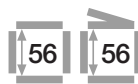


# E4.1 | Series E4.56·H4.56·R4.56 | Product range



Stable 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 2<sup>nd</sup> 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	-	E4.1) 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	-
E4.1) H4. R4.2) 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	-
E4.1) 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	-
E4.1) 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	
E4.1) 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	-
E4.1) H4. R4. 56. 25. R.0	250	284	≈ 4.93	≈ 4.25	≈ 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	-	

1) ▲ ESD version available from stock 2) Removable lid, 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 2<sup>nd</sup> link / R4.56.30.300.0 = fully enclosed

### ESD - many sizes from stock

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

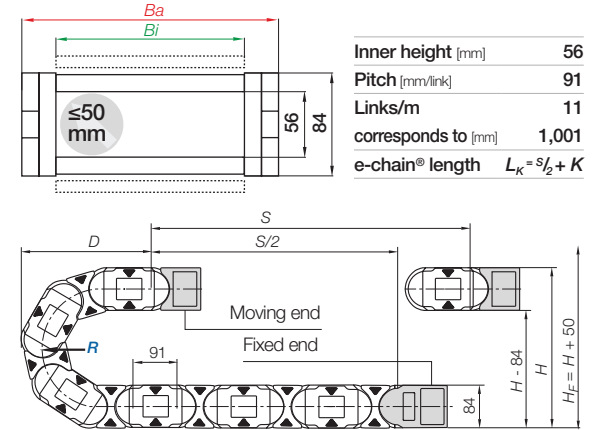
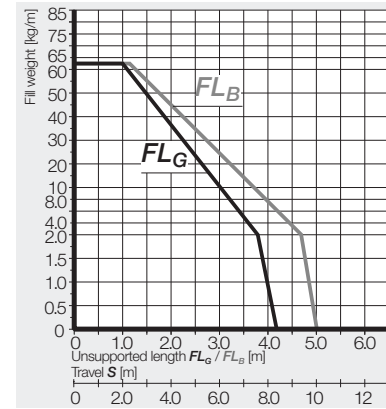
More information ► [www.igus.co.uk/esd](http://www.igus.co.uk/esd)



# E4.1 | E4.56·H4.56·R4.56 | Installation dimensions



Unsupported applications | Short travels

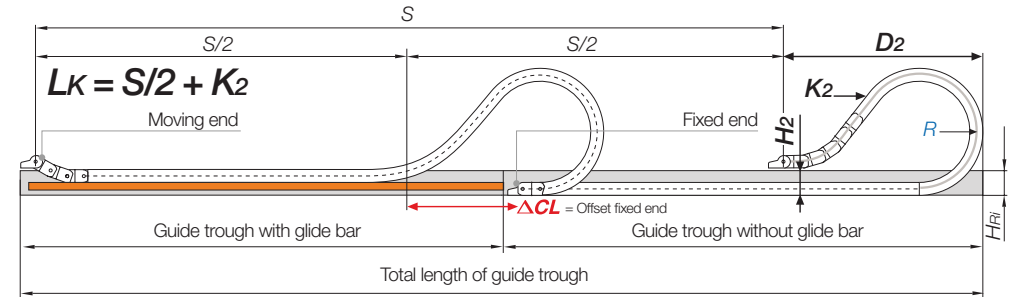


R	135*	150	175	200	240	250	300	350	400	450	500
H <sub>0-25</sub>	354	384	434	484	564	584	684	784	884	984	1084
D	314	329	354	379	419	429	479	529	579	629	679
K	610	655	735	815	940	970	1,125	1,285	1,440	1,600	1,755

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 long travels from 12m to max. 400m



