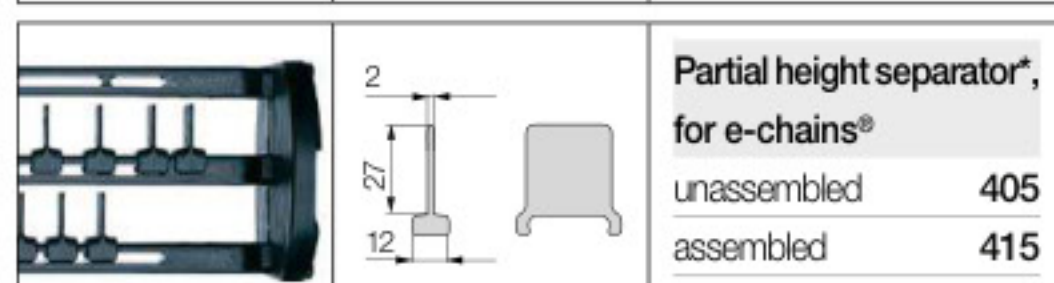
1) Note: Please combine maximum 4 lean separators with one shelf. Not suitable for side-mounted e-chains®!With the lean separator you can quickly insert several layers of cables into the e-chain® and reduce the installation time by up to 50%²⁾.²⁾ Lean interior separation vs. Standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory 3D CAD, configurators, service life calculation and more ► www.igus.co.uk/E4.1

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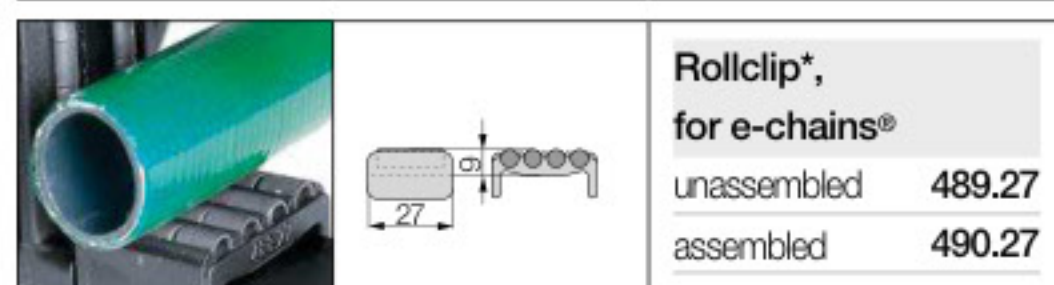
HENNLICH -
ŽIJEME TECHNIKOUo.z. LIN-TECH HENNLICH s.r.o.
Českolipská 9, 412 01 LitoměřiceTelefon: +420 416 711 333
E-mail: lin-tech@hennlich.czwww.hennlich.cz/lin-tech

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

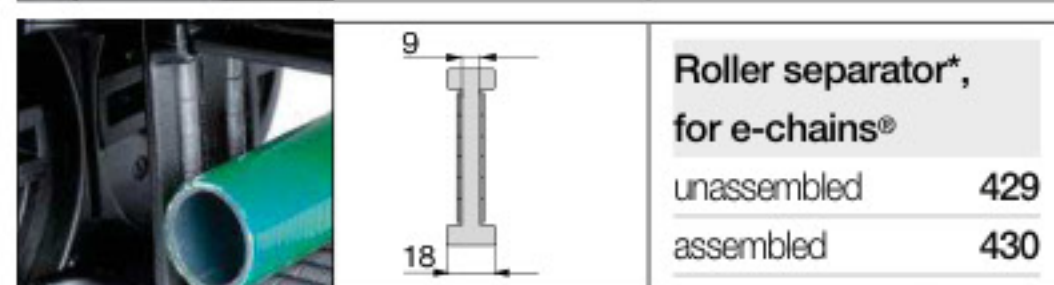
Notch locking separators offer higher crossbar opening forces for high humidity and/or large hydraulic hoses. They can be positioned precisely and then locked in position.