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

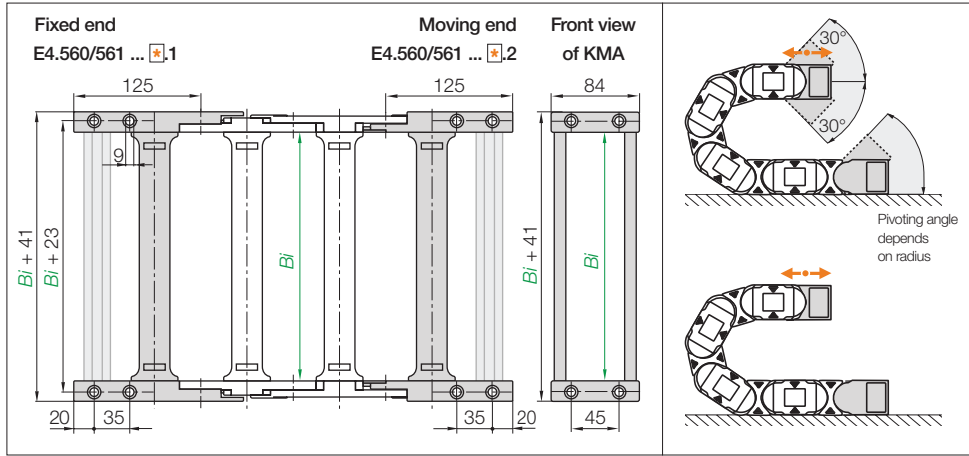
In case of travels between 10 and 12m we recommend an e-chain® with a longer unsupported length.

R	135*	150	175	200	240	250	300	350	400	450	500
H <sub>2</sub>	270	266	266	266	266	266	266	266	266	266	266
D <sub>2</sub> *25	268	450	580	710	900	980	1,180	1,440	1,530	1,700	1,850
K <sub>2</sub>	610	819	1,092	1,274	1,547	1,638	2,002	2,275	2,548	2,912	3,276
ΔACL	-	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



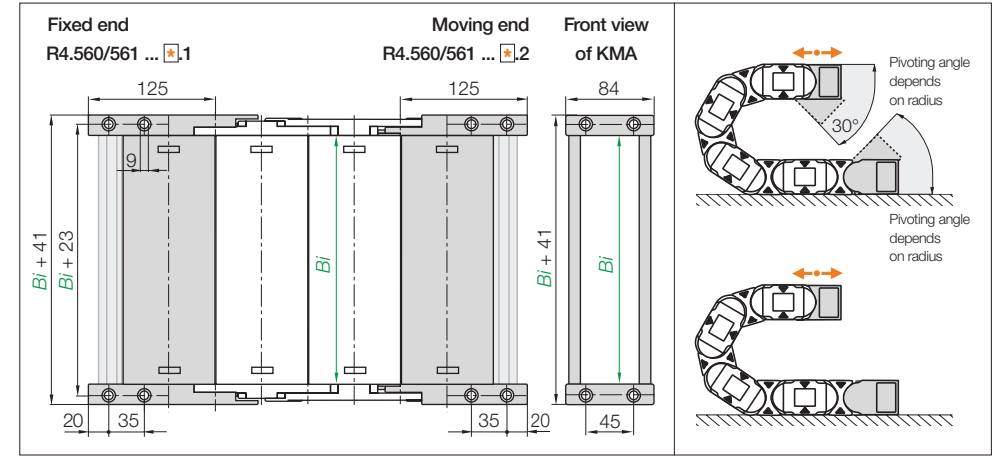
**KMA pivoting** | Recommended for unsupported and gliding applications  
**KMA locking** | Recommended for vertical hanging and standing applications

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	E4.561.05	50	28.	E4.560.28	E4.561.28	287
055.	E4.560.055	E4.561.055	55	30.	E4.560.30	E4.561.30	300
06.	E4.560.06	E4.561.06	65	31.	E4.560.31	E4.561.31	312
07.	E4.560.07	E4.561.07	75	32.	E4.560.32	E4.561.32	325
08.	E4.560.08	E4.561.08	87	33.	E4.560.33	E4.561.33	337
10.	E4.560.10	E4.561.10	100	35.	E4.560.35	E4.561.35	350
11.	E4.560.11	E4.561.11	112	36.	E4.560.36	E4.561.36	362
12.	E4.560.12	E4.561.12	125	37.	E4.560.37	E4.561.37	375
13.	E4.560.13	E4.561.13	137	38.	E4.560.38	E4.561.38	387
15.	E4.560.15	E4.561.15	150	40.	E4.560.40	E4.561.40	400
16.	E4.560.16	E4.561.16	162	41.	E4.560.41	E4.561.41	412
169.	E4.560.169	E4.561.169	169	42.	E4.560.42	E4.561.42	425
17.	E4.560.17	E4.561.17	175	43.	E4.560.43	E4.561.43	437
182.	E4.560.182	E4.561.182	182	45.	E4.560.45	E4.561.45	450
18.	E4.560.18	E4.561.18	187	46.	E4.560.46	E4.561.46	462
20.	E4.560.20	E4.561.20	200	47.	E4.560.47	E4.561.47	475
207.	E4.560.207	E4.561.207	207	48.	E4.560.48	E4.561.48	487
21.	E4.560.21	E4.561.21	212	50.	E4.560.50	E4.561.50	500
22.	E4.560.22	E4.561.22	225	51.	E4.560.51	E4.561.51	512
23.	E4.560.23	E4.561.23	237	52.	E4.560.52	E4.561.52	525
25.	E4.560.25	E4.561.25	250	53.	E4.560.53	E4.561.53	537
26.	E4.560.26	E4.561.26	262	55.	E4.560.55	E4.561.55	550
27.	E4.560.27	E4.561.27	275	60.	E4.560.60	E4.561.60	600

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

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

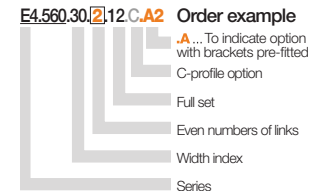
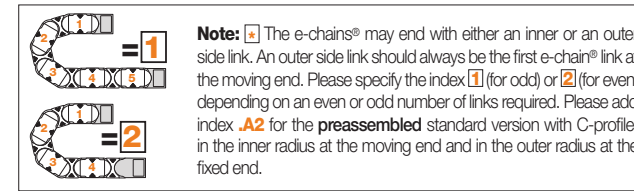
KMA mounting brackets | Attachment from any side | Pivoting | Locking



**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	R4.561.07	75	25.	R4.560.25	R4.561.25	250
10.	R4.560.10	R4.561.10	100	27.	R4.560.27	R4.561.27	275
12.	R4.560.12	R4.561.12	112	30.	R4.560.30	R4.561.30	300
15.	R4.560.15	R4.561.15	150	35.	R4.560.35	R4.561.35	350
17.	R4.560.17	R4.561.17	175	40.	R4.560.40	R4.561.40	400
20.	R4.560.20	R4.561.20	200	46.	R4.560.46	R4.561.46	462

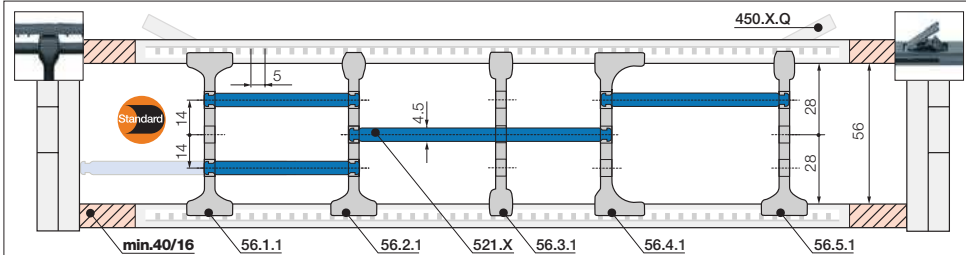
(KMA = polymer metal mounting bracket) For the C-profile option please add index .C



**Strain relief** e.g. clamps, tiewrap plates, nuggets and plug-in clips are available from stock. The complete chainfix range with ordering options ► From page 1300

Interior separation | Increase cable service life

Previous generation of interior separation with other options ► [www.igus.co.uk/E4.56](http://www.igus.co.uk/E4.56)



**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!

**Standard separator, wide base**

unassembled **56.1**  
assembled **56.1.1**

**Separator for QuickLock crossbar**

unassembled **56.2**  
assembled **56.2.1**

**Separator, narrow**

unassembled **56.3**  
assembled **56.3.1**

**Separator, asymmetrical**

unassembled **56.4**  
assembled **56.4.1**

**Notch separator for notched crossbar**

unassembled **56.5**  
assembled **56.5.1**

**Shelf, lockable**

unassembled **520.X**  
assembled **521.X**

Shelves Width = X [mm]	X [mm]		X [mm]		X [mm]		X [mm]	
	unassembled	assembled	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

**Standard - for any application**

Separator with a wide base for maximum holding force in the e-chain®.

**For even faster installation**

Separator for igus® QuickLock crossbar 450.X.Q. 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 in the e-chain®. Also available for QuickLock crossbars.