**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.

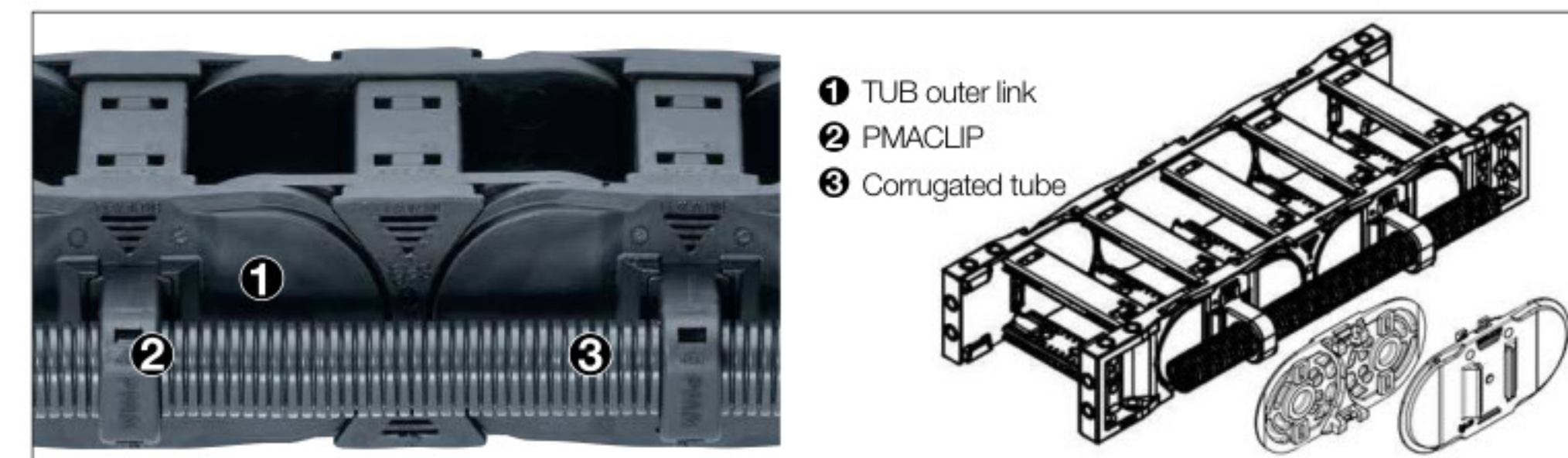
**Rollclip***

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®

**TUB | Safe guidance for corrugated tubes parallel to the e-chain®**

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACIP support to be easily clipped on corrugated tubes with nominal widths 17, 23, 29, 36, 48mm
- Easy access to the corrugated tubes, fast replacement of the hoses
- Reduce assembly time and cost - easy to assemble, without any additional screws or tools
- The part number includes the e-chain® with TUB side sections; the PMACIP support and the hose are ordered separately

Part No. TUB Outer link right*	Part No. TUB Outer link left*	Part No. TUB Outer link at both ends*	For corrugated tube nominal diameter Ø [mm]
E4.56.XXXTUBR.R.0	E4.56.XXXTUBL.R.0	E4.56.XXXTUB.R.0	17 / 23 / 29 / 36 / 48

*As viewed from the fixed end

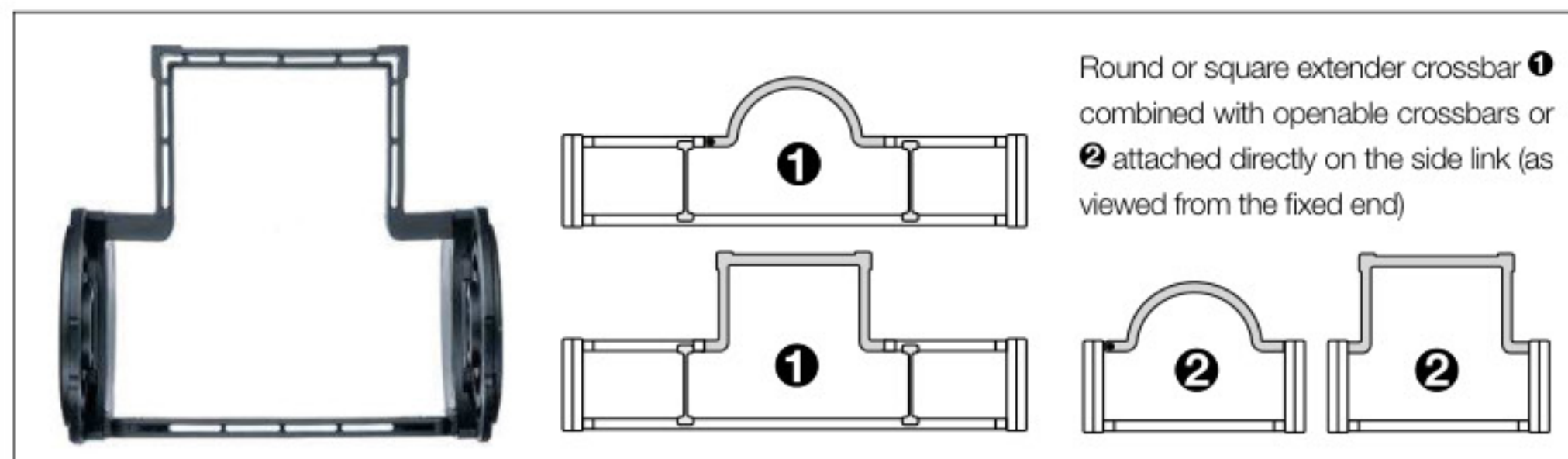
Complete Part No. with the width index **XXX** of **Bi** and the minimum bend radius (**R**). Example:

E4.56.10TUBR.150.0 = with TUB outer sections every 2nd right hand link

Product range | PMACIP | Support, one-piece, with safety clip

Part No.	NW	A	B	C	H	E	M
PMACIP	Ø [mm]	mm	mm	mm	mm	mm	mm
I-BFH-17-0	17	30.0	20.0	34.0	20.0	68.0	M6
I-BFH-23-0	23	38.5	20.0	42.0	24.0	85.0	M6
I-BFH-29-0	29	45.5	20.0	48.0	27.0	99.0	M6
I-BFH-36-0	36	55.5	20.0	56.0	31.0	119.0	M6
I-BFH-48-0	48	67.5	20.0	68.0	37.0	143.0	M6

Extender crossbar with fixed width



Extender crossbars with fixed width | Safe guiding for large hoses

- Suitable for hoses with a maximum outer diameter of 245mm
- Option ① extender crossbars with fixed width to combine with openable crossbars
- Option ② extender crossbars with fixed width attached directly on the side link
- Optionally openable along the inner "Z" or the outer radius "E"
- Gliding with crossbars assembled along the outer radius and a special guide trough

Part No. extender crossbar with fixed width, as individual parts	Hose $\varnothing \leq [\text{mm}]$	Extender crossbar shape	② Fitted to side link	① Combine with openable crossbars
450.15RHD115	115	○ round	No	Yes
450.17RD115	115	○ round	Yes	No
450.25D150	150	□ square	Yes	No
450.30D200	180	□ square	Yes	No
450.35D250	195	□ square	Yes	No
450.40D300	245	□ square	Yes	No
450.20HD150	150	□ square	No	Yes
450.25HD200	180	□ square	No	Yes
450.30HD250	195	□ square	No	Yes

Order example: ① combined with openable crossbars

To receive extender crossbar RHD115 pre-fitted along the outer radius of the chain®, please add index **E**: E4.56.10/15RHD**E**115/10.**R**.0

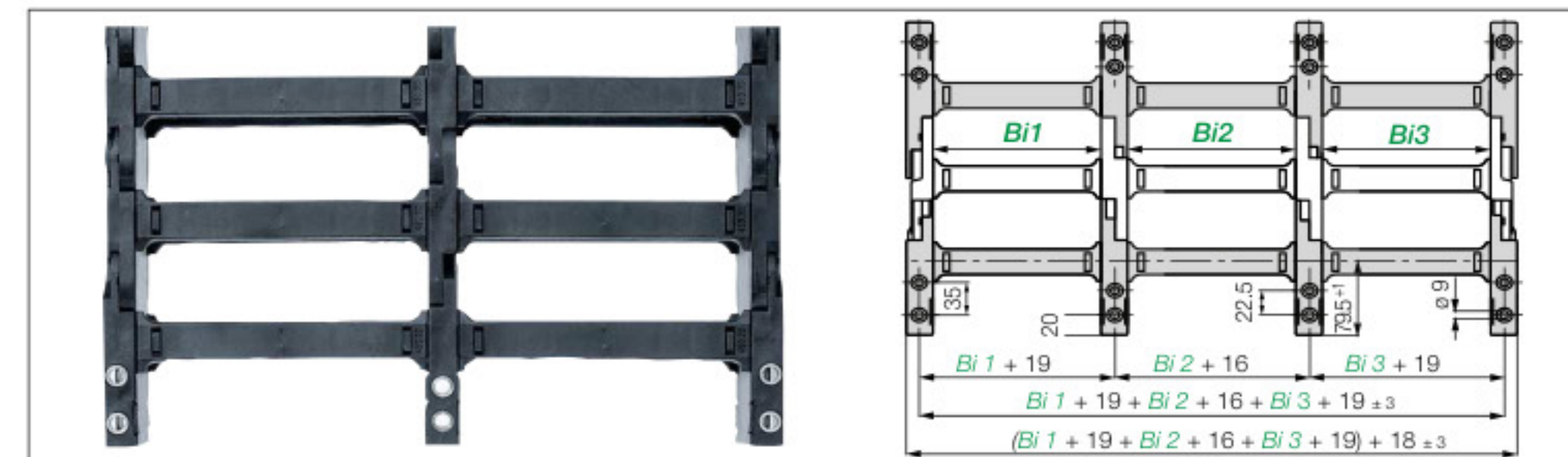
To receive extender crossbar RHD115 pre-fitted along the inner radius of the chain®, please add index **Z**: E4.56.10/15RHD**Z**115/10.**R**.0