**For side-mounted applications**

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

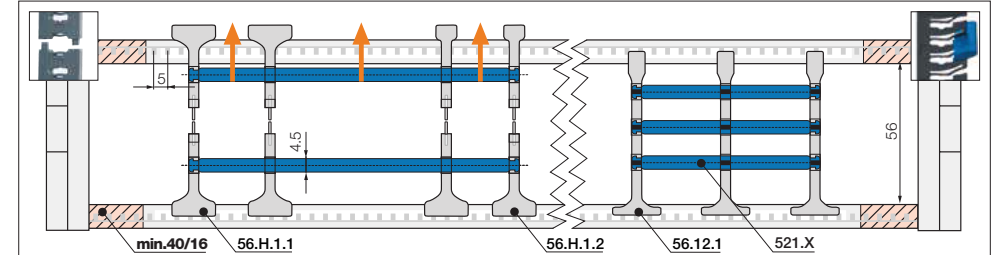
**Locks securely in preset increments**

Notch separator for exact positioning in e-chains®. 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.

Interior separation | To allow faster filling



**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!

**Split separator, wide base/top**

unassembled **56.H.1**  
assembled **56.H.1.1**

**Split separator, narrow top**

unassembled **56.H.2**  
assembled **56.H.2.1**

**Lean separator**

unassembled **56.12**  
assembled **56.12.1**

**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 separators New**

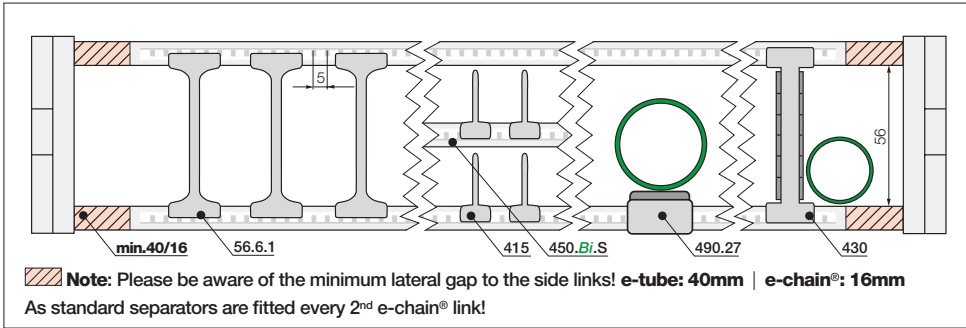
New design allows extremely fast fitting of shelves in several layers, which significantly reduces assembly time. Enables extremely fast replacement of individual cables in a very full e-chain®.

**Lean separator design - several layers of cables fitted quickly, save up to 50%\* assembly time**

(\*Lean separator vs. standard separator - measured on a 4m long e-chain® fitted with 12 cables in the igus® readychain® factory)



More interior separation options



	4 22.5	<b>Notch locking separator</b>	unassembled 56.6 assembled 56.6.1
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**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.

	2 27 12	<b>Partial height separator*</b>	unassembled 405 assembled 415
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**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.

	27	<b>Rollclip* for e-chains®</b>	unassembled 489.27 assembled 490.27
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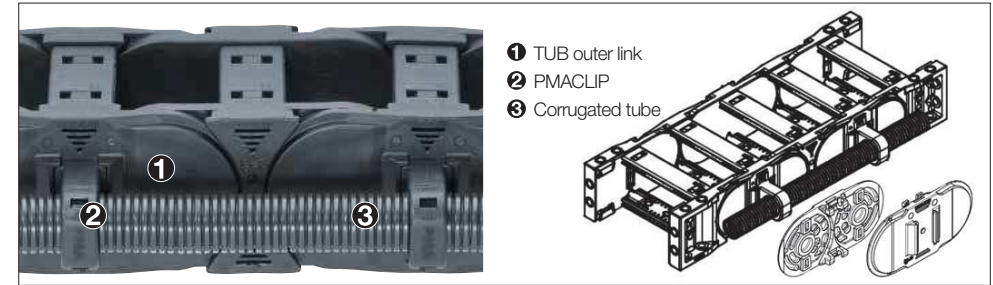
**Rollclip\***  
Minimises abrasion of sensitive hoses. Simply clamps onto the opening crossbar. The movable rollers compensate for relative movement between the e-chain® and hose.

	9 18	<b>Roller separator* for e-chains®</b>	unassembled 429 assembled 430
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**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 for e-chains®

TUB New



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

- Additional, simple guidance for corrugated tubes on the outside of the e-chain®
- PMACLIP allows corrugated tubes with nominal widths 17, 23, 29, 36, 48mm to be easily clipped on
- 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 PMACLIP support and the hose are ordered separately

Part No. TUB	Part No. TUB	Part No. TUB	For corrugated tube nominal diameter
Outer link right*	Outer link left*	Outer link at both ends*	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

Part number appended with width index XXX Bi and radius (R) e.g.