Order example: ② fitted to side link

To receive extender crossbar RD115 pre-fitted along the outer radius of the chain®, please add index **E**: E4.56.17RD**E**115.**R**.0

To receive extender crossbar RD115 pre-fitted along the inner radius of the chain®, please add index **Z**: E4.56.17RD**Z**115.**R**.0

Extension links

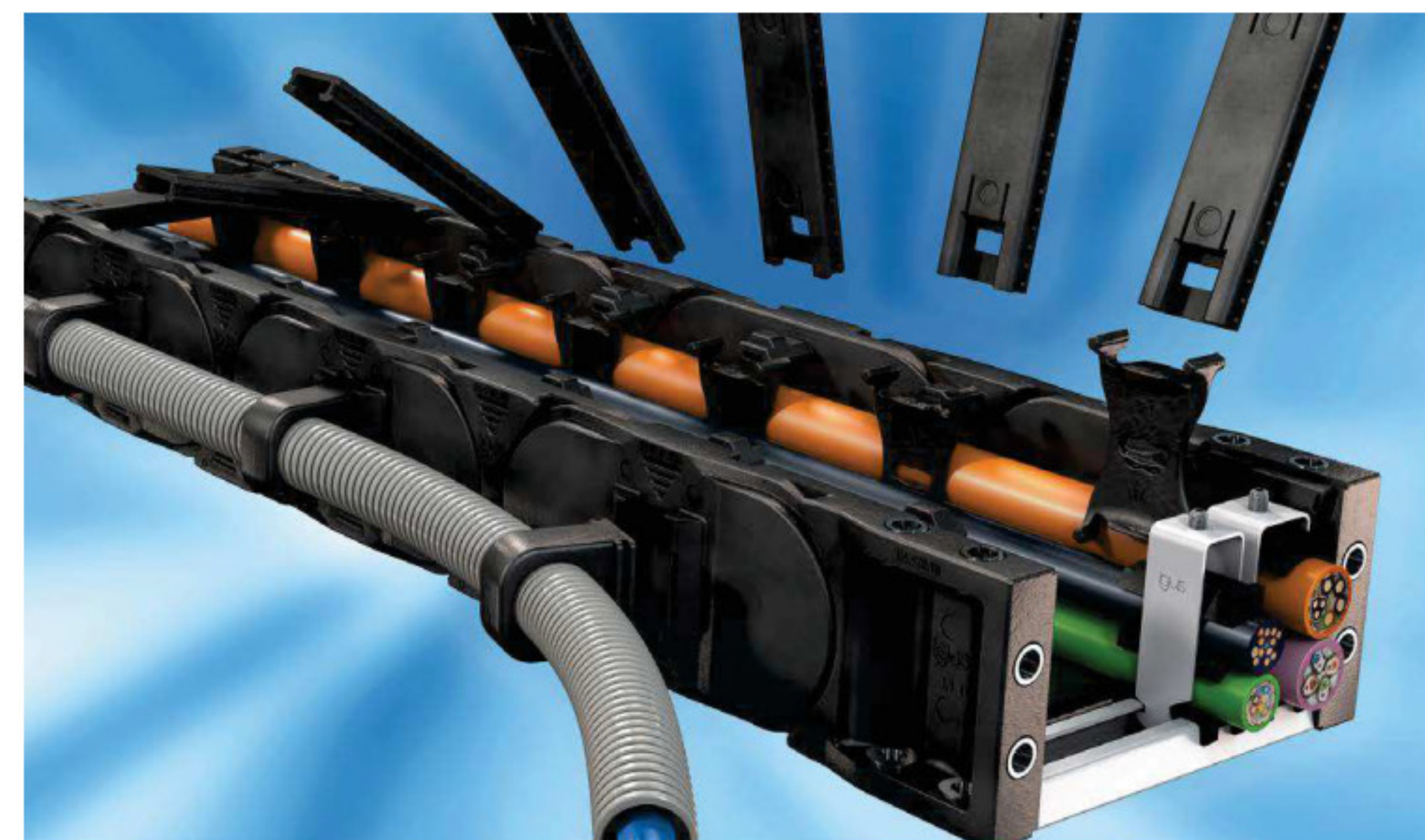


Extension links | For extremely wide e-chains® up to 3.0m

- Virtually unlimited side-by-side extension
- For extremely wide e-chains® up to 3000mm
- Unsupported length FL_G max. can be increased when heavy fill weights are required
- e-chains® and e-tubes can be combined
- Attached with KMA or steel mounting brackets

Part No. Extension link e-chain®	Part No. Extension link e-tube	Part No. Extension link as an individual part
E4.56. Bi1/Bi2/Bi3 . R .0	R4.56. Bi1/Bi2/Bi3 . R .0	422. R .

Complete Part No. with the width index **Bi1/Bi2/Bi3/etc.** and the radius (**R**). Example: E4.56.10/20/10.200.0

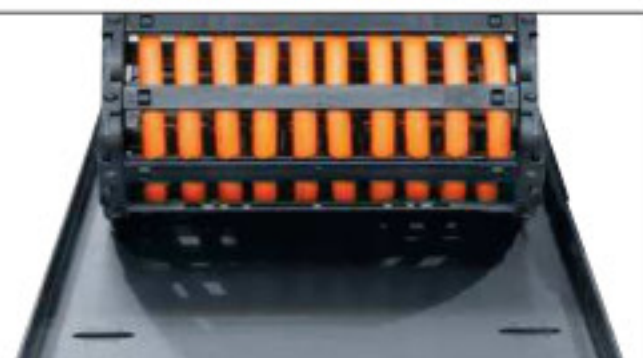


With the E4.1 TUB, corrugated tubes can be reliably guided in parallel, saving space

Steel support tray for support of the lower run

- Simple one-piece support trays for the lower run
- To your requirements and specification
- 4 options available

More information ► From page 1356

**Hot swarf up to +850°C for e-tubes**

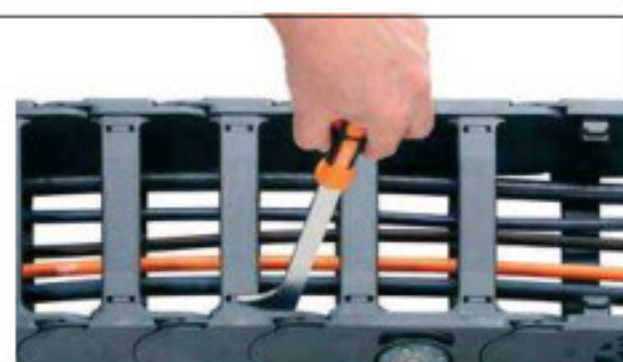
- Lids and shelves can repel swarf up to +850°C. Special production option with the igus® material igumid HT
- No hot swarf melting or embedding into the chain

More information ► www.igus.co.uk/HT

**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.co.uk/E4savetime

**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



Also available for heavy-duty applications | Series 4040HD·R8840HD

Heavy-duty version - for very long travels or heavy fill weights

- High torsional rigidity and tensile strength
- Tough steel mounting brackets
- For long-term operation in very humid environments

Series 4040HD·R8840HD - more information ► www.igus.co.uk/4040HD



E4.1 as a noise-optimised version with extension links. Unsupported application with high fill weight. Harnessed with rigid hydraulic hoses. The max. noise level can be reduced up to 9dB(A) using the optional rubber dampers

Option: E4Q - the next generation of easy-to-assemble igus® e-chains®

The latest E4Q e-chains® generation combines proven design features of the 12-year old, robust E4.1 e-chains® standard with new bionic design elements and a novel opening mechanism. This gives the E4Q an even longer service life and significantly improved ease of installation.

- Opening and closing completely without tools
- Greater strength and longer unsupported lengths
- Lighter e-chain® links due to material saving
- Optional noise dampening - new system for noise reduction

More information ► From page 580

New