E4.56.100TUBR.150.0 = with TUB outer sections every 2nd right hand link

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

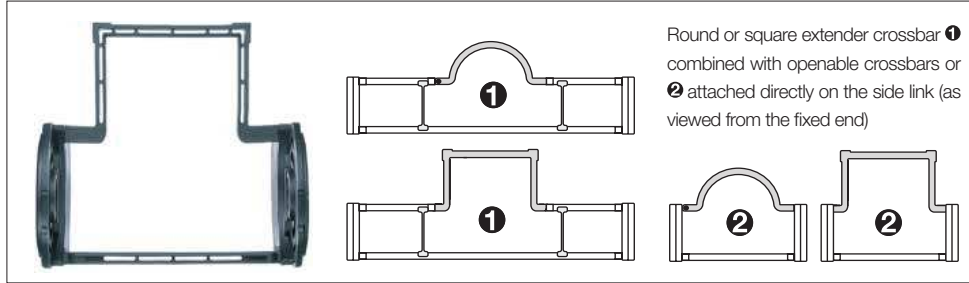


PMACLIP support - one-piece construction with safety clip, suitable for corrugated tubes

Part No.	NW	A	B	C	H	E	M
PMACLIP	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.
- Variant 1 extender crossbar with fixed width to combine with standard crossbars
- Variant 2 extender crossbar with fixed width attached directly on the side link
- Optionally openable along the inner "Z" or outer "E" radius
- Gliding with crossbars assembled along the outer radius and a special guide trough

Part No. extender crossbar with fixed width, as individual parts	Hose $\varnothing \leq$ [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**E115/10.R.0

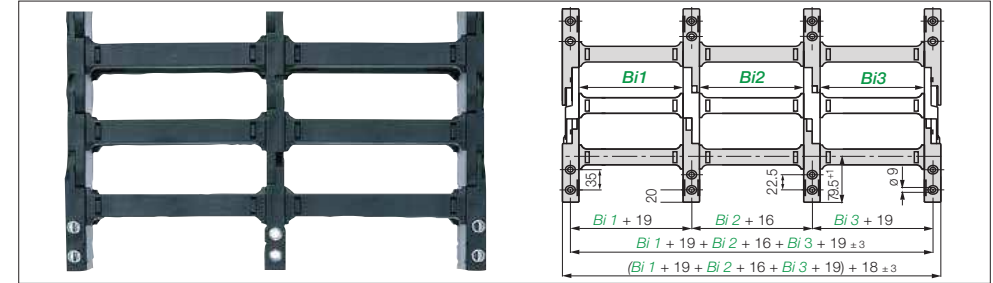
To receive extender crossbar RHD115 pre-fitted along the inner radius of the-chain®, please add index **Z: E4.56.10/15RHD**Z115/10.R.0

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: E4.56.17RDE**E115.R.0

To receive extender crossbar RD115 pre-fitted along the inner radius of the-chain®, please add index **Z: E4.56.17RD**Z115.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 3,000mm
- 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.	Part No.	Part No.
Extension link e-chain®	Extension link e-tube	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

**E4 snapclip - clip-on tiwrap**

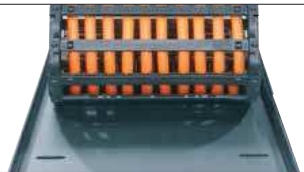
- For side-mounted applications, compatible with many E4 e-chains®
- Serves as a clip-on, lateral guide for hoses and cables on e-chains®
- The loops can be adjusted as required

More information ► [www.igus.co.uk/E4.56](http://www.igus.co.uk/E4.56)

**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 1264

**Swarf up to +850°C**

- e-tubes to withstand 850°C swarf, as a special option
- No hot swarf melting or embedding into the chain
- igus® igumid HT material

More information ► [www.igus.co.uk/HT](http://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](http://www.igus.co.uk/E4savetime)

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

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

Series 4040HD-R8840HD. More information ► [www.igus.co.uk/4040HD](http://www.igus.co.uk/4040HD)

**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 ► [www.igus.co.uk/roller-crossbar](http://www.igus.co.uk/roller-crossbar)



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